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Performance, Decision Latitude, and Health in the Modern Working Life

A Literature Review of Swedish Research

*Caroline van der Vliet and Johnny Hellgren
Department of Psychology, Stockholm University*



SAL TSA – JOINT PROGRAMME
FOR WORKING LIFE RESEARCH IN EUROPE
The National Institute for Working Life and The Swedish Trade Unions in Co-operation

SALTSA is a collaboration programme for occupational research in Europe. The National Institute for Working Life in Sweden and the Swedish confederations of trade unions SACO (the Swedish Confederation of Professional Associations), LO (the Swedish Trade Union Confederation) and TCO (the Swedish Confederation of Professional Employees) take part in the programme. Many problems and issues relating to working life are common to most European countries, and the purpose of the programme is to pave the way for joint research on these matters from a European perspective.

It is becoming increasingly obvious that long-term solutions must be based on experience in and research on matters relating to working life. SALTSA conducts problem-oriented research in the areas labour market, employment, organisation of work and work environment and health.

SALTSA collaborates with international research institutes and has close contacts with industry, institutions and organisations in Europe, thus linking its research to practical working conditions.

Contact SALTSA

Labour Market Programme

Lars Magnusson, National Institute for Working Life, Tel: +46 8 619 67 18,
e-mail: lars.magnusson@niwl.se

Torbjörn Strandberg, LO, Tel: +46 8 796 25 63, e-mail: torbjorn.strandberg@lo.se

Work Organisation Programme

Peter Docherty, National Institute for Working Life, Tel: +46 8 730 96 03,
e-mail: peter.docherty@niwl.se

Mats Essemyr, TCO, Tel: +46 8 782 92 72, e-mail: mats.essemyr@tco.se

Programme for Work Environment and Health

Per Malmberg, National Institute for Working Life, Tel: +46 8 619 67 10,
e-mail: per.malmberg@niwl.se

Anders Schaerström, SACO, Tel: +46 8 613 48 74,
e-mail: anders.schaerstrom@saco.se

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SE-112 79 Stockholm, Sweden

Tel: (+46) 8-619 67 00, fax: (+46) 8-656 30 25

Web: www.niwl.se/saltsa

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Foreword

This report is the result of a pilot study initiated by SALTSA but undertaken in close co-operation with similar studies carried out in France, Spain and the United Kingdom at the initiative of *l'Université Européenne du Travail*, a joint undertaking by social partners in France. The underlying idea is a hypothesis that, even with generous formal decision latitude, a combination of vague targets and limited resources in a job situation might lead to adverse health effects. A key word in this context is *performance*. It is increasingly used in modern working life, including salary negotiations, but rarely defined - in contrast with terms like production or productivity.

A fair amount of personal freedom in working life is usually considered an advantage and a privilege compared to routine jobs or conveyor band jobs, where the worker can exert little or no influence on his own situation, the targets, the job content or the pace of work. However, it is hypothesized that growing numbers of employees in modern working life are working with vaguely defined tasks and expectations as well as insufficient resources, a situation which would be a risk of burning-out processes.

Many tasks in modern working life require personal initiatives, ingenuity, flexibility and adaptability. The reverse of the medal might be uncertainty about the employer's or the clients' expectations. Thus it is often difficult to foresee how the results of one's endeavours will be assessed. In many cases it might also be difficult to estimate the effort and time that will be needed to reach a certain end. Even worse, if time and other resources are too short, conflicts between quantitative and qualitative expectations might arise. Thus serious mismatch between demands and expectations on one hand and available time and other resources on the other would constitute risk situations, posing a threat to the health and well-being of the employees. Working speed is a frequent problem and new health effects, like stress disorders and burnout, are increasing, but so are stress-related physical accidents and psychosomatic disorders. It has been shown, for example by the European surveys of working conditions, that working situations have not generally improved. Old problems, like heavy loads, painful working positions and exposure to noise show no decreasing tendencies. Combinations of physically trying work and imperfect work organisation constitute high-risk situations. Thus, musculo-skeletal strain injuries, which are a dominant health problem in Europe, can be considered not only as physical disorders but also as manifestations of psychological stress.

In Sweden, a tradition of influence, participation and co-determination at work has evolved throughout much of the 20th century and also become legally manifest mainly through the Co-Determination Act and several treaties based on this act. In reality, though, the possibility to exert an influence on one's own work might be illusive for reasons described above. During the 1990s, new types of work organization have emerged and their effects upon the health of workers have not been sufficiently explored. What looks like a flexible work organisation might in reality imply an intensification of work, especially in combination with ill-defined performance expectations. This pilot study is first step in an exploration of this complex phenomenon. The results are published in two volumes – one of which presents a literature review and the other one is based on a limited field study.

We would like to express our sincere thanks to the department of psychology at the University of Stockholm and particularly to Johnny Hellgren and Caroline van der Vliet who have carried out this pilot study.

On behalf of the SALTSA committee for Work Environment and Health

Per Malmberg
Chairman, Professor

Anders Schærström
Secretary, Fil dr

Introduction

Like most Western economies Swedish working life has undergone major structural changes since the beginning of the 1990s. Globalization of communications and economies, increased global competition, and technological advancements, to name a few key aspects, have had a considerable impact on the market. As a consequence, many of the fundamental conditions underlying the organization of work have changed (Wikman, 2000). In question is how individuals relate to these changes and how they affect their work. In order to begin to delve into this we need to first of all understand the new demands of the post-industrial society.

Since 1990, the productivity of Swedish industry has increased dramatically. As a result of this, there has been an intensification of work since the workforce has had to handle an increased amount of work along with a faster work pace (Wikman, 2000). Statistics show that 60 percent of the Swedish workforce experience an increased time pressure at work (Statistics Sweden, 1997). This may also, in part, be due to the fact that many organizations have been downsizing, which has resulted in a smaller number of employees carrying out the same amount of work (Hellgren & Sverke, 2001). One of the changes in modern working life has been brought about by the widespread effects that downsizing and other organizational modifications have had on the public sector and other organizations of salaried employees (Isaksson, Hellgren & Pettersson, 1998; Sverke & Hellgren, 2002).

A fundamental factor that a modern company must learn to deal with is unpredictability. One way of handling this lack of predictability is to increase flexibility. Increased flexibility can have a bearing on a number of working conditions including temporal and spatial organizational aspects, as well as types of employment (Allvin, Wiklund, Härenstam & Aronsson, 1999). The ability to reorganize and deal with change is thus in increased demand when it comes to companies as well as their employees. Following on the heels of such change are a number of efficiency measures, which often involve cutbacks and restructuring. In a comparative study with other European countries, Sweden stands out as a country in which overtime work is quite commonly utilized as a means of promoting flexibility (Cranfield Network, 1996; cited in Aronsson & Göransson, 1997a). Aronsson and Göransson (1997a) also go on to mention that a more competitive labor market can lead to many employees feeling threatened by the

possibility of unemployment or a shutdown of operations, and that, because of this uneasiness, they choose to work overtime without pay.

Another component to increased flexibility involves, as mentioned above, types of employment. During the 1990s the use of alternative employment contracts has become more common in Sweden. These alternative employment types include short-term employment, employment based on a specific project or a special need, as well as employment arranged through temporary staffing agencies (Sverke, Gallagher & Hellgren, 2000). These alternative employment arrangements benefit employers by bringing about what is known as 'numerical flexibility'. Those with temporary employment, however, meet with a number of negative consequences. This employment group does not have the same opportunity to exert influence in the workplace as those with permanent positions (Aronsson & Göransson, 1998), and many lack job security which, according to numerous studies, has been negatively associated with well-being, commitment, and health (Hellgren, Sverke & Isaksson, 1999; Isaksson, Hellgren & Pettersson, 2000; for a review and meta-analysis, see Sverke, Hellgren & Näswall, in press). Jeding et al. (1999) also discuss the indirect effects of job insecurity on health. Temporary employees are not covered by company health plans and are not taken into account when the work environment is evaluated, which, in many cases, serves as the basis from which future changes to the work environment are planned.

The psychosocial work environment seems to have been affected by these changes, and consequently, work-related health as well (Wikman, 2000). The physical work environment is increasingly improving, but the psychosocial work environment seems to have worsened (e.g. Westerlund, Ahlberg-Hultén, Alfredsson, Hertting & Theorell, 2000). This has affected women in particular who, more often than men, hold stressful jobs (Szulkin & Thålin, 1994). Bäckman and Edling (2000) found that white-collar workers at the intermediate level have the largest increase in psychosocial demands in their work environment; women reported a more exposed position to psychologically demanding work environments than men (23 percent versus 16 percent).

Work circumstances, involving where and even when work is performed, comprise another aspect of work flexibility (Allvin et al., 1999). As a consequence of increased flexibility and technological advances, mobile teleworking is becoming more common in Sweden. This kind of work arrangement not only allows the employees the possibility of structuring their own work, but the arrangement also entails something that is demanded of them (Jeding et al., 1999). This indicates that the outer limits of work have become less distinguishable, which leads to a situation in which an even greater demand is placed on the individual, who oftentimes overexerts herself in the absence of signals which would indicate that work is done (Ahlberg-Hultén, 1999). In

modern working life, employees are expected to be more self-directed and autonomous which requires that they are highly skilled. Autonomy is usually seen as something positive but it might be problematic if it is combined with vaguely defined tasks and expectations, as well as insufficient resources, which is sometimes the case in modern working life (Allvin, Aronsson, Hagström, Johansson, Lundberg & Skärstrand, 1998).

An important finding from work environment research is that influence and control are central to determining well-being. The demand-control model (Karasek, 1979; Karasek & Theorell, 1990) thus assumes that the possibility to control the work situation is crucial to workers' health. During the 1990s, certain labor groups have increased their potential to influence, while others have not (Wikman, 2000). Consequently, this latter group runs the greater risk of experiencing work related poor health (Marklund & Wikman, 2000).

In a report from the National Social Insurance Board (RFV 2002:4) a close connection between the negative changes in the psychosocial work environments, on one hand, and the increase in long-term sick-leaves and the negative effects on mental health, on the other hand, is assumed. During 1997 and 1998 there was an increase in the number of long-term sick-leaves (over a year) of almost 50% (Lidwall & Skogman Thoursie, 2000). The total number of people on long-term sick-leave, receiving sick compensation, was 25 percent higher in 2001 compared to 2000, which is an increase from 87,000 to 109,000 persons. Furthermore, fewer people on sick-leave return to work, and the proportion of people with mental diagnoses has increased substantially, especially among women. The hypothesis that the increase in sick-leaves is partly due to work related stress is supported by the fact that stress related symptoms and different neurotic states- such as depression, stress-reactions, and anxiety- have increased (from 8 percent in 1999 to 12 percent in 2000), while the more malignant symptoms have remained stable. The increase is significant for both men and women (RFV 2002:4).

Purpose and Method

The purpose of this literature review is to give an overview of selected Swedish research on performance, decision latitude, and health. The study focuses on the so-called “modern working life” and occupations within the new economy and therefore mainly concerns research conducted since 1990. In question is how the change in work situation affects individuals. A second purpose is to identify and discuss future directions for research in this field.

This literature review is primarily based on a number of searches using the Arblin and PsycInfo databases. The following words were used, either alone or

in various combinations, as keywords in the search: *work performance, performance evaluation, decision latitude, demand, control, participation, work load, resources, influence, role ambiguity, role conflict, work related illhealth, well-being, stress, effort, white-collar workers*. Alongside this type of search method, an 'ancestry approach' was used, where references in known literature of interest lead the way to the discovery of additional sources (Cooper, 1989).

All of the empirical studies considered here are either a product of Swedish research or are studies conducted on the Swedish labor market. The present study does not claim to be exhaustive, but rather should be regarded as an overview of behavioral science research on Swedish working life.

The review begins with a description of the modern working life based on Swedish research. The two following sections focus on performance and performance based pay systems in this new working life. Next we turn to decision latitude where we focus on the Demand-Control Model. Following this we turn to health consequences for the individual as a result of the new working life. In the concluding section we summarize the research and discuss directions for future research.

Modern Working Life

According to Allvin et al. (1998), an individual's work situation is characterized, in the modern working life, by an increased measure of autonomy and self-determination. It is thus important that employees develop independence and confidence in their own ability. High performance demands, in combination with a work situation lacking external boundaries, require that individuals be focused and goal-oriented. This awareness of goals puts a continual demand on one's ability to take initiative and frame objectives, while, at the same time, calling for increased responsibility. Allvin et al. (1999) found that independent work, besides leading to job satisfaction, can also lead to feelings of anxiety and insecurity since employees may not know what is expected of them. Autonomy requires that an individual knows what she is going to do and how she is going to do it. Consequently, both goal consciousness and competence are needed to be able to handle this type of work situation (Allvin et al., 1999).

In this new working life, objectives lack a guiding force, i.e., it is not clear exactly what should or should not be considered a component of work, or even how work should be carried through. Demands from the customer, the branch, and the market guide the direction of work to a certain extent, but this requires a continual and goal-oriented interpretation process. In this case, one's earnings

serve as a source of feedback on how well one has interpreted these demands (Allvin et al., 1999).

Work today has a great deal to do with interpreting the customer's expectations and needs. It primarily centers on the communicative process rather than on producing a ready-made product. Thusly, a 'good interpretation' is the goal of this process. This establishes an unpredictability in both the process as well as in the ultimate goal (Allvin et al., 1999).

There are obvious advantages with increased autonomy but also a number of possible drawbacks. It gives rise to certain demands on the employees; they need to be independent, creative, and full of initiative. Employees, that is to say, have to take responsibility for their own work. This may have a negative impact on the individual who feels vulnerable after making such a personal investment and, consequently, ends up shouldering the outcome of the work in a very personal way. Allvin et al. (1998) also found that personal resources and social support have become increasingly more important in modern working life. The new working life thus offers individuals greater opportunity to structure their own work. At the same time this opportunity denotes an increased personal responsibility.

However, to a certain degree this increase in autonomy has been brought into question by Westerlund et al. (2000) who acknowledge that salaried employees certainly have more of a say in how work assignments are carried out and, to a certain degree, even in what is to be done. However, they maintain, this can be regarded as a type of pseudocontrol, where only a framework for working is given. In other words: more will be done better, cheaper, and faster as demands increase. That fewer people do more work has been found to constitute a health risk (Hellgren & Sverke, 2001). Also, increased liberty can result in more obscure demands, which then results in stress becoming more difficult to handle (Westerlund et al., 2000).

Jeding et al. (1999) demonstrate that mobile teleworking has increased in Sweden. The number of teleworkers totaled approximately 700,000 in 1995. In order to be classified as a distance worker it is required that at least 2 hours of work be carried out at home or some other remote location each week. Of these workers, approximately 300,000 work at a distance between 2 and 5 hours each week and around 400,000 work at a distance for a day or more each week. Of these 400,000 or so, only around 50,000 work exclusively at distance (Engström & Johansson, 1997). Allvin et al. (1998) found that the more freedom a person has at work, the more difficult it becomes to get free of the work. Thus, the loss of work boundaries that modern information technology brings with it can put new limitations on people's living situations. The downside to having more autonomy and flexibility is, according to the authors, increased mental strain and

its subsequent health risks, along with unresolved role conflicts and stagnation in knowledge (Allvin et al., 1998).

It is the constant availability of people in modern working life (Allvin et al., 1999), coupled with the fact that their tasks are more and more difficult to mentally put aside even during “off-hours” (Aronsson & Svensson, 1997), that results in a blurring of the boundary between work and leisure time. Another reason for the difficulty in distinguishing between work and leisure time is that the tasks of the salaried employees can often be carried out better than satisfactorily, since, in many cases, such work does not result in, as in goods production, a tangible finished product (Allvin et al., 1999).

Contributing further to the problem of not being able to distinguish between work and leisure time is that today's employees often believe that the work they do must be of importance to them personally, and go so far as to integrate it in with their own goals in life. When one's work goals become one's personal goals the boundary between work and leisure disintegrates. Allvin et al. (1999) also maintain that work can wedge its way into employees' private life when they feel compelled to be available at all times. Another such example was found among the interviewees in the Allvin et al. (1999) study where it was frequently the case that the interviewees had a difficult time avoiding thinking about work and many also took the opportunity to do work while they were with their families. Furthermore, in another example of how working life intrudes on private life, it was also found that many of the investigation's participants treated leisure time as they would a job. The changes mentioned above constitute risk factors in the new working life since rest and recovery are essential to one's ability to meet new demands (Aronsson & Svensson, 1997).

According to Ahlberg-Hultén (1999), only a limited number of studies have investigated if these changes in work content or organization have negative health effects. Allvin et al. (1999) have carried out an explorative study that aims at describing the new absence of boundaries of work, along with which social and mental consequences are involved. The study was based on a set of 14 interviews from the MOA-project, which, when translated, stands for the project on Modern Working Conditions and Related Living Conditions for Women and Men. The authors point out that no single individual works without boundaries in every respect covered by the study, but that everyone works without boundaries in at least one respect.

The results indicate there are three different defining aspects for work's new absence of boundaries: the flexibility of working conditions, the creation of heterogeneous working conditions, and the fact that the work process is characterized by a communications process. The creation of more heterogeneous working conditions pertains to the fact that fewer and fewer individuals share the same experiences due to a loss of spatial boundaries. Any notion that employees

share a common experience through their work undertakings becomes difficult to speak of. More heterogeneous working conditions require that management take on a more active role in how the employees' various work environments are set up.

Aronsson, Bejerot and Härenstam (1999) have investigated what views academics have on their working conditions in modern working life. The study focused more specifically on to what extent their working situations coincided with their images of a model job – if there existed a discrepancy between their current work situation and their perception of an ideal one. This study differs from many earlier studies partly since it focuses on academics and partly because healthy work, as a concept, is based on the subjective judgments of the employees.

Of the twelve aspects of healthy work that were examined, the value of work and work intellectuality were most important to the academics sampled (Aronsson et al., 1999). Career possibilities and pay were considered to be least important in this context. Work intellectuality involves the possibility of being able to utilize one's intellect at work and to have a certain degree of latitude and room for innovative thinking where one's individual personal dispositions are also allowed their proper place. Many thought that they were not receiving enough leeway at work for innovative thinking or initiative taking. The second aspect of healthy work considered to be of particular importance was the value of work. Such a value can be influenced by whether society benefits from the work or if the work values are in accord with an employee's personal values. Academics felt that their work situation fulfilled this aspect of healthy work to a greater extent than the aspect of work intellectuality. That is not to say that this dimension was completely fulfilled. Those academics that worked with other people tended to give this aspect greater importance and felt, to an even greater extent, that it was fulfilled. The results furthermore indicated a considerable discrepancy between the ideal and the actual in regards to both intellectual stimulation and the constructive utilization of personal qualities (Aronsson et al., 1999).

A comparison of privately and publicly employed workers revealed no substantial differences regarding each group's opportunity to influence important decisions (Aronsson et al., 1999). Publicly employed women, however, differed from the others since, in this group, 51 percent reported that they consider influence to be a very important aspect of healthy work in spite of the fact they lack the opportunity to influence important decisions.

Women and men are very often found in different professions and employment sectors. In a comparison of men and women in the same profession, no considerable gender-related differences were found. Moreover, both age and position in the organization affected one's estimation. A comparison of

employees in lower and higher positions showed that those in higher positions experienced less of a discrepancy between their work situations and the aspects of healthy work (Aronsson et al., 1999).

Despite all groups placing a very high value on intellectual stimulation, 40 percent of the respondents claimed they put their most advanced skills to use during only half or less than half of their time at work. Eighteen percent of those publicly employed said they utilized their most advanced expertise all the time while 35 percent used such expertise half or less than half of their time at work. The corresponding figures for those with private employment were 10 percent and 57 percent respectively. Aronsson et al. (1999) suggest, with these results in mind, that the reason why the study turned out the way it did could be related to the fact that many graduate employees are promoted to managers. The role of manager often calls for the use of more general knowledge and abilities, which does not give them much of an opportunity to use their most advanced skills. An examination of this indicated however that hierarchical position was of little consequence in this matter and that it instead had more to do with the differences between various professional groups.

The results of Aronsson et al. (1999) study reveal that a portion of the academics' knowledge goes unused. The authors, in a somewhat speculative interpretation, assert that a good working situation can possibly be brought about by putting people's innovative thinking and initiative to use, and by creating a work situation where employees can apply their capabilities to the fullest instead of engaging in general competence development.

Aronsson, Gustafsson and Dallner (2000) conducted an explorative study of a labor market related pattern which they believe is of significance to the health, development and stress levels of individuals. Their supposition is that a central-peripheral pattern is emerging in the labor market with respect to the types of employment and working conditions. This structure is pervasive at both the individual and the organizational level. The central-peripheral structure has been formed from the concepts of risk, control, uncertainty, and stability. Located in the center are mainly those with permanent contracts. This core group is surrounded by a second closely connected group of people who have a variety of temporary employment contracts. The third group, or sphere, consists of self-employed and free-lance workers. Furthest out from the core or center we find the unemployed.

Those in the center receive relatively good opportunities for development and employment security. Demand and control are relatively well balanced in this core group. The working conditions for even this group are nevertheless affected by the state of the labor market (Aronsson et al., 2000).

Levi (1997) as well as Aronsson and Göransson (1997b) expound on the risk of getting trapped in a bad job. This concerns the fact that many of today's

employees choose to remain in bad jobs because they fear ending up in an even worse situation if any layoffs were to subsequently occur. That many employees work unpaid overtime could be a manifestation of this fear of ending up on hard times as well. The long-range health consequences of the core group's new circumstances are still unknown.

For a company to ensure flexibility the core group must be surrounded by a second closely connected sphere or group of people who have a variety of temporary employment contracts (Aronsson et al., 2000). This group consists of approximately half a million people and constitutes around 16 percent of the entire work force (Statistics Sweden, 1998). Temporary contracts are gender segregated in that women are in the majority for substitutes and need-based temporary employment while men are found above all in project work of higher status, such as independent contractors and consultants (Aronsson et al., 2000).

Remarkably, the various types of employment contracts are not equally distributed throughout the structure of the labor market. Need-based employment contracts are mainly utilized in the trade, restaurant, cooking and nursing branches, as well as in the social sector, while project work are to be found in a number of industrial sectors. While those employed on project basis are usually more highly educated than the core group, it is the people employed on need-based contracts who have the lowest level of education. They very rarely receive any training on the job and maintain they have little opportunity to develop and learn in their work. Their opportunity to influence organizational decisions at work is also quite slim. All of these factors result in need-based employees running a higher risk of suffering from ill-health (Aronsson et al., 2000).

The third group, or sphere, consists of self-employed and free-lance workers, and very little is known about this group's health status. Furthest out from the core or center we find the unemployed and those benefiting from measures taken to help unemployed get back on the labor market.

According to Aronsson et al. (2000) there is surprisingly little research available which analyzes the conditions of employees on temporary contracts. Consequently, the authors undertook to conduct such an investigation and, with the help of their earlier work, came to the conclusion that it would be beneficial to divide temporary workers into subgroups since it was such a heterogeneous group to begin with.

A goal of Aronsson et al's study (2000) is to contribute to the development of a framework that can be used in future studies that seek to combine labor market aspects with organizational aspects. The authors maintain that a center-periphery divisioning is supported by their demonstration of the differences in working conditions between the various groups. They also discuss whether temporary contracts serve as bridges to permanent employment or just dead-ends, and tend to be of the opinion that the later is the case as they search after longitudinal

research in the area. The authors also discuss the fact that women are so drastically over-represented in the two most problematic types of employment, need-based employment and substitutes. The under-representation of women in the most favorable type of temporary employment, i.e. project work, produces a set of gender and equality related problems for the changing labor market.

Aronsson et al. (2000) also believe that research on individuals at work should not only deal with labor market and employment conditions relative to specific companies, when these hold significance for the individual's health and engagement at work. Swedish and international research on working conditions has only been able to do this to a limited extent, and the carrying out of such an undertaking would nonetheless require constructive categorizing and structuring.

Aronsson (1999) discusses those changes in the labor market which widely affect public health. A unified and functional theory involving the demands of new working life has still not been produced. However, there are a number of applicable theoretical formulations, which can be assumed to capture a variety of different aspects of the new and flexible working life. Aronsson (1999) accounts for a number of stressors and conditions that, according to him, will have an influence on the formulation of such a theory. Stress related to change, constant adjustment, loss of control, social support, social network, trust, psychological contract, allostatic load theory, and long-term strain are some of the author's examples.

Performance in the Modern Working life

According to Torbiörn, Pettersson and Arvonen (1996), good performance is something that cannot easily be defined. Performance, conceptually speaking, can be seen as an inclusive term primarily replacing what was earlier referred to as productivity and efficiency. Because good performance contributes to the quality and goal attainment of the organization, it is important to increase the awareness of organizational goals and to discuss the concept of quality within the organization in order to define what constitutes good performance (Wallenberg, 2000a).

To define performance is, however, of utmost importance since organizations are more and more often turning to pay-for-performance systems. A reward system based on performance might be very stressful if employees do not know what is expected of them, which can happen, for example, if they experience high demands and lack sufficient influence or control, or if the performance outcomes are unclear or blurred. Management can also use performance evaluation as a basis for decision-making regarding, for example, promotions or

terminations. Furthermore, it can also be used to identify where training and development are needed or as a criterion in evaluating selection and development programs (Hedge & Borman, 1995). This indicates that performance evaluation is of utmost importance in the modern working life.

In the new working life we can observe an ongoing shift from a manufacturing to a service economy (Furåker, 1995; Lundberg & Gonäs, 1998). Mental rather than physical activity is emphasized. This, together with increased flexibility, tends to make work indistinct in character, which in turn makes performance more difficult to define and measure.

Previously, performance had more to do with what a person was able to accomplish. Today, it has more to do with what a person wants to do, what a person can do, and what a person knows (Torbiörn et al., 1996). Torbiörn et al. (1996) have developed and tested a theoretical model that is founded on the idea that a number of subjective conditions must be fulfilled before desirable behavior can occur. They designated these conditions as: should, may, can, know, and will. These subjective conditions should, in turn, be combined with objective conditions in a work situation, i.e. responsibility, authority, competence, information and incentive. Ideally, all of these subjective conditions should be fulfilled and coupled with corresponding objective conditions in the work situation in order for desirable behavior to occur. The model was tested and found valid in an empirical study conducted by Torbiörn et al. (1996). The authors concluded that the model can serve as a tool for identifying the objective aspects of the work environment that can contribute to desirable performance. However, this is contingent on whether the theory is developed further along with more refined psychological prerequisites.

Performance based pay systems

Arguments have been made for both a more intimate connection between pay and performance in the modern working life, and for a new compensation system to meet the needs of the nature of new work. Changes in pay policy is one part of a broader transformation process affecting the entire nature and order of working life, where pay policy is but one element in a greater conversion process concerning new management principles for the labor market in general (Carlsson & Wallenberg, 1999).

According to le Grand (1996), new approaches to pay and reward systems are needed since the nature of work itself has changed (see also Wallenberg, 2000a). le Grand (1996) furthermore maintains that both employers and labor leaders are in agreement that a new pay system should be devised. There is little agreement, however, on what this system should entail. The purpose of new pay and reward

systems is to redirect the employee's behavior and activities so as to be in accordance with the organizational goal. Although reward is, in part, given for good work performance, it is also earned through engagement in other activities that lie indirectly in the company's interest (le Grand, 1996).

Another purpose of performance-based pay is to attract and retain employees. By establishing a clear relation between work effort and reward, the intent is to increase motivation while retaining the most productive individuals. Those assessments which determine the pay rate are based on a method of employment evaluation involving the completion of a work analysis in which employees are judged according to how much value they are believed to bring to the organization (le Grand, 1996).

To inspect and evaluate an employee's work contribution is, nevertheless, no easy task. le Grand (1996) argues that a trend towards more independent and qualified work makes it difficult to supervise the performance of the employees, which, in turn, makes it more difficult to establish a clear link between performance and reward. Without this link, the supposed benefits of performance-based pay systems are not forthcoming. For this positive connection between performance and reward to manifest, those involved must first be well aware of the desired results and, furthermore, have an understanding of how their own performance can affect these results. le Grand (1996) further maintains that, in modern working life, there is an increased dependency between the performances of employees, and that this interdependency makes it difficult to determine what each individual employee has performed. This is yet another difficulty that a new performance-based pay system must overcome.

According to a study by Wallenberg (2000a), more individualized and performance-based pay methods should increase employee motivation, which is believed to lead to better performance. In most organizations, it is common practice for the employers themselves to evaluate their employees. It is thus the subjective judgment of the supervisor that determines the pay rate. This asks a great deal of the evaluating supervisor including a good level of knowledge and maturity, as well as communication skills. Any attempt to make the evaluation more objective would not be preferable, according to Wallenberg (2000a). Fixed, concrete, and expertly formulated criteria would avoid subjectivity but can result in pay not being connected to either production, the workplace, or the supervisor. It is therefore better to link pay-rate evaluation to these unique qualifications and conditions and a competent supervisor's ability to observe every one of her employees (Wallenberg, 2000a).

The changes affecting the workplace, such as the possibility of mobile teleworking, can, however, bring on complications that make the evaluation of employees more difficult. Because of this it has been claimed that more sources, besides merely the closest supervisor, should be made use of when evaluating

performance (Hedge & Borman, 1995). Wallenberg's (2000a, 2000b) studies show that people are, in general, agreeable to performance-based pay, so it is, rather, more a question of how and by whom performance will be evaluated.

Most studies and theories on wage determination and work performance assume that management is the dominating actor. However, this is not necessarily the case in Sweden. The Swedish unions have historically played an important role in this process and, even if their influence has declined, they still have a strong position (le Grand, 1996).

In economic literature, the focus has primarily been on the quantitative aspects of work performance when examining the compensation system's impact on work performance and productivity. But, other considerations can prevail, in which an employer uses the pay rate as a means of controlling employee behavior; this can involve seeking to reduce absenteeism and turnover among employees, encouraging employees to take initiative in their work, encouraging employees to learn new things, as well as, if need be, having employees exchange work duties (le Grand, 1996).

The relationship between an individual's work effort, the measured results, and his or her perceived compensation is, however, a complicated one. Sörensen (1994) has done an investigation of this causal connection. How much an employee performs or accomplishes is not only a result of her effort, accuracy, and competence, but is also connected to a number of factors that are beyond the employee's control, such as one's natural talent for the work in question, how much effort coworkers put into group work, and the conduct of customers and subcontractors. It is, therefore, difficult to distinguish what portion of an employee's total work performance is a product of her own behavior. And, if this is the case, pay cannot be connected to this behavior either.

To determine the result of an employee's work effort after the fact can be a difficult task for an employer. In addition, it is possible that what a superior considers to be a reward may not in the least be received as such by an employee. This shows that the seemingly simple link between work effort and reward, according to economic theory, is more complex if we take into account certain psychological and sociological theories, such as expectancy theory and other theories on justice (le Grand, 1996).

le Grand (1996) believes that the successful development of a fruitful incentive-based pay system for working life today essentially requires that the criteria used in determining pay be both readily understood and perceived as just by the employees. Unless this legitimization and clarity is evident in the criteria establishing salary level, the desired increases in work effort and motivation will not occur.

Decision Latitude in Modern Working life

The Demand-Control Model

In the past, it was mainly the physical hazards that both research and public discussion focused upon, while today it is the psychosocial risk factors in the working environment that, above all are, the center of attention (e.g., Westerlund et al., 2000). One of the most frequently used models for psychosocial working conditions and health, in Swedish research, is the Demand-Control Model (Karasek, 1979; Karasek & Theorell, 1990). This model brings together the two dominant concentrations of research in this area. One part that is integrated is the qualification perspective the other part is the stress perspective. Hence, the model captures the demands that are placed on people in their work situation as well as how they react to these demands (Karlsson & Eriksson, 2000).

The original model contained two components: psychological demands and decision latitude (Karasek, 1979). The latter is more closely defined as opportunity to develop and use skills and authority over decisions. The psychological demands of work are usually divided into qualitative and quantitative demands. Quantitative work demands have to do with the amount of work to be done, deadlines, and the like. Qualitative demands, on the other hand are, of a more psychological nature, and deal with, for example, concentration, alertness, or role conflicts at work (Jeding et al., 1999).

The original Demand-Decision Latitude hypothesis (Karasek, 1979) was reformulated in 1990 by Karasek and Theorell as they equated decision latitude and control. One reason for this is that it was assumed that control reduced the negative effects of stressors, such as work-related demands, by giving individuals the opportunity to decide for themselves when they want to do what. This then gives individuals the chance to tackle the most demanding tasks when they feel best prepared (Karasek & Theorell, 1990).

Interaction of high and low levels of decision latitude and psychological demands generates a two by two table with four different psychosocial work characteristics: high strain jobs (high demands and low control), active jobs (high demands and high control), low strain jobs (low demands and high control) and passive jobs (low demands and low control). Karasek's (1979) hypothesis is based on the assumption that job demands are not destructive per se, but are when they coincide with a low level of control i.e. high-strain jobs.

Following the Demand-Control Model, a favorable work situation comes about when the employees have high demands as well as control over their work i.e. active jobs. In this type of work situation, employees can face their high demands by exerting control. This combination seems stimulating for the

employees since they are allowed the opportunity to apply their skills and develop themselves in a work situation.

To have equally high demands without having the negotiating latitude that control provides i.e. high-strain jobs, is the worst conceivable situation, according to the model. The fact that employees do not have a chance to meet their demands causes them to become stressed in their work situations. Work of this type falls under the category of high-strain jobs.

Employees who have few demands placed on them along with a low level of control become passive both at work and outside of work. This is thus known as the passive jobs. Similarly, people with active jobs have more active leisure time. Karasek and Theorell (1990) discuss whether a passive job is the worst conceivable work situation. In the long-term, those employed in passive jobs run the risk of developing what has been called learned helplessness (Seligman, 1976).

In the short-term, it is however the high-strain jobs, with its high demands and low control that is the worst. And lastly, there are work situations characterized by low demand and high control, which marks what is known as the low-strain jobs, described by Karasek and Theorell (1990) as a “low-stress utopia”. This model is rooted in the idea that those with active jobs as well as those in low-strain work situations feel the best of all.

Along with demand and control, social support has also drawn the attention of researchers- as a potentially mitigating factor in the case of high demand and low control (Johnson, 1986; Johnson & Hall, 1988; Karasek & Theorell, 1990). Work-based social support as a concept includes the type of support people receive from others at the workplace. It involves, in other words, a beneficial social exchange. Social support is separated into instrumental and socio-emotional support. Instrumental support can be, for example, when one receives help with unfinished work, while socio-emotional support can involve an interaction in which somebody listens to another person's problems. A distinction is usually made between coworker support and support from a superior (Karasek & Theorell, 1990). Social support outside of work, such as support from family or friends, is usually not included in the model.

Social support can affect well-being in different ways. Social support can, for example, act as a buffer and thereby weaken the connection between psychological stressors at work and its effects on health. Social support can also lead to individuals turning to, what is known as, problem-focused or action-oriented coping patterns (Callan, 1993; Karasek & Theorell, 1990). When social support is added to the model, the model is expanded to include eight types of work– the four original either in combination with presence or absence of support.

The concept of control is complex and has been defined by researchers in different ways. What all of these definitions have in common, however, is the notion that control is about influence and the employees' chances to have an effect on their work situation (Jeding et al., 1999). Jeding et al. (1999) bring to our attention that the concept of control does not have the same meaning in the research world as it does in everyday life. Aronsson (1989) distinguishes between control *within* a situation (horizontal control or control within an agenda) and control *over* a situation (vertical control or agenda control). Control over a situation involves being able to modify the social rules in a given situation. Control in a situation involves rather the ability to master the rules of a given situation.

Aronsson (1989) summarizes the various types of response measures the Swedish field research on work-related control have studied. These are physiological, psychological and behavioral responses as well as health disorders and perceived symptoms. Aronsson (1989) defines work-related control as "the individual's disposition of resources- organizational, social and personal by which he/she can control his occupational conditions" (p. 76). People strive after having a relationship with their surroundings that is characterized by a balance between external demands and their own talents and needs. This relation is regulated with the help of control.

Research on stress theory is thus founded on the notion that stress occurs when an individual feels that the demands from their environment exceed their capacity to handle the situation. Control, in this case, serves as a means for the individual to create a balance between the environment's demands and the individual's own talents and needs. Research on stress theory also holds to the idea that both quantitative and qualitative overload, but also to light of a load, are stressors that produce stress reactions in individuals. The relationship between control and stress is nonetheless a complex one since, to give one reason, an individual's interpretation of a situation along with her response (stress) is context dependent (Aronsson, 1990). The author calls for an integration of the individual and the collective, or, in other words, the psychological and the social, and a discussion over their interplay.

Aronsson (1987a) points out that, in real work situations, the boundary between control and lack of control is not as clear as it is in laboratory studies. In real work situations, it is the degree of control or influence that is more suitable for discussion. Jeding et al. (1999) subdivide situational control, or what Aronsson (1987a) refers to as vertical control, into three parts. The first of these parts is task control, which refers to the degree of influence one has over both how and when work tasks are carried out. The second part concerns the opportunity a person has to affect change and is denoted participation in decision making. This includes, for example, influence over working hours, involvement

in working towards change, and participation in the framing of operational and personal objectives. To be given the opportunity to use one's skills is the final part of Jeding et al. (1999) model of situational control and this is called skill utilization or control. Skill utilization deals with such aspects as: having the opportunity to learn new things at work, being able to exercise creativity or engage in problem solving, and avoiding generally monotonous work routines. So, what this primarily concerns is whether employees receive the opportunity to utilize their skills and potential, and, moreover, if they get the chance to develop these in their work.

Criticisms of the Demand-Control Model

Despite the positive response the Demand-Control Model has received in the research world, it has not gone without its critics. The postulated moderating effect of control has not received consistent support (Spector, 1998). Spector (1998) points out deficiencies in the literature on job stress when it comes to describing the underlying mechanisms through which control affects people. He also notices these problems that, according to him, are the reason why the hypothesized interaction effect of the Demand-Control Model has so seldom been confirmed in empirical studies. Since demand and control is often measured through self-reports, the mitigating effect control is expected to have on demands already lies in the individual's experience of the demand. Thus, objective demands are not measured and when subjective demands are assessed by the respondents' self-reports, their experience of control is already accounted for.

Wall, Jackson, Mullarkey and Parker (1996) discuss the contradictory results acquired as support for the demand-control model. According to the authors' investigation, the sporadic empirical support for the model is dependent on how demand and control have been operationalized. The redefinition that was done by Karasek and Theorell (1990) has not had a sufficient impact on empirical research (Wall et al., 1996). The authors point out however that the studies which found an interaction effect of demand and control and the accompanying effects on psychological strain have used operationalizations suited to the redefined hypothesis; they measured control instead of decision latitude. Wall et al. (1996) test for the interaction effect using both this new formulation of the hypothesis and also through measurement of demand and decision latitude. Their study also provides support for an interaction effect occurring in the former case, where control was measured rather than decision latitude, but not in the latter, where decision latitude was measured.

There is also an ongoing discussion over whether the definition for psychological demand is too imprecise since it involves both positive and negative aspects of psychological demands (Jeding et al., 1999).

Furthermore, questions have been raised over whether the job strain model can be applied to service professions. Söderfeldt, Söderfeldt, Muntaner, O'Campo, Warg and Ohlsson (1996) contend that the special work environment in human service organizations should lead to modifications of the Demand-Control Model. Söderfeldt et al. (1996) criticize the model for not taking emotional demands into account. Working with people is more complicated than working with symbols or things, which implies that the relationship between demands and control might be different in these occupations. The Demand-Control Model has been criticized for being too simplified for reasons including that it does not take into account the social aspects of work, such as the relationships between people (Söderfeldt et al., 1996). Westerlund et al. (2000) discuss the problems with the Demand-Control Model being principally developed for more traditional work organizations.

A model in which control is replaced by high service has been proposed by Marshall, Barnett and Sayer (1997). This demand-service model was tested by its authors and also received support since it predicted psychological distress among employees in service occupations.

There has also been discussion over whether the job strain model is more appropriate for men (Ahlberg-Hultén, 1999). Empirical support for the model, with respect to women, has nevertheless been on the rise since the mid 1980s (e.g., Frankenhaeuser, Lundberg & Chesney 1991). Women have, on average, a lower level of decision latitude and active occupations are to a lesser degree found in jobs held mostly by women. Women dominated professions instead have a higher proportion of high-strain jobs (Ahlberg-Hultén, 1999).

The Empirical Results

The Demand-Control model has been used tested in a multitude of studies (e.g. Söderfeldt, Söderfeldt, Ohlsson, Theorell & Jones, 2000; Söderfeldt, Söderfeldt, Jones, O'Campo, Muntaner, Ohlsson & Warg, 1997; Johnsson, Hall & Theorell, 1989; Wall et al., 1996). The model has been best supported by epidemiological studies, which are studies of larger groups representing society's professions in general. These studies indicate that those persons who have high-strain jobs, characterized by high demands and low control, are depressed to a greater extent, more exhausted, take more medicine, and are more likely to have cardiovascular disease. Those with active jobs feel the best, closely followed by those with relaxed jobs. Employees who receive social support in their work situation are

better off than those who do not receive it in any work situation since social support improves the situation for everybody regardless of which of the four work situations they may find themselves in (Jeding et al., 1999).

Ahlberg-Hultén (1999) did not, despite the theoretical assumption of the study, find support for the idea that the Demand-Control Model was more relevant for men than for women. Her study was also unable to find support for the notion that the model would be less relevant for healthcare personnel. Those who worked with people experienced a more demanding work situation than those who worked with symbols or things. Ahlberg-Hultén (1999) did a qualitative investigation of the subjective meaning of four questionnaire items from the JCQ scale (Job Content Questionnaire, Karasek, 1985). The results led Ahlberg-Hultén (1999) to believe that control is often over-reported in questionnaires.

Allvin et al. (1998) argue that the respondents in their study initially appeared to be in a work situation characterized by high demands and decision latitude, which, according to Karasek's (1979) demand-control model, is a positive situation. Most of the respondents did, however, experience a constant pressure from their personal expectations, which were influenced by the expectations on them from their surrounding environment. This works as a limitation on their influence over the work situation.

Härenstam, Rydbeck, Johansson, Karlquist and Wiklund (2000) call for research that combines the organizational and individual levels. They consider the lack of this type of research to be a deficiency since many researchers presume that there is a connection between organizational context, working conditions, and the health of employees (e.g. Karasek & Theorell, 1990; Söderfeldt et al., 1997). The ultimate model would include the societal level, for example, as represented by data on unemployment. According to Härenstam et al. (2000), there are only a few studies in Sweden that have combined the organizational and individual levels.

Because of this, Härenstam et al. (2000) investigated how the consequences of organizational changes during the late 1990s were experienced by the employees. The study was conducted on a stratified sample within the framework of the MOA project (72 work sites, both public and private, were included in the study). The authors investigated both the organizations that carried out changes and those that did not. They were interested in how those that had implemented change directed and organized work for the purpose of increasing productivity and effectiveness. The study shows that organizational changes can exert a strong influence, both positive and negative, on the health of individuals, through their perceptions of these changes. It is for this reason that organizational change is an important aspect in the study of work and health. The most significant changes in working conditions were that employees experienced an increase in their

workload, a decrease in pay in relationship to effort, increased job insecurity, and a harder time combining work and family. The employees in the study did however feel that the changes gave them more control and development opportunities.

With the help of cluster analysis, the workplaces were grouped according to type of change, alongside the group consisting of unchanged workplaces. Of the employees who worked in organizations in the cluster labeled lean production, almost 80 percent experienced an increase in workload, and nearly 40 percent felt an increase in their level of control. The authors have also investigated how the various clusters of change related to the dimensions of the job-strain model. It became apparent that there was a significant connection between the various types of changes and demand/control, decision latitude, as well as skill discretion. Those workplaces that had been categorized as stable, namely where large-scale changes had not taken place, had the best conditions. Lean production worksites showed themselves to be the worst for women, while the result monitoring work sites were the worst for men. Based on the study's results the authors have presented a hypothesis suggesting that organizational changes reinforce both negative and positive psychosocial working conditions. This can be seen in the fact that those who already had low control before the organizational changes took place receive less control, while those who have a high degree of control receive an even greater amount of influence.

Swedish research on work-related control and influence has had an impact on the Swedish Occupational Environmental Act (Aronsson, 1989). In the first paragraph of this law's second chapter it says that "efforts shall be made to arrange work so that the employee himself can influence his occupational situation" (p. 76).

Also notable is the law concerning right of participation in decision-making (the Co-determination Act, MBL), instituted in the late 1970's. The MBL concerns the relationship between employee and employer. The law on participation in decision-making in working life has a wide range of applications and is in force over the entire labor market; the operations of both public and private employers are covered by the MBL. Matters regulated by the MBL include terms of employment, the division and management of work, working conditions, and issues of how a company is run and developed in such areas as expansion, downsizing, investing, and financing. The MBL also includes an employee's right to information about conditions, which are important for up and coming decisions, as well as the right to negotiation before the employer makes the decision.

Health consequences

When we speak of how the psychosocial work environment affects our physical health, the concept of stress becomes central (Johansson, 1991). Stress is defined as being an interaction between the individual and the situation, that is, the individual's experience of the demands in her environment and between mental and physical development, i.e. the individual's health, well-being, and ability to perform (Lazarus, 1971). The stress process thus involves social, psychological, and biological (known as the biopsychosocial approach) elements.

In order to understand this awkward fit between humans and their environment today, we must take developmental biology into consideration. Humans, as a species, developed and adapted extremely slowly while our environment changed at an increasingly faster pace. When we experience stress over deadlines, conflicts, terminations or other psychosocial encumbrances at work, we display the same physical reactions to stress our ancestors did. These stress reactions have been necessary for our survival for thousands of years. Today, however, this reaction pattern is more often than not a disadvantage to us since the release of stress hormones prepare the body for physical exertion. Stress reactions therefore do not help us, but burden us all the more. Stress hormones do however facilitate physical and mental adaptation in acute situations since we become more alert and prepared to act. In the short-term, this does not constitute a threat to health or well-being. In the long run, however, these reactions can have damaging effects since prolonged increases of the rate of adrenalin and noradrenalin lead to changes of the blood vessels, which can lead to cardiovascular disease (Frankenhaeuser, 1993; Levi, 1997).

Stress is, however, not always negative. Frankenhaeuser (1993) describes a situation where demands in the environment are taken in as challenges. This is the case when individuals sense they have sufficient enough resources in order to cope with the environment's demands, which gives rise to a feeling of control and job satisfaction. This kind of stress is not as damaging to our health as negative stress. This is because the amount of secreted cortisol is lesser than it is with negative stress and it is the cortisol that increase the blood vessels sensitivity to adrenaline and noradrenaline which can lead to cardiovascular disease (Frankenhaeuser, 1993). It can be assumed that positive stress is to be found in work that is characterized by high demand and high control. Stress can be counteracted, while retaining demand, with the right amount of decision latitude or control. People who engage in so-called high-strain jobs, according to the

demand-control model's introduction, run a greater risk of physical and mental illness (Karasek & Theorell, 1990).

We usually think of high pace when we talk about stress, but monotonous work can be just as taxing on the individual. It is when we are adequately stimulated that we perform most effectively. What constitutes adequate stimulation can however vary considerably from person to person. According to Frankenhaeuser (1993), many people are outside the optimal zone since they are either understimulated or overstimulated. This results in them never getting the opportunity to develop to their full potential, which is a waste of human ability.

Coping is a central concept in stress theory since stress is experienced when there is a mismatch between the perceived demand and the person's perception of his capability to meet that demand (Cox, 1978). Thus, it is the cognitive appraisal of the situation and the ability to cope that determines whether stress is experienced, and not the objective situation or the objective ability (Ahlberg-Hultén, 1999). Another factor influencing whether stress is experienced or not is the perceived cost of not coping. If a person feels that the demands may exceed the resources and the consequences of not coping are important, there is a potential for stress (Lazarus & Folkman, 1984).

The biological reaction to stress, as mentioned previously, is the activation of different biological systems that increase the capacity to perform and adjust to new situations. When these systems are repeatedly activated and there is no time for recovery or rest, there is a risk for stress-related ill-health. Exhaustion of different systems and burnout might be the result of a consistently high level of stress hormones, and the inability to rest (Allvin et al., 1998). Prolonged stress does not necessarily bring on mental complaints, such as burn-out, but can lead to psychosomatic illnesses including neck, back, and shoulder pains, difficulties with digestion, and heart attacks (RFV 2002:4).

An official report issued by the government of Sweden discusses the high and still increasing numbers of absences due to illness from Swedish workplaces (SOU 2002:5). Throughout the country, there has been a general increase in sick-leaves due to mental complaints (RFV 2002:4). According to the National Social Insurance Boards study (RFV 2002:4), there is believed to be a connection between the rise in long-term sick-leaves and the negative changes in the psychosocial work environment. This supposed connection is based on the fact that the rise in long-term sick-leaves has primarily been due to depression, anxiety, and stress reactions.

The increase in the rate of sick-leave is not evenly distributed over sectors, type of work, or companies. Sick-absences seem, rather, to be closely related to the workplace. Hardest hit are the workplaces within the areas of education, health and public care. It is important to observe that these are sectors dominated by women. The conjunction of a diminishing of resources, resulting from cut-

backs, and a consistently heavy work load leads to this increase in sick-absences (SOU 2002:5). According to a study conducted by Göransson, Aronsson and Melin (2002), two out of every three people on long-term sick-leave had pointed out to their employers that there were problems with their work environment that they feared would negatively affect their health. This study also points out that the best way to rejoin the workforce is to switch workplace or profession. This was especially important for those who had been on sick-leave for mental complaints.

According to Göransson et al. (2002) small workplaces have a lesser occurrence of sick-leaves than larger companies; thus, sick-absences increase the larger the workplace is. The authors base this on information gathered from Statistics Swedens quarterly report. Göransson et al. (2002) contend this is not a case of the smaller workplaces recruiting more individuals less prone to illness, but rather that the employees at the smaller workplaces feel they have more control and significance. These are factors that have been shown to be connected with lower rates of sick-absence. Similarly, lack of control leads to higher rates of sick-absence, which does not imply that all instances of sick-leave is due to the workplace. As far as gender differences are concerned, women in the study had a higher rate of sick-absence than men regarding both small and large companies.

All individuals have different qualifications and we are also affected by social problems outside the workplace. Despite this, the SOU 2002:5 report shows that the variations in rates of sick-absence, in large part, are due to factors at the workplace, such as its organization and the division of resources. The focus of the report is thus on interventions in the workplace. However, it is pointed out that taking measures to increase the responsibility of the individual is an important task in the long run.

The workplace conditions affect the sick-leave rates, partly as preventive measures, and partly with respect to shortening the length of the sick absence. The SOU 2002:5 investigation shows that the extent of control and decision latitude the employees feel they have has an impact on sick-leave. One particular study within this official investigation framework identified “health factors”, that is, factors that important for a positive development of health. It is of importance to, among other things, increase the employees’ influence on the demands placed on them, and control over the organization of work (SOU, 2002:5).

A report from the National Social Insurance Board (RFV 2002:4) shows distinguishing environmental and individual characteristics of those groups of individuals who are on long-term sick-leave due to psychological symptoms and burnout. The results of the study show that sick-leave due to psychological complaints is significantly more common in those professions which the study describes as entailing demands on a theoretical education. Among the blue-collar

professions sick-leave due to physical symptoms predominate. The study points out that sick-leave due to psychological complaints or burnout is more common in those professions characterized by contact between people and career advancement. Examples of these professions in the study are engineers, accountants, computer specialists, different types of managers, administrators, etc.

The study (RFV 2002:4) shows that those older than 45 years do not run as great a risk of going on sick-leave due to a psychological diagnosis. It is chiefly the younger that are at risk. Among men the risk is the greatest between the ages of 25 and 44 and among women between the ages of 35 and 44. In the report (RFV 2002:4) it is discussed whether this can be due to the fact that women in this age group are likely to experience work-family conflict. Similarly, Lundberg (2000) has found that women experience higher levels of role conflict as compared to men, when it comes to switching between work and family. The report from the National Social Insurance Board (RFV 2002:4) further shows that men who at an earlier point in time have been on long-term sick-leave run a greater risk in the future of going on sick-leave with a psychological diagnosis. Those on sick-leave with a burnout diagnosis are in most cases individuals who have not been on sick-leave at an earlier point in time (RFV 2002:4).

Gender differences in health

It is notable that the Swedish labor market has a large proportion of women in the workforce, which is close to 50% (Esseveld, SOU, 1997:135). But, equality in the Swedish labor market should not be presumed. The gender distribution is skewed, with a majority of women working in the public sector and in other types of service industry (Lundberg & Gonäs, 1998; Westberg, 1998). The gender segregation in the labor market is problematic since the occupations dominated by women have a lower status, are less paid, have less development and career opportunities, and offers less decision latitude compared to the male dominated jobs (Alexanderson & Östlin, 2000). The fact that women and men are to a great extent working in different segments of the labor market becomes problematic, since these segments differ from each other with respect to social norms for female participation in decision making, opportunities to work part-time, as well as the system for determining pay rates (Lundberg & Gonäs, 1998).

Compared to other European countries Sweden has a wide representation of women in politics as well as in the union ranks. Sweden also has small quantitative differences between the sexes with respect to the level of

employment and salary, as well as unemployment. This does not mean however, that women in reality are equal to men in the workplace. The system of gender based power in the workplace has not changed (Gonäs, 1999).

As late as the 1980s the health of women and their position in the labor market was brought to the attention of Scandinavian research (Gonäs & Lehto, 1999). Despite this, it was not until the 1990s that research in a systematic manner started to investigate the consequences of the gender segregation on health, and up until today there are only a few studies conducted on this topic. All of these studies, however, have identified an association between the gender segregation in the labor market and ill-health (Alexanderson, 2001).

Women have always had less influence and control over their own work as compared to men (Statistics Sweden, 1997). Despite the fact that younger women today have a slightly higher education than men, women still hold the less qualified jobs (Lundberg & Gonäs, 1998). Typical male dominated jobs are more often than jobs where women predominate so-called active jobs, characterized by high demands combined with high influence or control. High demands and low influence or control are characteristics of the jobs where women typically predominate. Ahlberg-Hultén (1999) further argues that there is a risk that this difference will be enhanced when we consider the development of society as well as of the labor market.

Through what mechanisms does the gender segregation on the labor market affect health? One possible explanation that is discussed by Ellen Hall in her doctoral thesis (1990) is the fact that the perception of influence is correlated with numerical gender segregation. The highest levels of influence are enjoyed by both women and men in professions where there is a high degree of gender integration. The women, however, have lower levels of influence than the men in all groups. The degree of influence and power, i.e., hierarchical distribution between the sexes, has been labeled vertical segregation, as opposed to horizontal segregation which involves the number of women and men in an organization and the degree of segregation in occupations of positions between the sexes (Wahl, 1992). The horizontal segregation thus refers to the fact that women and men have different occupations, and therefore different work tasks as well. It has also been observed that women and men perform different tasks, even when working together in the same workplace and with the same job description (Fransson-Hall, Byström & Kilbom, 1995). The vertical segregation has the implication that women are paid less and have fewer opportunities for advancement (SOU 1998:6).

The authors of the National Social Insurance Boards report (RFV 2002:4) discuss the significance of gender for suffering from psychological symptoms or burnout. The study shows that gender on its own has no influence on the risk of being affected. Instead, the fact that women to a greater extent than men are on

sick-leave due to psychological complaints and burnout is explained by referring to social and work related conditions that differ between women and men.

The results from the study conducted by Lundberg and Gonäs (1998) show that the proportion of high-strain jobs on the Swedish labor market has increased from including 13 percent to encompassing 17 percent of the jobs. This increase is chiefly found among women, where the increase of high-strain jobs was from 15 percent to 21 percent. This implies yet another negative trend for women.

Szulkin and Thålin (1994) have also investigated the differences in the occurrence of high-strain job between men and women. They show a negative trend for occupations where women predominate, with the implication that women to a greater extent than men are exposed to high-strain jobs. This result is attributed to the increase of psychological demands in typical female jobs, while there has been no corresponding change in decision latitude in these jobs. Fritzell and Lundberg (1994) found that it mainly is among female dominated jobs on the intermediate or lower levels in the public sector where we find the increase of psychological demands which is unaccompanied by an increase of autonomy.

The relationship between job strain and mental health has been studied to a lesser degree than the relationship between job strain and cardiovascular disease. Most studies have been cross-sectional (Ahlberg-Hultén, 1999). The report from the National Social Insurance Board (RFV 2002:4) expresses a need for longitudinal research in order to increase the understanding of the underlying mechanisms that precede long-term sick-leave due to psychological symptoms and burnout.

Summary and Conclusions

The objective of the present study was to summarize Swedish research conducted during the last few years on topics such as performance, decision latitude, demand and control, as well as their relationship with health and well-being. In order to reflect modern working life the study chiefly dealt with research published in 1990s and later, despite the fact that some of the theoretical assumptions used in the studies originate from theories developed earlier. Additional criteria for inclusion in this study were that the empirical data be collected on the Swedish labor market and as much as possible, treat occupations within the so-called new economy.

It is apparent that a number of researchers argue for, and are in agreement that working life has, to a large degree, come to incorporate mental rather than physical activities. This has also brought about a change in focus; the earlier focus on the concrete products or merchandise that was a result of work efforts,

has shifted to a focus on more abstractly defined services (e.g., Aronsson, 1987; Johansson, 1987). This change in the nature and focus of working life entails not only that new criteria for performance be developed, i.e., what is good performance, but also the development of new criteria for how performance should be assessed. At the same time, we have seen an increased use of individual performance-based compensation systems, both in the private, but perhaps even more so in the public sector (Carlsson & Wallenberg, 1999; le Grand, 1996). When it comes to attitudes towards individual results or performance based pay, Wallenberg (2000a, 2000b) has shown in a number of studies (in the public administration sector) that most of those asked have a positive attitude towards this change from collective pay systems to more individual. Most of those asked also seem to be in favor of a closer connection between pay and performance at the workplace. However, how this performance should be assessed, and by whom, is seen as a problem (Carlsson & Wallenberg, 1999; Wallenberg, 2000a, 2000b).

We have found few Swedish studies that discuss or investigate the problems with defining performance in the modern working life. Research agrees that the modern working presents us with a new set of challenges in determining what shall be assessed and how (e.g., le Grand, 1996). However, the difficulties seem to lie in defining and developing models for how this should be done. One attempt at this is the model developed by Torbiörn et al. (1996) in which the authors describe five psychological prerequisites combined with five objective correlates. Taken together, these factors are critical for the individual's behavior and performance in the organization. However, in those empirical studies where the model has been included, self-reported performance has been utilized as a criteria for actual performance, so the problem of assessing the individual's performance, especially in those cases where this assessment is used as a basis for pay rates, remains unsolved. Given that individuals' performance to a growing degree is used as a basis for their compensation rates, this problem should be the focus of future research efforts.

A second problem identified by studies conducted by Wallenberg (2000a, 2000b) and Carlsson and Wallenberg (1999) concerns who is suited to assess the performance. Should it be the closest supervisor, department manager, workmates, etc? The future role of the union in this process also seems uncertain. One thing seems settled, however: if the future labor market is, to a great extent, going to be focused on the production of services combined with individual performance-based pay, we will need theoretical development as well as empirically based results on the definition and criteria of performance, and concerning who should be assessing this performance. Some researchers even go so far as to claim that the increased individualization of work will lead to a

fragmentation of society, and in the long run be the end of the collective society based on consensus (Allvin, 1997).

An area, which has generated a lot of research in Sweden, deals with the individual's decision latitude, also described as the discrepancy between the demands and the level of control that the individual experiences in her work. One of the most widely used models in this area of research is the Demand-Control Model (Karasek, 1979; Karasek & Theorell, 1990). Although this model has endured some criticism, it still has to be regarded as empirically validated and relevant to modern working life. One problem, however, concerns the definition of demand. Traditionally, the model assumes that the individual is conscious of the demands placed on her, and thus can more or less cope with these demands according to her degree of control over the situation and/or by using various types of social support. Several researchers, however, argue that one of the distinctive features of modern working life is that the demands are blurred and unclear (Allvin et al., 1998). This would mean that the individual cannot know for sure what demands are placed on her, what she is expected to live up to, or when the work is done. Such a situation is thought to constitute a stressor and is destructive to the well-being of the individual. This problem has been discussed in research on telework and other types of work that has blurred boundaries between work and leisure time (e.g., Allvin et al., 1998, 1999). Combined with individual performance-based pay this means that the level of pay is a confirmation of how well the individual has succeeded in interpreting the demands placed on her. This is expected to put the individual in a very exposed position in the organization, especially in regard to stress, and, in the long run, her health and well-being.

The studies which thus far have investigated decision latitude and demands in the modern working life seem to have come to the conclusion that working life is now, to a great extent, characterized by uncertainty, unclear work demands in combination with increased autonomy and self determination (Allvin et al., 1998; Aronsson & Svensson, 1997; Sverke & Hellgren, 2001). Those individuals in jobs characterized by high autonomy and self determination run the risk, however, of experiencing stress as a result of the demands they place on themselves, and those demands the surroundings place on them. Thus, the increased autonomy in this case works as a stressor rather than something that helps the individual gain control over her work situation. Moreover, if the individual is unsure of what demands, goals and expectations are associated with the job, it is reasonable to ask what use she will have of increased autonomy, and whether she has gained any increased control or autonomy at all. Westerlund et al. (2000) argue that the new working life contains an element of "pseudo-control", rather than actual control, and that this leads to unclear demands and confusion over work goals, which can lead to health complaints. The lack of set

external borders for work demands that the employees plan their own work hours. Hence they create a feeling of control in a situation that hardly is controllable in any other sense.

Allvin et al. (1998, 1999) also argue that independence and flexibility at work can lead to increases of mental tension and in the long run constitute a health hazard. The authors believe that someone employed in a flexible work situation, where she defines and develops the work herself, may feel uncertainty over both what to do and how to do it. This may lead to the type of situation that gives rise to anxiety and worry in the individual. It can also be assumed that individuals who work at a distance from the actual work site have fewer opportunities to benefit from the social support provided by managers and work mates, and because of this, are placed in a more exposed situation. This especially becomes the case if the work involves unclear demands and work tasks. If the salary is more clearly connected to performance there may be a more competitive way of thinking, which leads to a decrease in the social support provided by colleagues, if they are competing for pieces of the same money pool. In the long run this may lead to the individual looking for social support outside of work to a greater degree, for instance among family and friends. This would mean that work not only affects the individual's general life situation, but that it affects the individual's surroundings as well.

In this context we should devote some attention to the balance between work and leisure time. Today there are very few Swedish studies that investigate the consequences of modern working life on the employees' time with family and leisure activities. If the balance between the demands of work and the individual's family situation is, to a greater degree, negatively affected and leads to stress related symptoms, it is to be regarded as a societal development with very negative implications (RFV 2002:4). More empirical research is needed, however, in order to establish what consequences the nature of the new work has for the individual's life outside of work, as well as what effects these can have for her health and well-being.

After reviewing the research on the modern working life it is easy to get the impression that everything is new and flexible. However, Karlsson and Eriksson (2000) have conducted a critical empirical review of the notion of the new working life as something totally separate from the old. They test what they call the "rhetorical figure" over the transition from the old, bad, and inflexible to the new, good, and flexible working life. The results of their study show that there is no homogeneous development for working life in general, that the consequences of the development differ a lot between individuals, and that the consequences differ between all parties involved. The authors found that only four percent of the workplaces in Sweden are flexible. The study also compared the flexible and inflexible workplaces in order to study differences in control, support, job

satisfaction, and the general working environment, among other things. There were no differences found, with respect to these factors, between flexible and inflexible workplaces. There were differences, however, in the possibilities for employees to use their knowledge and skills in their work, and getting their voices heard in the organization. The flexible companies were better at these things.

One problem in this context may lie in the definitions of flexible workplaces and flexible work. Karlsson and Eriksson (2000) list a number of criteria that have to be present in order for a workplace to be defined as flexible. It is possible that some workplaces are flexible when it comes to some of these criteria but not others. Allvin et al. (1999) established in their study that no one worked without boundaries with regard to all those criteria that were postulated to indicate flexible work. Thus, there seems to exist a need for developing both criteria and norms for what should be regarded as flexible work, as well as to what extent these criteria should be filled.

Another distinguishing feature of the new working life is that more individuals hold temporary or time-limited contracts (Isaksson & Bellaagh, 1999a, 1999b; Sverke et al., 2000). The effects of these new forms of employment on health and well-being are today unclear. Aronsson et al. (2000) state, however, that employees with temporary contracts are surrounded by a more complex reality than are those with permanent contracts. They also conclude that insecure employment and fear of unemployment may stop individuals from putting forward criticism against job design or work environment since they worry that it will affect their future employment in the organization. Levi (1997) discusses this problem of “locking in” as well. This concept implies that employees choose to remain under unfavorable working conditions, since they are afraid of ending up in a worse position during possible reorganizations or downsizings (see also Aronsson & Göransson, 1997b).

The fear of ending up in a bad light can also manifest itself in the trend of employees working overtime (Aronsson & Göransson, 1997a). Aronsson (1999) argues that increased overtime work is a consequence of greater financial uncertainty, lower pay rates, and concerns over how the social insurance system will work in the future. Additional explanations for the increased overtime work concern factors such as the increased globalization, that the common currency in Europe may lead to further merges, company closings, and the moving of businesses between countries. This may lead to an increased uncertainty for the individual employee, which, in turn, may also lead to being trapped in a job. Several analysts have argued that individuals will be forced to prepare themselves for a switch in occupation and employer several times during their working life (Aronsson, 1999; Sverke & Hellgren, 2001).

Given the increased rate of sick-leaves and its connection to working life (RFV 2002:4; SOU 2002:5) it is vital to investigate how the new working life affects the individual and her health. Aronsson (1999) is of the opinion that the development of more differentiated labor market and labor force of today is an important societal event, which needs to be investigated in order to increase the understanding of the new working life, especially from a public health perspective. It also seems that more young people go on sick-leave today with work related problems and psychological complaints (RFV 2002:4).

Stress related problems and burnout are today regarded as a problem for the individual (RFV 2002:4). The report states that the individual naturally is responsible for her own health and well-being. However, measures need to be taken, in the workplace, and a change is needed in the general attitudes of both those in working life and in society as a whole, in order to change this negative trend. According to the report from the National Social Insurance Board (RFV 2002:4) burnout may be an indication of problems in lifestyle. It is possible that young people have not prioritized their time reasonably, nor made or allowed themselves necessary recovery time. This view, however, lays a considerable degree of responsibility on the individuals for their life situation and recovery. If the symptoms of burnout are expressions of a person's life situation as a whole, large demands are placed on the family and other social actors surrounding the individual. It is important in this context to investigate the effects and degree of influence working life has on leisure time. Employers, however, have a share in an important part of the responsibility when it comes to the well-being of the labor force, and it is not reasonable to put this responsibility completely in the hands of the individual. The official investigation (SOU 2002:5) also shows that a large proportion of the variance in sick-leave can be related to workplace conditions.

The reasoning above, regarding the responsibility of the individual for her own health and recovery, combined with the discussion regarding the increased changing of workplaces in the past and the future, leads to a discussion of the problems with how longitudinal research should be conducted in the future. Today, either departments, groups, or organizations are the focus of research. Perhaps a refocusing is necessary in order to study the “modern” worker. One of many alternatives is the so-called “lifestyle research”. This involves that the researcher studies an individual over time, rather than the work group or the organization. This includes studies of the individual and her whole life situation over time, and not solely the work related part. Thus, a problem for the longitudinal research today is that individuals who leave an organization become research “dropouts”, since researchers often study only a specific organization over time. Future research should therefore not only study individuals over time in their working life, but also study their whole life situation. According the

National Social Insurance Board's report (RFV 2002:4), burnout could be an expression of lifestyle problems. Perhaps those who are affected have not prioritized in a reasonable manner, nor created time for the important occasions of recovery. Härenstam, Westberg, Karlqvist, Leijon, Rydbeck, Waldenström, Wiklund, Nise och Jansson (2000) also emphasize the importance of studying leisure time activities and unpaid work in studies of the relation between working conditions and health. Despite this, this is seldom mentioned in these types of studies.

Another problem discussed in the report from the National Social Insurance Board (RFV 2002:4) is the rehabilitation of those on long-term sick-leave and those who are burnt out. Bringing these individuals back into the same working environment, with the same employer, is not a constructive solution to the problem if the psychosocial environment has not changed. The work has to be adapted to the individual and not the other way around. One problem is that in the long run there are not enough of the "good workplaces" around for everyone who needs to switch jobs. This implies that the psychosocial working conditions have to be improved on the labor market in general, and not just at a few of the individual workplaces.

Today, it seems that many organizations are so slimmed down in regard to personnel density that the demands and the work load for the staff leaves no room for either reflection or recovery to any greater extent. This of course has consequences on the working environment of the individual, and, in the long run, on her health as well. If these factors are combined with more or less arbitrary assessments of the individual's performance, which pay rates are based on, the stress on the individual from the organization is increased. The problem can become even more severe if the individual also has a difficulty defining the goals and the results of her work, or has a job that is difficult to delimit in space and time.

A few aspects stick out as particularly important following this review of the Swedish research. There are strikingly few studies that have a longitudinal design and study individuals over time. Longitudinal research is important when it comes to analyzing the consequences of working life for the individual, especially when attempting to trace effects of organizational or work changes. Also, very few studies utilize different types of methods, including both subjective and objective measurement of the dependent and the independent variables. This means that a large part of the research results are based on data collected at only one point in time and using only one method. We can also conclude that working life today is complex and integrated with the individual's life situation in that the knowledge of working conditions and their effect on the individual would benefit from research using a broader and interdisciplinary perspective.

Methodological challenges aside, there is a need for theory advances that integrate the different aspects associated with the modern working life. Aronsson (1999) states that there is no cohesive theory regarding modern working life. The author, however, provides examples of a number of psychologically oriented phenomena that could serve as building blocks for forming future theories (trust, psychological contracts, adaptation, etc). In order to fully understand and improve working life in the future it is likely that an integration of theories from several different scientific disciplines is necessary, combined with the utilization of a number of different research methods. The annual report of the National Institute of Occupational Health stated already in 1993/94 that future work environment will become the great challenge for researchers on working life (Aronsson & Sjögren, 1994). Considering the changes that have taken place in working life during the last ten years this statement seems to be very relevant today.

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