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Timo Anttila

Reduced Working Hours

Reshaping the Duration, Timing and Tempo of Work



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ABSTRACT

Anttila, Timo

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Finnish Summary

Diss.

This study examines experiments with so called six-plus-six model (six-hour shift), which were carried out in Finland after a deep economic recession in the mid 1990s. The model includes the idea of a simultaneous reduction in individual working hours and an increase in production or service hours. The experiments were implemented in industrial companies and in public health and social care organisations. Six-plus-six model influences on all three main elements of time in work organisations: the length of working time (duration), the placement of working time (timing) and the use of working time (tempo).

The main aim of this research is to show which are the conditions that explain the ability of organisations to agree and implement radical changes in working time and what forms of resistance to these changes can be identified? Another aim is to assess the sustainability of the six-plus-six model from an efficiency and social welfare perspective, both at the household and organisation level. The underlying question is how individuals adjust their personal and family life to the new working time system. The analysis is based on both quantitative (two kinds of questionnaire data) and qualitative interview data.

Experiments in the private sector were divided into two groups. In the offensive experiments, the firms tried to reorganise working time more efficiently in order to facilitate competitiveness. In the defensive experiments, the firms aimed to preserve employment relationships in a phase of low demand by shortening the working hours with the consent of employees, but also by slightly cutting the wages. Main motives of the municipal experiments were to improve the quality and availability of services and to invent new working patterns.

The experiment provided an interesting opportunity for analysing shorter working hours in Finnish full-time culture. Empirical test with six-plus-six hour model showed, that model is technically clever and serves indisputable benefits for organisations, but is socially insensitive. It neglects the social qualities of time.

Keywords: work, time, organisations, tempo, family, work sharing

Author's address

Timo Anttila
Samulinranta 8
40520 Jyväskylä
Finland

Supervisors

Docent Raija Julkunen
Department of Social Sciences and Philosophy
University of Jyväskylä

Docent Jouko Nätti
Department of Social Sciences and Philosophy
University of Jyväskylä

Reviewers

Professor Päivi Korvajärvi
Department of Women's Studies
University of Tampere

Docent Irja Kandolin
Department of Psychology
Finnish Institute of Occupational Health

Opponent

Docent Irja Kandolin
Department of Psychology
Finnish Institute of Occupational Health

PREFACE

It will soon be ten years since I began my career as a researcher in the Department of Social Policy at the University of Jyväskylä. Since then, I have worked in various work life research projects, led by Doctor Raija Julkunen and Doctor Jouko Nätti. It has been a great pleasure and honour for me to be able to participate in their projects. Shared projects and discussions with Hanna Liikanen, Paula Tyrväinen, Mia Väisänen and Ilkka Virmasalo have been a great help with my own study as well. Kaisu Väänänen worked for six years as our project secretary and her ability to carry out the everyday routines of project work is impressive. I want to express my gratitude to all of you.

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To my family – Kaija, Hilma, Aatu and Aapo – a piece of advice: Do not try this yourselves, at least not at home! However, thank you for being there for me.

Finally, I would like to express my gratitude to the Finnish Academy, Finnish Work Environment Fund, Ministry of Labour, EU-TSER and European Social Fund for financing our projects. In addition, I would like to thank the Emil Aaltonen Foundation for a personal scholarship.

I wish to dedicate my work to my mother Kaija Anttila, née Larsson. Thank you for your support over all these years.

Jyväskylä, January 2005

Timo Anttila

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1 SIX-PLUS-SIX -HOUR MODEL

This is a study on reduced working hours. The issue is not on the topical political agenda, but it is still relevant, as always. The topicality of this research topic seems to be closely connected to economic waves. In the early 1990s, Finland drifted to its deepest recession ever. The unemployment rate rose to 17% and good advice was badly needed. As in many times in history, working time reduction was regarded as a remedy for a work society without work. And as always, the question of working time reduction raised a lively debate.

The practical measures for working time reductions remained modest and the working time policy took a long step in another direction, towards deregulation and flexible solutions, as in many other western societies. However, some interesting experiments were launched in order to evaluate the effects of shorter working hours. This study deals with the outcomes of the experiments with 6-hour shifts, implemented in the industrial sector and in public services.

The debate awakened public interest in the so-called six-plus-six scheme. A Finnish professor in sociology, Paavo Seppänen, suggested more than 30 years ago (in 1967) that productive organisations should operate 12 hours per day (instead of the normal 8-hour shift), consisting of two day-time shifts that last 6 hours each. Underlying this proposal is the idea that such a working scheme promotes both effectiveness and human consideration (see Peltola, 1999). Seppänen's paper was an intellectual comment for the reorganisation of working times in a situation in which Finland was entering, along with the rest of Europe, a new norm of working time, namely a five-day working week. The paper skated over the employment questions and focused on the temporal order of industrial working time. It raised questions about the sensible reconciliation of existing infrastructure, capital investment on production and human labour. The proposal was practically utopian in the sense that it would have reshaped the solid work time institutions and time-space order of society. The underlying utopia was a two-shift society. Seppänen attached to his report the themes of time planning in urban regions. For example, he was concerned with the traffic problems of cities and argued that his model would equalise the traffic flows. Thus, the paper discussed questions that still remain a key

question of work society and working cities: how to find a creative balance between waged labour and other life spheres?

Seppänen was well aware of the utopian nature of his proposal and the power of institutionalised working time practices. He started the discussion with the following paragraph:

"Use of time is one of the core problems of all societies. The nature of a society is essentially determined by how the people in that society divide their time. Usually the time use structure of a society is so strongly institutionalised, so routinised, that the existence of a time use problem is not even noticed. Only other changes in the society draw attention to the matter. Modern society is a society of great changes. The problem with use of time is also more burning than ever before."

The "other changes in society" refer to a societal transformation or state of crisis. After the Second World War, until the 1960s, economic growth was rapid and increasing leisure time was seen as a natural outcome of technological development and the ever-decreasing need for human working time (Julkunen 1981). This epoch holds out bright prospects for a three-, two- or even one-day working week. According to Seppänen (1967, 4–7), mechanical reduction of working hours without efficiency considerations and optimal use of machinery and offices will lead to serious economic problems.

The economic recession of the 1970s repressed the optimism of the 'human wave' and the hope for prompt reduction of working time abated. Seppänen's model was examined more closely in the early 1980s by a governmental commission of working time. The commission report (Työaikakomitean 1980 mietintö 1983, 149) assessed that when compared to other forms of working time reduction, the Seppänen model offers possibilities to compensate for the loss of wages if the production volume and markets grew correspondingly to production capacity. A widespread introduction of the model would have important employment effects. In addition to these economic benefits, the model also has positive social consequences, for instance extension of service hours and less concentrated traffic peaks. However, the committee considered that the two-shift society would face a shortage of both labour and capital and that the vastly growing production could not find adequate demand. For these reasons, the implementation of the model would be impossible in the short term. The arguments were totally opposite to the criticism commonly directed at general working time reduction, which, according to popular belief, will lead to declining production¹.

Finally, the above-mentioned serious economic crisis of the 1990s demanded radical and even utopian practical measures². Even if the depression

¹ The committee's opinion on Seppänen's model received strong criticism. One of the most pungent comments was given by Assistant Professor of Social Policy Jea-Pekka Roos (1980), who wrote that the committee's funniest argument against the Seppänen model was expressed in the sentence "From the point of view of enterprises, the main problem is that the Seppänen model does not guarantee a 40-hour working week".

² The severe economic situation has also earlier caused the decision makers to seize the chance of working time reduction. In the 1932 AFL (American Federation of Labour) convention, president Hoover convinced the labour movement and businessmen on

slackened gradually in 1994, unemployment remained at a high level. The newly elected President Martti Ahtisaari nominated a Presidential Working Group on Employment to fight unemployment. This working group created a programme to cut unemployment in half. The programme included a proposal on experiments with Professor Seppänen's model³.

Working time innovations and social problems

A number of labour, philanthropic and religious movements have proposed reductions in working time. David Roediger and Philip Foner (1989) say that the length of workdays has been a key issue in labour history because of its unique capacity to unify workers across craft, race, sex, skill, age and ethnicity. Working time reductions have also been proposed for a great variety of reasons. The arguments favouring shorter working days have emphasised the wider opportunities for rest and relaxation and the positive effects that it may have for physical and mental health and overall well-being. Increased leisure is expected to enable workers to participate more fully in family life and recreational, cultural and educational activities. Parallel to these arguments is the idea of fair distribution of the fruits of technical and economic progress – as well as fair distribution of employment (Cuvillier 1984; Sanne 1995).

The main aim of this research is to show what is societally possible. What are the conditions that explain the ability of organisations to agree on and implement radical changes in working time and what forms of resistance to these changes can we identify? Another aim is to assess the sustainability of the six-plus-six model from an efficiency and social welfare perspective, both at the household and organisation level. The underlying question is how individuals adjust their personal and family life to the new working time system.

the essentiality of a 30-hour week in order to create work for the millions of casualties of the Great Depression. For example, such big enterprises as Kelloggs of Battle Creek, Sears Roebuck, Standard Oil of New Jersey and Hudson Motors voluntarily cut the workweek to avoid lay-offs. The most ambitious and innovative project had been launched in the Kellogg's factories of Battle Creek already in December 1930, in order to employ three hundred unemployed breadwinners. The company replaced the traditional three daily 8-hour shifts with four 6-hour shifts. The 6-hour day was an instant success, which got strong support from businessmen and labour leaders, and attracted the media and President Hoover's administration as well (Hunnicut 1996).

³ Originally, Paavo Seppänen planned a six-day x 6-hour work week (36 hours per week), but in the 1990s, the model was applied to a five-day work week (30 hours per week). In this new form, the model was highly oriented at solidarity and equality.

1.1 The Reconciliation of Opposite Interests

Thus, the experiments were tightly connected to the societal context of the mid-1990s. There was no room for massive and general working time reduction, but the special situation forced the policy-makers to take new initiatives. General working time reduction, considered a defensive strategy that jeopardises the productivity and competitiveness of firms, had been easily rejected in the face of economic recession in the 1990s Europe. From the 1980s, the idea of Reduction and Reorganisation of Working Time (RRWT) was considered an offensive business and employment strategy in the European discussion, implying efforts to shorten the working time while increasing the rate of capital utilisation and competitiveness of firms. EU discussion emphasised the implementation of working time arrangements – implemented and agreed on locally – to take care of the competitiveness of firms. For example, the four-day working weeks of Volkswagen were acclaimed. The six-plus-six scheme was now a Finnish version of the idea of reduction and reorganisation of working times. The idea presumes that reduction and reorganisation have to be carried out simultaneously, especially if positive employment effects are to be achieved (Cette & Taddei 1993).

Thus, the idea was in line with the European commission's working time policy and current understanding of an employable working time solution, as suggested by the European Commission:

Member states should seek to remove obstacles to the ever-changing trends, preferences and demands of employees and employers regarding patterns and hours of working, which will increase the number of jobs for certain levels of output (Growth, Competitiveness, Employment 1993, 131; see also Partnership for a New Organization of Work 1997).

The employment effects of working time reduction have proved to be a controversial subject. At the same time, the possible positive employment effects are justification for working time reduction. One of the most important reasons for the public attention towards the six-plus-six model was that it was not only based on limiting the labour supply by cutting work hours, but it also promised options for better competitiveness of organisations. In this way, it distanced itself from the programmes of work sharing.

The classic idea of work sharing is based on production that involves a constant quantity of hours to keep up a certain level of production. If an employee's working time is reduced, there will be a need to compensate for the deficit of total hours with new employees. The opposing arguments, typically based on economic literature, emphasised that the amount of work is not constant and that working time and workers are not substitutes. According to this argument, the production system will adapt itself to the bottlenecks caused by the deficit of working hours in various ways, such as by recruiting new employees, increasing work productivity, overtime work, cutting operation hours and decreasing production volume. These factors can eventually nullify

the employment effects – and in the worst case – lead to a negative economical spiral.

The reformulation of Seppänen's dayshift model to the six-plus-six model⁴, which was programmatically and – with its new name and icon, 6+6 – metaphorically fixed to the growth and competitiveness regime as an offensive employment strategy, seemed to be politically correct enough. The idea of reorganisation and reduction of working time was somehow a reasonable solution, or at least better than a general working time reduction, and it seemed to fit into the politics of the new ruling coalition (1995) in Finland, led by the Social Democrats, as well as into European "third way politics" (see Giddens 1998, 126–128). The idea of reorganising working time was in line with the general goal of 'flexible enterprises' – to separate operation times and working times to meet the fluctuations in demand.

In theoretical examination, the RRWT seemed to combine the interests of employers and employees. Ideally, the six-plus-six model seemed to be functioning well and producing a 'win-win situation'. The model basked in the public eye, and in the mid-1990s, it was considered one of the most promising employment solutions.

Besides the intelligent consideration of contradictory interests, the fame of the six-plus-six model was based on a utopian element⁵ and faith in fair, solidary politics in which the anti-utopias of work society made room for discussion. The media was filled with popular views and authoritative claims that in this situation we must share work by reducing the working time, one way or another. The six-plus-six model was even promoted with a Parliament bill, made by a representative of the Social Democratic Party. In the mid-1990s, the discussion in Finland was also stimulated by such popular books as Jeremy Rifkin's "The End of Work" (translated into Finnish in 1997) and Juliet Schor's (1991) "The Overworked American". In addition to the solidary element, working time reduction is still appealing to many of us as a collective

⁴ Behind the new name "six-plus-six" was *Yhdistys 6* (Society 6), which was founded to promote Professor Seppänen's dayshift model (Peltola 1999, 7)

⁵ Sir Thomas More's classical text "Utopia" (original 1515) was an attempt to solve the problems of medieval states. In the first part of the book, More criticised medieval European societal circumstances. His criticism was addressed at France and England who, without care, executed thieves who stole for living. According to More's view, the thieving found its explanation from unemployment, which was a result of the changing conditions of land ownership. Growing wool industry involved the fencing of old pasturelands, and former commonly owned lands ended up in the hands of great landowners. Peasant workers were forced to leave their habitation and get their living from begging or thieving. At the same time, the price of corn had raised to a level that the poor could not afford.

The Utopian island, presented in the second part of the book, was an imaginative place – an ideal state – that had settled the above-mentioned problems. The central difference to medieval states was shared land ownership. Everyone was entitled, and supposed, to work. Lazing around was prohibited, but the length of the working day was humane – six hours. The system offered a lot of free time for education, recreation and self-realisation. However, the population would not be in need of necessary supplies because there was more than enough time to produce all that was needed to sustain and facilitate life. According to More, that was easy to understand when looking at other nations and the large numbers of idle people.

emancipatory movement, expanding from an autonomic 'niche' outside the external necessities and freeing us for spontaneous self-realisation (Gorz 1982; Sanne 1995).

1.2 Starting with the Experiments

The actual start that helped the model to become public knowledge was a seminar, "Dayshift Finland. From 8-hour working days towards two 6-hour shifts", organised by the Ministry of Labour, University of Helsinki and Society 6 in January 1995. In this seminar, representatives of the major political parties and labour market actors discussed the dayshift model. The Left Alliance and Centre Party were in favour and the Conservatives against the model. Other parties expressed their interest, but were noncommittal in their opinions (Peltola 1999). The representative from the Industrial Employers Federation took a stand against the six-plus-six model, especially when implemented with wage compensation.

During the experimental period, the employers associations were strictly opposed to working time reductions with higher hourly wages. Employers also emphasised that the dayshift model is too limited working time arrangement for the varied production requirements (Ropponen 1995). In later discussions, the definition of the 6-hour day has caused particular conflicts. Defenders of the six-plus-six model defined the 6-hour day as a version of full-time work, while opponents regarded it as part-time work.

In highly disputed questions, such as working time reduction, temporary experiments are safe arrangements when compared to final reforms. The six-plus-six model caused significant dissension among social partners in that a large-size implementation of the model would be impracticable. Working time policy-makers seized the chance to conduct experiments in several occasions during the depression. In the mid-1990s, experiments with individual work sharing models were initiated (subsidised part-time in 1994 and job alternation leave in 1996) (Julkunen & Nätti 1997; 1999). Both sabbatical leave and part-time benefit systems were first introduced as experiments. The six-plus-six model was also a natural target of experimentation and evaluation research.

The Ministry of Labour followed the proposal by the Presidential Working Group on Employment to launch experiments with Professor Seppänen's model. The follow-up of the experiments was connected to "The Research and Development Project on Working Time", conducted in 1995 at the University of Jyväskylä. This project started with evaluation of the experiments in industrial establishments and shifted into state-subsidised municipal experiments implemented mainly in health and social care services. The aim of the project was to evaluate, with practical experiments, the implementation and outcomes of 6-hour shift schemes.

The research set-up and methodological choices were originally realised by the research team of the University of Jyväskylä, with the follow-up group consisting of representatives from labour market organisations and the Ministry of Labour. The pragmatic aim was, as often in evaluation studies (see Patton 1990), to obtain useful knowledge on the research subject. As Eräsaari (1999) puts it, the fundamental purpose of evaluation research is to revise the complex and contingent world to useful, coherent, credible and prosperous versions by means of conceptual constructions. We needed information especially on organisation-level negotiations and the implementation of experiments. Productivity and employment effects were naturally of central importance when considering the poor economic and employment situation and the hopes that were laid on the model⁶.

The Ministry's original goal was to start research co-operation with new pilot companies. These plans of experimenting with the 6-hour shifts were cancelled, mainly due to changes in the economic situation of the experimenting companies (Anttila 1997). However, the Ministry of Labour arranged contacts with enterprises that were already experimenting not only with the six-plus-six model in the strict sense of the scheme, but also with other versions of 6-hour schemes, such as the 4x6 -hour scheme to substitute the traditional 3x8 -hour shifts. Four Finnish enterprises were the subjects of the study: Essilor; Wallas-Marin; Nokian Renkaat and Orthex. Research material was collected through interviews and questionnaires filled in by the employees. Most of the enterprises were medium-sized businesses in metal or chemical industry. The experiments were small; just one or two production lines (10–20 employees) in each enterprise typically used the 6-hour scheme. The experiences and results from the first four industrial research companies were reported in 1997 (Anttila 1997). After that, research cooperation was set up with eight companies⁷. New experimenting firms popped up occasionally and the gathering of research material took three years. The research team also had discussions with numerous organisations that were planning or negotiating on introducing the 6-hour scheme.

⁶ The public fame and attractiveness of the 6-hour day of the Kellogg company was undoubtedly based on promising results in a gloomy economic situation. The management of the Kellogg company implemented a long-term follow-up programme. After a five-year experimental period, the company reported a 25% decrease in the production costs per unit, 10% decrease in the employment costs, 41% decrease in occupational accidents and 39% increase in employment. The management stated that after five years of experiments, they have discovered that the work morale and efficiency of work has increased, and accidents, insurance premiums and production costs have fallen so much that they can pay as much for a 6-hour day as previously for an 8-hour day (Hunnicut 1996). Respectively, in the mid-1990s in Finland, the media was very interested in making public all the results from the pioneering companies who experimented with the six-plus-six model.

⁷ In addition, outside of these research projects, the six-plus-six scheme was introduced in 1996-1998 in five manpower offices. Altogether, 103 employees, of whom 37 were unemployed people recruited as substitutes, participated in these experiments. The principal aim of the experiments was to improve services by extending the service hours.

Two kinds of municipal working time experiments

Lively discussion on the six-plus-six model continued and encouraging results from the pioneering private sector companies raised hopes for experimentation with the model in the public sector as well. In the mid-1990s, worsening working conditions in public sector organisations, due to the curtailing of public expenditures, caused public concern for employee well-being. The points considered and used as arguments for working time experiments were rehabilitation, maintenance of working ability and skills, as well as rest and relief from overloading work situations. In addition, the municipal working time experiments aimed to facilitate the quality of services, mainly by extending the service hours (Jukka 1998). The original 'research laboratory', City of Helsinki, cancelled the planning and negotiation process of the 6-hour shift experiment. The planning process was well under way in home care services and parking control units, but after two years of negotiations between the employer and trade unions, the plan fell apart.

In the spring of 1996, the Ministry of Labour, following the policy programme of the government, made the experiments with shorter working time possible. This was facilitated by a temporary change in the Employment Act (1 Jun 1996–31 Dec 1998). According to the change, unemployed job seekers could be hired to substitute those full-timers who had reduced their working time for a two-year period. The State covered 50% of the labour costs of employees who were recruited during the experiments⁸.

During 1996–1998, two kinds of experiments were carried out. First, with the support of the European Social Fund (ESF), a research and development project "Flexibility Through 6-Hour Shifts" was conducted in three municipalities (Espoo, Jyväskylä and Naantali). In these ESF municipalities, altogether 116 employees participated in the experiment with the six-plus-six model.

Second, the Ministry of Labour chose another 17 municipalities to participate in a broader project, in which the municipalities could freely choose the working time patterns that they wished to experiment with. Of these 17 municipalities, 14 participated in the evaluation study. In these 14 municipalities, altogether 858 employees participated in the experiments with different working time models (6-hour shift, day off or week off).

In all, 20 municipalities participated in the working time experiments and 1 320 permanent employees reduced their working time in different ways so that the average number of weekly working hours was 30. Approximately 580 new employees were hired through these experiments and the new employees typically worked 30 hours per week.

One of the official aims of the "Flexibility Through 6-Hour Shifts" -project was that the effects of the system on productivity, quality of products and services, costs and competitiveness would be studied using detailed data from

⁸ It is important to notice that private companies were not subsidised at all.

each participating unit. Experiences from the municipal working time experiments were reported in 1999 (Anttila & Tyrväinen 1999).

This research is based on data gathered during the follow-up period and the previous research reports mentioned above, but the scope is broader than in the follow-up study. Even if new working time politics passed the six-plus-six scheme and the number of practical experiments remained modest, this was an interesting societal experiment that challenged the temporal order of workplaces, and their formal and hidden, individual and organisational practices of time. It changed the routine-like timetables of individuals and their daily paths in time and space. It also challenged the 8-hour working day, which in Finland is the predominant cultural norm of a 'day's work' for both women and men. The experiences from these experiments indicate what is societally possible when making changes in the duration, timing and tempo of work. Most importantly, however, radical changes in working time – and leisure – can bring into focus some socio-cultural aspects of time that are worth studying.

1.3 The Structure of This Book

This research includes eight chapters. Chapter 2 will provide a short description of the history of industrial working time and bring into focus the questions of why and how working time has become shorter in the industrial era. The chapter will also concentrate on the shift to fragmented working time during the late twentieth century. It will define new strategies for the use of working time and describe how the dissolving of the institution of normal working time occurred.

In Chapter 3, I will use statistical sources and previous research to define the characteristics of Finnish working time. I will discuss the actual and preferred working times of Finnish employees, as well as the firms' interests on working time. The chapter will also contextualise the actual research object, the so-called six-plus-six -hour model, to the present discussion on working time reduction. The idea of simultaneous Reduction and Reorganisation of Working Time (RRWT), which the six-plus-six -hour model represents, was debated especially in the 1990s. This debate was lively in Europe and it influenced, for example, the implementation of the current 35-hour week in France.

Chapter 4 will discuss the methodological approaches of this research. It will contextualise this case study research to earlier research within two traditions: the dominant quantitative-linear tradition, which is a socio-technical approach (to the research theme) and the qualitative-cyclical tradition, which emphasises the nature of working time as a social and cultural construction.

Chapters 5 and 6 will examine the implementation of 6-hour shifts in both industrial and public sector case organisations. I will divide the working time experiments of manufacturing firms into two groups, according to their strategic aims. Some companies implemented the working time reduction as a

defensive strategy to avoid lay-offs, whereas others were aiming at an economically profitable solution when adapting to the fluctuations in demand. The municipal experiments will be examined in relation to the aims that the municipalities and Ministry of Labour set for them. The two central goals were to improve the quality and availability of municipal services and reduce the problems related to work exhaustion. I will also provide a short description of the societal context of the public sector experiments. Chapter 6 will present the experiences from the manufacturing and municipal experiments and provide a comparison of the application of the six-plus-six model in private and public sectors.

The aim of Chapter 7 is to analyse the effects of shorter working hours at the level of individuals. Experiments in the public sector offered an opportunity to compare the effects of different forms (daily, weekly or monthly) of working time reduction. The underlying question is whether working time reduction still meets the traditional requirements concerning the well-being of employees and well-balanced work and leisure time. The analysis will focus on two specific subject areas; the first one deals with the questions of work and family interaction and the second one covers the question of changing leisure.

Finally, Chapter 8 will summarise the experiences from the Finnish experiments with 6-hour shifts and other forms of working time reduction.

2 THE WORKING TIME QUESTION

2.1 Rhythms of Life, Rhythms of Production

The social history of working time illustrates how the economic structures of industrialism produced a number of metaphors of linear time, which have lately influenced the time experiences of modern societies. John Hassard (1990) says that the piercing linear tradition underestimates the phenomenology of working time, which is in many respects based on cyclical and qualitative contents. The most central images of the linear-quantitative approach were inherited from two positivistic traditions – functionalist studies on the structuring of time and Marxian studies on temporal commodification, both of which invoke linear time perspectives and draw on economic rationality. Karl Marx showed how industrial time was commodified and Max Weber how the rational-legal society, a fertile ground for capitalistic economy, was related to the change in time reckoning, bureaucratisation and institutionalisation of the spirit of capitalism. Industrial time was linearly continuous, calculable and transferable to money. After Durkheim, we know that time is a collective phenomenon, a social fact, and that time has specific social qualities and reference points in common (Adam 1993; Glucksmann 1998). As shown later, the key question of working time reduction is not only related to the quantity but also the quality of working time and leisure. Industrial, context-free and commodified linear time has unquestionably affected our reckoning of time and displaced the significance of biological rhythms and traditions. However, the rationalisation process is not complete.

World history includes at least two disturbing factors that have fundamentally restricted the rationalisation process of industrial production. Firstly, the rotation of the earth both on its axis and on the sun and the alternation of day and night make steady production impractical. Our alertness is related to the level of the melatonin hormone, which in turn varies according to the level of light. Inevitably, we are more alert and productive in the daytime. Secondly, a perhaps even more severe problem relates to the

institutionalisation of the secular concept of time and the differentiation of weekdays and Sundays, sacred and profane. History includes examples of unsuccessful attempts to radically reshape the societal time order. The power of traditions has been proven, especially when the reforms have become involved in the institution of sacred and profane time.

Zerubavel (1985, 28–43) gives two examples of the power of tradition, and of religion in particular. In 1793, the new ruling assembly in France introduced a revolutionary calendar, which replaced the traditional Christian era. The new calendar was expected to embody the new values of secularity and rationality and symbolise the total discontinuity of the ‘new age of reason’ and ‘old age of ignorance’. The new calendrical system was based on a decimal principle. The length of twelve months was standardised. Following the recently introduced metric reform of the traditional system of measures and weights, the 30-day month was divided into three 10-day weekly cycles, called decades. Correspondingly, the days were divided into 10 hours, and each hour into 100 minutes. The more radical symbolic reform to de-Christianise France was, however, the abolition of Saints' Days and Sunday and the introduction of new civil holidays based on the new weekly system. Churches were allowed to be open on the new holidays called ‘decadi’ and the citizens were forbidden to close their stores on Sundays. The 10-day weekly rhythm was maintained by the efforts of revolutionary authorities until 1805. The restoration of the seven-day week was a result of Napoleon's general policy of reconciliation with the Church.

Another interesting case is the Soviet calendrical experiment with an uninterrupted production week. In 1929, the traditional interrupted (*neprieryvka*) workweek was replaced by a continuous production week. The reformation was related to the Soviet government's first five-year plan, and it aimed at speedy industrialisation. Multiple shift systems had already secured continuous workdays, but the traditional workweek, including Sundays, still limited the full exploitation of industrial equipment. The introduction of the continuous workweek was not based on production considerations alone. The reform also had an antireligious purpose. The traditional seven-day week was replaced by a five-day week, consisting of four workdays and one day off. The system broke the traditional Judeo-Christian institution of a weekly rest day, shared commonly by the entire society, and in short divided the society into five separate working populations. The temporal asymmetry caused problems in social and family life, but it was production problems and declining productivity, due to the ‘floating responsibility’ of separated worker groups, that were the compelling reasons for restoring the single, shared weekly day off. After the two-year experiment, the five-day week was replaced by a six-day week, in which every sixth day was a common day of rest. The decrease in weekly days off was compensated by a shorter daily working time. This system dominated in the industrialised parts of Soviet Union for nine years, whereas economic life in the countryside was still tied to the traditional seven-day rhythm. Finally, in 1940, the weekly cycle was prolonged back to seven days –

according to the official stance – to expand production possibilities. After eleven years, Sunday was re-established as an official weekly rest day.

2.2 Institutional Changes and Organisation of Working Time

A German sociologist Manfred Garhammer (1999a) says that we cannot understand emerging new patterns of everyday life and the life course at micro level without understanding macro-level institutional changes and meso-level organisation of work. In the following sections, I will run through history and bring up the questions of why and how the earlier reductions of working time took place. In fact, the 200–300-year history of industrial working time includes two simultaneous trends, namely the marked reduction of working hours and the standardisation of work and leisure time.

The past few decades seem to be a turning point of sorts in the aforementioned trends. I will describe this process and the shift to more fragmented, de-standardised, deregulated and de-institutionalised working time. I will also examine the current preferences of employers and employees regarding working times. The underlying question is why the contemporary work society seems to be alienating from the idea of further working time reductions.

2.2.1 Fight against industrial working time

A great leap forward in modern time consciousness occurred in the early phases of industrial production. The appearance of the clock speeded up the industrialism, changing the cyclical time experience system into a linear system based on the alternation of day and night. The employees started to understand linear time and to learn that time was money. They also learned to fight for time. Time became a commodity. The industrial culture absorbed linear time, in which the past was not repeatable, the present is a fleeting moment and the future is unending. Time is also something that can be measured and endlessly divided into smaller units, and it is a resource that can be consumed for various activities. This means that time is a scarce resource and its scarcity will increase with potential new activities. Furthermore, in more advanced societies, time scarcity causes events and situations to differ and condense; special times are directed at particular activities.

In his classical analysis on the birth of industrial time consciousness, Thompson (1967) describes how the industrial worker became an object of a very precise time discipline. The new time regime of factories caused a new time discipline in working time and broke down the pre-industrial tradition regarding duration and placement of work. The concentration of population in cities and the expansion of trade, coinciding with puritanical work ethic and advancing clock technology, resulted in a new time discipline at least in urban

areas. The experience of time in rural areas remained unchanged for decades, despite of increased industrial production. The time experience of rural populations was based on the alternation of light and seasons, and the situational urgency of work tasks. The people moving to towns and industrial work maintained their traditional time order regardless of the employers' sanctions and persuasion. The workers kept 'Saint Monday' as a holiday after Sunday and did not succumb to the employers' fringe benefits, payable for punctuality, if their normal necessary subsistence was achieved (Blyton 1989, 107; Thrift 1981; Thompson 1967).

Large industrial establishments implied a segmentation of roles and positions, as well as a segmentation of time and places of operations in and between productive organisations. A natural outcome was the accentuation of planning; the planning of time and more exact timing of operations became obvious. Minutes and hours replaced tasks as a measure of production. Correspondingly, employees were rewarded according to temporal units as daily, weekly, monthly or yearly pay. Modern industrial production was efficient only when its members closely followed the modelled series of temporal conventions. Clock time had two central meanings: it produced a common organising framework for synchronising production and it commodified labour as part of production (Hassard 1989). The endlessly differentiated products, whose (use) value was context and situation specific, had to be exchanged for money. In this process, context-free and abstract clock time was necessary as an intermediate.

Modern industry demanded a technical and organisational production process and towns to house the labourers, but above all, industrial progress demanded discipline if human labour and machines were to fit together (Thrift 1981; Frykman & Löfgren 1979, 30–33). This required practices to guarantee that the employees take the new time structure as self-evident. Instruments in the implementation of time discipline included punishments for negligence towards the time order, and since the mid-1800s, economic bonuses. More subtle training was organised in the framework of leisure and education. New working class schools and Sunday schools were abstract machines that, in addition to teaching other skills, impressed the time discipline on the children's minds (see Foucault 1977; Thompson 1967; Adam 1990, 110–111). However, the employers' victory was never complete; time discipline remained partial and problematic (Hassard 1990). The life-long socialisation process to the time regime of the industrial organisation of work, starting in the kindergarten and school, is valid even today (Elias 1982; Garhammer 1999a).

When clock time was accepted as the norm, at least partially, the fight against time was replaced by the fight about time (Adam 1990, 111). As a result, working time was notably reduced in the mid-1800s. However, the workers did not campaign against the new idea of time, but for the arrangement of working time. Thrift (1981) states that the workers had won the battle on time, but they had lost the war: time – not task – was money.

From task to time discipline in Finland

Pertti Haapala (1994) claims that working time was discovered as a means to regulate craftsmen's trade and commerce and to secure the interests of cities and their bourgeois. First, local trade unions claimed to restrict migration to towns to secure the levels of wages and working time. The first claims to reduce working time were based on human reasons (educational or related to the health and family life of workers) – not on the measurement of time or the cutting of capitalist profits. In fact, some worker groups resisted the reduction of working time because they were worried about the wage levels. Trade unions and employer groups did not have a decisive role in actual decision making on early working time legislation. In the early 1900s, trade union policy was still directed at local agreements between individual employees and employers. Actually, the Social Democratic Party, formed in 1899, brought up the question of working time reduction (Bobacka 2001, 44).

Finland entered the standardised time system as late as in 1921. In the early industrialist phase in Finland, time discipline did not penetrate the agricultural society. The agricultural time system – with long pauses and rest periods, due to the nature of agricultural work – dominated also in industrial work until the last quarter of the 19th century. Wages were paid on a yearly basis, similar to the agricultural tradition. The pay system based on worked time units became more common at the beginning of 20th century (Haapala 1994). Nevertheless, the regulation on industrial time and space was accentuated at the turn of the 20th century. The tightened regulation of industrial time created struggles not only for the duration of the workday, but within the workday as well. In a long workday, the arrangement of work during the day was of central importance (Teräs 2002, 92–99). In this context, Haapala (1994) emphasises the change in individual consciousness in the early 20th century and the spreading of the doctrine of rational society, controlled by people's self-assertion. The employers started to take into account individual workers as elements of productivity, but only in the 1900s. The time spent at work, despite being shorter, was rationalised along with the wage system, resulting in rapid growth of productivity. It is illustrative of this wave of rationalisation that the first attempts to apply Frederick Taylor's scientific management programme and its new methods of control and direction of work were implemented in the 1910s (Kettunen 1990).

2.2.2 Fight for shorter and normal working time

While the first generation of industrial workers fought against time, the second generation formed committees for shorter working hours (Adam 1990: 112, Thompson 1967, Hellström 1992). The duration of working time, i.e. the length of the working day and working week, has historically been the most contentious aspect of working time. Growth of productivity is regarded as a precondition for working time reduction. A portion of the potentially increased income level has been directed towards reductions in working time. However,

there are marked differences in working times and productivity progress between countries (Antila 1998; Bosch 1999). The situational factors related to the reductions are ambiguous. Working time has typically been reduced during economic growth phases, when the national economy has been able to afford it, but the waves of working time reduction have also accompanied all the major economic crises of the 20th century⁹ (DiMartino 1995). Until the 1980s, the length of working time was steadily falling. Since then, this development has stagnated, and especially in expertise work, working time has started to increase.

In addition to the reduced working time in the last hundred years, working time has also been homogenised and standardised. Homogenisation refers to convergent working time between different labour groups and standardisation means the introduction of normal working time: a five-day working week from Monday to Friday in the daytime. Labour, philanthropic and religious movements introduced the idea of normal working time in the early 20th century. The norm of standard hours was consolidated by direct limits or pay premiums for unsocial hours to limit overtime, night, evening and weekend work, as well as certain shift patterns. Work hours in excess of the agreed working time, or hours that diverge from the agreed schedules, are additionally remunerated. Normal working time was established to protect employees from long working times, and as in today's society, also from too short and irregular working times (Bosch 1998; 1999, Boulin 1998; Fagan & Lallement 2000; Lehndorff 2000). Normal, standardised working time has sheltered the workers from the employers' unexpected demands. This shelter was built by restrictions to daily and weekly working time. The price that the employees paid for this is the lack of possibility to revise their working time according to individual needs (Bosch 1997).

The first agreement on working time, made by the International Labour Organisation in 1919, outlined the daily working time to be 8 hours and weekly working time to be 48 hours. With the standardisation and homogenisation of working time, the 8-hour working day and 48-hour working week formed a focal point in industrial work for decades. In the 1960s and 70s, the reduced working time in many European countries was based on economic growth and strong demands by labour movements for improved living and working conditions. These reductions occurred roughly in a similar way in different countries: by cutting long working hours and overtime, by abandoning Saturday work and by extending vacation rights. When compared to USA and Japan, this tendency led to the European model, which in the late 1970s meant transition to a 40-hour working week, divided into five 8-hour days and linked

⁹ After the crisis of 1929, a goal to reduce working time to 40 hours was adopted by ILO (1935). France resorted to national legislation in 1936 to reduce the weekly working time from 48 hours to 40 hours. Italy temporarily switched to a 40-hour week in the industrial sector in 1937, as did USA in 1938, indirectly, by requiring high overtime pay for work time that exceeded 40 hours. During the oil crisis of the 1970s, working time was primarily reduced through collective bargaining in many industrial countries (DiMartino 1995).

to a 5–6-week annual holiday. There was some variation between countries, for example in the regulation of part-time work, but these differences did not call the existent working time standard into question (Boulin 1998).

In the early 1980s, the sharing of work through reduction of general working time was under employment policy discussion in several European countries. The policy was connected to the thoughts of trade unions. In Germany, the powerful trade unions won the battle. In France and Belgium, state support was a significant reason for reducing the working hours. The trend of reducing hours of work that lasted until the 1980s has slowed down (DiMartino 1995). In the 1980s, unemployment and simultaneous economic recovery made the issue of working time reduction possible; however, the attention shifted to making working time more flexible. In the 1980s and 90s, the reductions in working time have been faster in countries that have a more advanced and exhaustive collective agreement system. Above all, this has meant reductions in the annual working time of full-time employees. Looking at the average length of working time of all employees reveals that the most significant statistical change is due to the increased share of part-time workers. Steffen Lehdorff (1999) has stated that the hidden message of statistics is that collective working time reductions have been replaced by individual reductions.

Recent European programmes on work sharing and working time reductions are mostly directed at more flexible working times. A review of European working time policies from the 1980s until today shows that the claims to reduce working time for employment reasons have changed to reshaping policies that emphasise flexible working time solutions, justified by unstable international competition. The claims for reductions of working time have abated and employment policies have been directed towards relieving firms from inflexible working times and offering them more possibilities to implement non-standard working time arrangements. It is also evident that working time is more and more negotiated at the firm or individual level (see e.g. Bastian & Hinrichs & van Kevelaer 1989; Bastian 1994; Boulin 1998; DiMartino 1995; in Finland see Julkunen & Nätti 1999; 2002).

The reduction of Finnish working time

Since the first years of the 20th century, Finnish labour movement's demands for shorter working time got stronger. Process industry plants first implemented the 8-hour shifts in continuous three-shift work in 1905 to guarantee labour peace. The reduction from 12-hour to 8-hour days was notable, but in a good economic situation the wages remained unchanged. After a couple of years, the economic downturn forced the plants to return to the 12-hour working day. Abandoning the shorter working time put the labour movement in an uncomfortable position because the core issue on working time was associated with power relations and control of work (Koivuniemi 2000, 115–119).

In Finland, the 8-hour working day took effect with a general act on working hours, enacted in 1917, after large and partially violent strikes (Mattila

1992, 45–71), but the majority of industrial workers shifted to 8-hour days in 1920. Trade-specific regulation had already been introduced in the early 1900s. The 8-hour working day was enacted for bakery workers in 1908. The upper limit for a workweek in bakeries was 48 hours and the maximum amount of overtime was 100 hours per year (Bobacka 2001, 44). Heikki Waris (1974, 90) characterises this act as the first social policy law made in a unicameral system in Finland.

After the Civil War, until the Second World War, also the increasing gravity of political climate defined labour market policy. Authoritarian management prevailed in industrial establishments and in this era of managerial corporatism, the employers unilaterally defined the terms and conditions of employment (Kauppinen 1994, 52–54). During the depression in the 1930s, the reasons for reducing working time changed. Previously, arguments to reduce working time had primarily been associated with workers' health, whereas now the possibilities to relieve a severe employment situation¹⁰ were emphasised (Bobacka 2001, 46).

In 1940, following the example of other Nordic countries, the social partners recognised each other. This was a start for collective agreements. After the Second World War, in the time of controlled economy, state was a central agent in income policy. In 1946, a working time law was enacted, validating the 47-hour week. After the general strike in 1956, the state's role in collective bargaining changed when the policy of economic control ended and the social partners started bilateral bargaining – also on working time. Working time was reduced to 45 hours in the late 1950s by trade-specific agreements. Finnish industrial relations since the late 1960s have been characterised by a close connection between political and labour market systems (i.e. corporatism). In 1968, the first national broad-based income policy settlement was completed. Since then, the central organisations of employers and employees and the state have implemented a tripartite bargaining policy, which has aimed at wide-ranging income policy settlements and bound together a range of social, work and economic policy aims (Bobacka 2001).

The notable reductions in working time took place in 1966–1970, when Finland shifted to a five-day working week. Since the 1960s, working time reductions have been based on the achievements of single industries and the spreading of these reductions to other industries and sectors, due to claims for equal treatment by the different groups of working population (Julkunen & Nätti 1999, 53). The target of uniform working times was also in the background when the last major, collectively agreed increase in leisure time materialised in 1986–1990. The reduction of standard working time (by 100 hours per year) was directed at those blue-collar workers who had the longest weekly hours (40 hours). The equalisation was to be carried out at the local level and was

¹⁰ A comparable shift in argumentation took place during the great depression in USA (Hunnicut 1996; Rifkin 1995, 26–29). According to Nyland (1986), an argument based on human physical limits was dominating the discussion on working time until the 1950s. Since then, this argument has not been denied, but regardless, it has been withdrawn from the agenda.

implemented in most cases by granting 12.5 free days per year, but also by shortening the regular daily working time or by combining different forms of equalisation. The free *Pekkas-days* were named after the National Conciliator Matti Pekkanen. After the 1980s, the shortening of working hours dried up. During the last twenty years, regular working time has been reduced by about 4%, while the reductions had previously been about 8–9% per ten years (Santamäki-Vuori 1997, 40; Julkunen & Nätti 1997, 35).

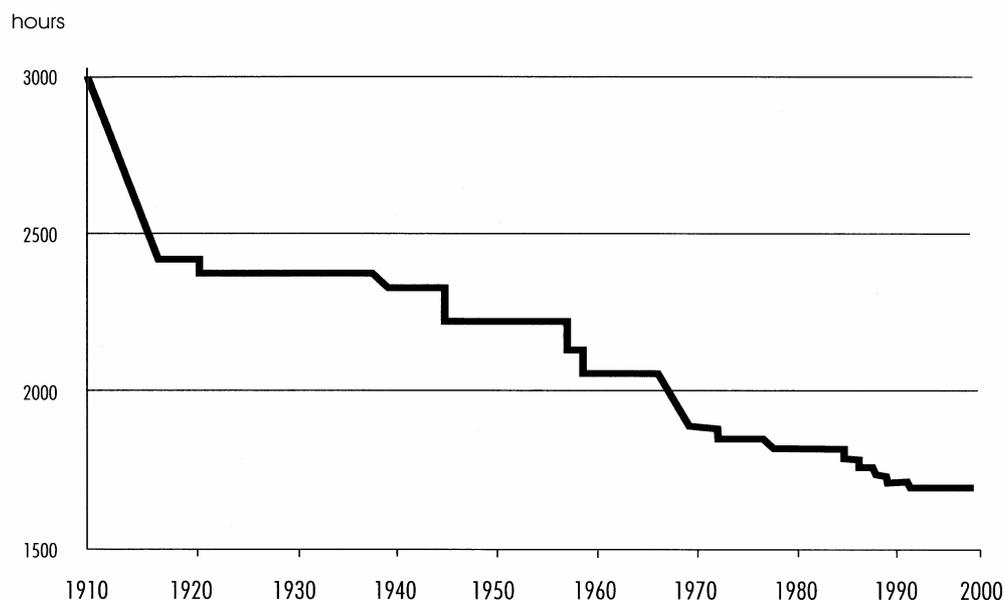


FIGURE 1 Regular annual working time of Finnish industrial workers in daytime work
Source: Confederation of Finnish Industry and Employers

2.2.3 The standardisation of working time

Along with the standardisation of working time in advanced societies, and especially the expansion of the welfare state, gender- and age-based norms in work life participation were also normalised. Both the education system and the concept of retirement established a division between youth, economic activity and retirement (Fagan & Lallement 2000; Bosch 2004). At the same time, participation in full-time wage work was conforming to a certain societal time structure that was part of the moral and economic foundation of the welfare state.

Normal working hours is a cultural norm that has produced a uniform temporal order and way of life. Normal working time and forms of employment have allowed long-term planning of the use of labour. Thus, they are especially suitable for large-scale mass production. The historical precondition has been stable production and demand. Fluctuations in demand have been buffered by mass production stores or covered with more expensive overtime work or under-exploitation of labour. The labour force has been

relatively homogenous in quality and in its interests. The symbiosis of the form of normal working time and form of employment has been included in the Fordist paradigm of production.

Within the context of the Taylorist scientific management system and mass-production, the 8-hour day became an accepted framework for the rationalisation of interlinked and synchronised tasks, broken down to their component parts and specified in complete detail (Lehndoff 2000). Work processes were cut up and the time units of the 8-hour day de- and reassembled with the assistance of time and motion studies. The separation of mental and manual functions and task fragmentation was actualised by socio-technical innovations, which facilitated the compression of all that was porous time and the exclusion of unproductive and idle parts of a day (Adam 2001).

Contemporary sociological analyses of work emphasise that the processes of working life are leading to a situation in which the importance of collective regulation and uniform time structures is lessening. Continuing the chain of paradigmatic changes in industrial production, the normalisation of non-standard working hours has been seen as an aspect of transition from a Fordist to post-Fordist era. The historical trend of reduction and normalisation of working hours stopped in the 1970s, and the paradigm gradually changed into a flexible production paradigm (Julkunen & Nätti 1994, 39–52; 1995; Bosch 1997, 1999; Roberts 1998; Beck 2000; 67–72).

2.3 From Standard Working Times towards De-Institutionalisation of Working Times and Leisure

It is characteristic of the working time policies of European societies and European welfare regimes that the decisions on social times are not submitted to the individual actors or companies, but are regulated by laws and collective agreements (Fagan & Lallement 2000). Normal working time and normal and stable forms of employment have been part of the legally regulated system of work society, but also a foundation for the temporal order of society. The consensus on that model has made it possible to synchronise education and social and economic times (Supiot 2001).

The separation of work and leisure became possible with normal working time. Alain Supiot (2001, 64–66; 87–88) claims that industrial rationalisation (i.e. Fordism) separated working time (at the employers' disposal) and free time (rest period) and led to their consideration as diametric opposites. In earlier capitalism, non-working time was simply considered recovery time, or work force reproduction time, but Fordism tried to subject workers' aspiration to enjoy leisure time to its own constraints, to be spent 'freely' (see also Fagan & Lallement 2000, 26–33; Robinson & Godbey 1997, 24–35). The innovation gave workers substantial amounts of free time, weekends off and holidays on a regular basis. At the same time, consumption of standardised products became

a major activity during the leisure, supported by the new consumption rule prompted by Fordist standards and generic products and imposed by advertising. Free time was converted into marketable time, time for consumption, and it lost its status as a goal in itself. Its value became a function of purchasing power. In the era of Fordism, stable employment relationships and increased purchasing power made the prolonged free time (and consumption time) attractive and usable.

Manfred Garhammer (1999a) says that the standardisation of working day, week and year and the whole phase of working life have produced four separate institutions of leisure time: free evening, free weekend, paid yearly vacation and periods of freedom from work in the youth and in the old age. These institutions have given a framework for leisure time and the whole course of life. Together with stable employment, these four standards have offered security for the planning of daily and weekly routines and made it possible to share free time with families and friends. These working time and leisure institutions have also allowed people to engage in long-term planning.

According to Garhammer's (1999a; 2002) interpretation, these time institutions are dissolving. They are losing their normative and universal power – deviations are allowed and desired in the name of flexibility. The structural change of institutions has been described as a transition between organised capitalism and flexible capitalism. In the discourse of flexibility, western societies are compelled to solve the crisis of work society by increasing flexibility, which presumes the removal of obstacles that prevent full adaptation to flexible markets, such as commitment to family, colleagues, local places, towns and even commitment to firms.

The process of new working time management is realised along with changes in collective bargaining and working time regulation. The main mechanism, previously securing the steady decrease in working hours, does not function in changing economic and political conditions. Regulated reductions are difficult to negotiate due to the slower rates of economic growth and reduced bargaining power of trade unions. In globalising markets, the control and regulation of working time arrangements moves towards more flexible solutions. Annual working time systems are used, instead of daily, weekly or monthly working time systems, and negotiations take place at the local level (see e.g. Contensou & Vranceanu 2000; Bosch 1997; Fagan 2002, in Finland see, Työaikaraportti 1998; Laukkanen 2003; Työaikapoliikka 1999; Uhmavaara & Kairinen & Niemelä 2000).

The transition into individual contracts means that the private person has to bring a wide range of private resources into play. Ulrich Beck (1999, 109–121) declares in his essayistic style that social identity and ontological security through work are history. Fordism and Keynesian policy were based on national boundaries, a notion of national politics and national societies, and trust on the possibility to regulate them. In the era of global risks, this metaphor of order will vanish and be replaced by demands to adjust to the global market. The risks apply to everyone, irrespective of age, gender or social status. A Fordistic, standardised mass production regime – based on inflexible,

segmented and hierarchical division of work – becomes a hindrance to the expansion of capital. Making work more flexible in respect of all the central dimension of work – working time, workspace and work contract – is a focal point of productivity increase and target of rationalisation.

Eventually, increasing insecurity and unavoidable compulsion to adapt to flexible capitalism is a threat to the biographical identity of workers. Routine, standardised norms and forms of action, which guaranteed ontological security in the industrial era, are at the crossroads (Sennet 1998; 2000), although most labour remains inscribed within the circle of Fordism.

Garhammer (1999c) lists some characteristics of the winners and losers of flexible capitalism. Winners are the people who are capable of finding the competencies needed in competition – who can overcome the power of routines, like time pioneers (Hörning & Gerhard & Michailow 1995) seeking a way to escape from the securities and constraints of the routines of standard working time, as well as entrepreneurs and self employed, who manage to find a niche in the markets. Losers do not have the prerequisites for social, temporal and spatial mobility. They are anchored in close relationships, families or friends and their personal and social identities are grounded on these relationships. Their mobility may be restricted because of the economic costs of mobility, for example if they have just invested in their housing.

On the one hand, dissolution of the standard of working time and normal biography may appear threatening. On the other hand, the new time regime – flexible capitalism's work time mosaic – includes possibilities for greater time autonomy and new kind of time prosperity. Atypical and prolonged working hours may not be such problems as they used to be in the industrial time regime and under internalised time discipline, and people may be able to use the working time palette and combine activities in new ways. This, of course, assumes that people get more working time autonomy and learn to use it.

Withering away of emancipatory politics?

Traditions and institutions are getting weaker and losing their power in working time processes. In addition, in the era of dissolution of old certainties, discussion seems to be turning to the individuals' powers to govern and plan their everyday life and course of life. The matter has been under discussion since Ulrich Becks's renowned book *Risikogesellschaft* (1986). In this book, Beck argues that the meaning of individuals has strengthened in modern Europe, coinciding with the weakening meaning of traditional social categories, such as class. This means that people are interpreting the world within the framework of individual identity and their own life. Time – including working time – is more and more one's own concern, not a collective issue.

Working-class ideology and the cluster of emancipatory movements have kept up the issue of working time until the present day. The scriptwriters of the new theories of contemporary society emphasise that emancipatory politics – “efforts to be freed from arbitrary hold of tradition and from the constraints of material deprivation” – as Anthony Giddens (1994, 14–15) formulates it, have

now been challenged by lifestyle politics – an individual's strive for “life of one's own” (Beck 1986; 1998; 2001). According to the theory of reflexive modernisation, the power of these individual choices over the structures of society shapes the foundation of modern societies without political elites or platforms. Reflexive modernisation deals with the modernisation of modern society and its interlocking social institutions. These institutions – among them the reliable welfare state, mass parties anchored in class culture and nuclear family with a single breadwinner, supported by a security web woven out of industrial regulation, full employment and life long careers – are thrown into flux by reflexive modernisation (Beck & Bonss & Lau 2003). Beck et al. (2003) raise the issue of ‘naturalisation’ and suggest that it has been a precondition for the success and effectiveness of the institutions of industrial modernity. By naturalisation, they mean that people understand the structures and institutions of modernity as given and unalterable. “Simple modernisation becomes reflexive modernisation to the extent that it disenchants and then dissolves its own taken-for-granted premises”. Barbara Adam (2003) writes that the social time of modernisation tends to be such a naturalised and a taken-for-granted category.

Without taking a stand in favour of or against the arguments on the withering away of emancipatory politics, it seems that at the turn of the 21st century, the world of work is reshaping along with new local and global processes, and *the collective* seems to yield to both. Barbara Adam (2001) writes that work has attained new local and global qualities, and that localised and individualised efficiency deals are being established, whereas the standards would previously have been set nationally and bargained for collectively. At the same time, work is being negotiated in the context of global labour markets and global competition: “the world, not nations, is the market where labour is traded and the fate of much future work sealed” (Adam 2001).

2.4 Changing Sectors and Changing Work

These de-prefix processes sound profound; however, statistical sources on working life and empirical organisation-level studies (see Antila 2001; Liikanen 1997; Julkunen & Nätti 1999; Julkunen, Nätti & Anttila 2004) show that the old paradigm is getting out of the way slowly and that the new and old paradigms actually coexist. In addition to detraditionalisation, deinstitutionalisation and deregulation, the driving factors of working time changes consist of globalisation and informatisation processes, as well as large-scale sectoral changes and differentiation of job contents.

Service economy and the new needs of variable working time arrangements

One significant challenger of normal working time and its regulation has been the expansion of the service economy. Hospitals, process industries, hotels and transportation are examples of industries that have long traditions in different shift systems to cover the production cycle that departs from day-shift hours. The new trend is that this phenomenon is spreading to new industries, especially in the service sector. Particularly the growing need for leisure services provides new claims for the organisation of time.

In addition to their immaterial¹¹ nature, services are usually associated with another specific quality: the inseparability of the time and place of service production. According to the nature of services, their production and consumption are simultaneous processes. Especially services in which the immaterial nature is strong are difficult to store and transfer. They involve working times in the evenings and weekends. For that reason, the service economy tends to increase undesirable, short and unsocial working hours.

The service economy may open up new opportunities for reconsidering the organisation of social time. If the service economy is expected to structure the regime of growth even more, social time – the time that constitutes the time structure of society – is a focal question (Gershuny 2000). Standard Fordistic time becomes an institutional hindrance to services because it restricts the periods when production and consumption can meet and produce a service relationship.

New technologies and the distantiation of time from space

The changing temporal rhythm of production and consumption activities is reinforcing the time-space distantiation (Fagan & Lallement 2000, 29). While in pre-modern cultures the ordinary activities and day-to-day life – time and space – were connected through the situational nature of place, the modern social life – coordinated with globally standardised time zones – is characterised by the separation of time from space (Giddens 1991, 16–17). Technological and market-driven acceleration in traffic, communication, production and administration change the objective qualities of time and space in such a way that we are forced to radically change our approach to the world. The expansion of the present shortens the time horizon and causes perceptions of time compression (Nowotny 1984; Harvey 1989, 241; Luke 1996).

Industrialised working time culture and consistent working hours are yielding to more fragmented working hours and more individually organised daily paths (Breedveld 1998). Members of the modern society have to cope with several overlapping time schedules that define the rhythms of social life and form the time structure. Communication technologies are supposed to be a

¹¹ The distinction of (immaterial) services and (material) goods is more and more difficult, and many qualities and definitions, traditionally connected to services, do not correspond to the present situation.

driving factor in the process of changing time regimes. For example, Castells (1996) argues that the new time regime is linked to the development of communication technologies. The social processes are redefined in changing time-space relations. In the information age, according to Castells, capital and labour are diverging into separate spheres of time and space; on the one hand, into network time, which is drifting away from clock time, and on the other hand, into local day-to-day life, structured by social and biological rhythms. In the network society, 'modern', linear, measurable and predictable time will give way to timeless time when capital eventually breaks away from time and cultures escape from the clock. The consequences of this process are full of contingencies and instabilities because the 'gambling finance' changes the production conditions. It also affects the most fundamental patterns of behaviour, formerly based on reliance on the permanence of economic and social institutions, and damages "the social perception of the correspondence between production and reward, work and meaning, ethics and wealth".

2.5 The New Relationships between Work, Time and Wage

To understand the global race to achieve maximum efficiency and the downward spiral of labour conditions and wages, Adam (2001) writes that we have to familiarise ourselves with the multiple role of time as a resource and commodity. Current tendency to valorise speed and efficiency emphasises the compression of time. The productivity increase obtained by compressed time no longer transforms to increased leisure, but becomes – culturally – an object of aspiration.

The new network enterprise operates in a market characterised by fast capital circulation, short product life spans and wide connections of firms to other networking firms. Time is a critical factor in the markets; it is compressed in the information economy, but the essential difference to the industrial time regime is that clock time loses its function as a measure of production and standard of conversion between time and money. We can suppose that, after an era of industrialism, the task reclaims its place as a measure of production. This has a major impact on time management, time discipline and power relations at work.

In the 20th century, the industrial time regime provided exact synchronisation of production machinery (capital) and human work (labour) by optimising the duration, timing and tempo of working time. Industrial manual workers could produce more by simply working harder or working longer hours, i.e. producing more in quantitative terms. High productivity entailed labour discipline and continual control of working time. The functioning of the system was secured by a direct relationship between time and wage. In the 21st century, respectively, the productivity of the knowledge worker depends on the quality of output. High productivity entails high autonomy and continuous

learning (Drucker 1999). Productivity is not in direct proportion to linear and homogenous time units. Time-based measures of knowledge-intensive work and methods of valorisation of time can be somewhat arbitrary (Yakura 2001).

It has also been suggested that information work is not bound to any specific place or time. Therefore, work cannot be governed with traditional organisational control. One reason for that is the abstract nature of working time and the work itself. Current jobs consist of integrated tasks, whose elements include physical tasks, knowledge-based tasks and service tasks. This integration creates added value that can hardly be proportioned to the time spent at work. The deciding factor of the profitability of production is the added value that the customer gets. Work itself cannot be reasonably controlled by working time, but rather by results. Output depends not only on the number of working hours, but also on perception and creativity, and therefore, it is essential to create favourable conditions for creative knowledge work and commitment to the firm.

The rise of the information society, communication technologies and information-intensive work is predicted to break the industrial divisions between work and non-work (home, leisure), and their defined sites. In the optimistic visions of the information society, this is viewed as an emancipation of the industrial society's restrictions. Critical tones emphasise the disintegrating impact of the erosion of old, shared time rhythms, as well as the stressing demands of modern just-in-time availability – even 24 hours a day and across different time zones – as extreme consequences of new global networking and the information society (Adam 1995; Castells 1997; Garhammer 1999b; Härmä 1998; Kalimo 1999; Sennett 1998; Rubery & Grimshaw 2001; Blom & Melin & Pyöriä 2001; Odih 2003).

3 WORKING TIME PREFERENCES AND PRACTICES

Recent working time discussions in Europe have often assumed that the workers' working time preferences have become more individual, differentiated and fragmented. Increased female participation in the labour force¹², erosion of the male breadwinner model, combining education or training with work and new lifestyles are considered the main factors behind this development (Bosch 1995; 1999; Beck 2000, 81–86; Rubery, Smith & Fagan 1998). In other words, besides the increased supply of flexible working time arrangements, there seems to be a new demand for more flexible work arrangements. The increased labour participation of women presupposes integration of families and wage labour. The more flexible working times facilitate the harmonisation of different times for childcare, school hours, vacations and working times. The consistency of families and lifestyles is differentiating. More and more people are living in one- or two-person family units in which the pressures of agreed commitments are minor, enabling more individualised working times. In addition, it is more common for work and education to overlap in the course of life. The alteration of work and education produces a labour reserve, whose working time preferences vary from part-time work to full-time work, according to the life situation.

The agents of working time policy also seem to emphasise that the diversification of the working time 'palette' is in accordance with the needs of the members of post-traditional society, with diversified lifestyles and family situations. Breedveld (1998) says that the underlying assumption is a liberal notion of working time as an element of choice and free will. However, flexibilisation of working time and increased time sovereignty should not be equated. The question is always of power and resources, as pointed out by Adam (1990, 104–126) and Nowotny (1984, 102–131).

¹² In EU, women accounted for a majority of the labour force growth (85%) after the recession in 1994-1999. This applied especially to the growth of women's labour force participation in the age group 25-54 years. The jobs created since 1994 have gone to women and a substantial portion (70% of net additional jobs created for women) of these new jobs have been part-time work (Employment in Europe 2000). In Finland, women's full-time labour force participation has been very high for decades.

Julkunen & Nätti (1994, 179; 1999, 150–152; 2002) argue that in the post-industrial society, the agency and initiative of the modernisation of working times have shifted from the labour movement to employers. In the era of increasing uncertainties, the employers have managed to advance flexible practices in workplaces. The cost of insecurity has been at least partly shifted from the enterprises to individual employees.

However, Peter Knauth (1998) has stated that high flexibility in a company and the acceptance of new working time models presupposes compromises that guarantee benefits and improvements both for the company and for its personnel (see also Uhmavaara & Jokivuori 2003).

Societal conditions

Working times are embedded in the institutional framework created by the labour market and state. Working times and the demand for and supply of jobs with particular forms of working time are influenced by direct regulations concerning working times, i.e. part-time work or overtime work, and indirectly by education systems, social security systems, taxation and the regimes of social service provisions, among others. These 'societal effects' have a significant role in forming working time practices (Bosch 1999; Bielski & Bosch & Wagner 2002).

In addition to wages, taxes and social security, the formation of working times is directly affected by working time regulation. In Finland, tripartite negotiation has become an established practice in the labour market and working life issues. In international comparison, Finnish working times are labelled and formed by collective regulation, institutionalisation of local bargaining, a social security incentive system that favours high participation in working life and moderate working hours, and especially by symmetrical labour market behaviour among sexes. Leaves of absence associated with sickness, maternity, paternity, parenthood, paid annual leave, education, etc. are guaranteed social rights that do not depend on the wage earner's individual negotiation position (Julkunen & Nätti 1999).

Finnish societal institutions – such as children's day care and public (municipal) care for the elderly – effectively support full-time employment for both genders. Although full-time work has remained the predominant form of employment among women, part-time work is more common in female occupations and it creates a new form of gender segregation, especially when labour market regulations and social security systems continue to be based on the notion of secure, full-time, dependable employment (Kolehmainen-Linden 1997).

In working time comparisons, Finland – like the other Nordic countries – is categorised as having a universal breadwinner model (Fagan & Warren & McAllister 2001), in which the more traditional male breadwinner model has been challenged the most and women participate extensively in the labour markets. In addition, Nordic countries also have the most comprehensive public childcare services and family leave provisions, which offer women the opportunity to enter the labour market (Väisänen & Nätti 2002). Mutari & Figart (2001) have categorised European countries into different work time

regimes and they include Finland, along with Denmark, Belgium and France, in “solidaristic gender equity work time regimes”. This regime, discernible from “liberal flexibilisation regimes” or “male breadwinner regimes”, has tried to achieve gender equality by changing the norms of working time. In practice, this means high labour force participation of women and relatively high gender wage equity (see also Anxo & Flood & Rubery 1999). Both long and short working hours are moderate.

In fact, the Finnish working time regime has all the characteristics of the relatively favourable gender equity model compiled by Rubery, Smith and Fagan (1998, 79–80). The list consists of relatively short full-time hours, small male-female gap in average full-time hours, a small proportion of men and women working very long hours, opportunities for women to work long part-time/short full-time hours, a small proportion of women in jobs involving short working hours, a low rate of unsocial hours worked by both men and women, relatively equal employment of women and men during unsocial hours, and no particular tendency to use female part-time work to cover the unsocial hours.

Gendered cultures

The institutional framework created by the labour market and state have a central role for employment behaviour, but these institutional factors often displace important cultural factors. Pfau-Effinger (1998; 1999a) has compared structural and cultural differences as explanations for part-time work in different countries. Pfau-Effinger presents a 'gender arrangement' approach, which conceptualises the relationship between culture, structure and action and serves to analyse different societal processes.

The number of hours one 'should' work is thus socially constructed, and it strongly affects the perceptions of work. In this respect, there are differences that derive not only from the organisations, but also from the societal working time regime and culture (see also Anxo et al. 2000). These differences affect the constructed, gender-specific 'ideal worker', which in turn affects how much work is done (Lewis 1999; Pfau-Effinger 1999b). In Finland, the 'ideal worker' works full time (approximately 8 hrs/day), which applies to both women and men. Nonetheless, working hours are still gender segregated – most part-time workers are women (17% of women vs. 8% of men) and men are more likely to work longer hours (Employment in Europe 2000).

The role of cultural factors is illustrated in Pfau-Effinger's (1998) study on part-time work in the Netherlands, Germany and Finland. When compared to the Netherlands and Germany, Finnish women are not "torn between 'self' interest and 'care' interest, the demand or expectation to be in two different places at the same time – in the office and at home", at least not to the same extent as women elsewhere. In Finland, full-time employment is common, and accepted, among women with dependants and part-time employment is not very extensive, while for example in the Netherlands and (West) Germany, part-time work is common among women with dependants.

3.1 Finnish Working Times

The following chapters will present information on normal, standard or agreed working times and the working time preferences of individuals. Special attention is paid to working time preferences, even though the surveys can only partly reach the social qualities of the different times, or the institutions of work and leisure. However, the duration and timing (daily, weekly, annual) of working hours – and respectively, the categories of free time: breaks during the workday, daily, weekly and annual rest periods – have been the main issue in time disputes and the regulation of working time. In that context, they will be looked at in a social/unsocial working time dichotomy. It is impossible, and hardly meaningful, to estimate the actualisation of the reported preferences very closely in this work. For me, they are indicators of the changing balance between the current and desired situation.

The contemporary diagnosis of working times consisted of a long list of de-prefix qualifiers that described the dissolution of industrial working time. The breakthrough of agreement-based flexibility dates back to 1993, which was the deepest recession year (Julkunen & Nätti 2002). However, in spite of dramatic economic and social changes and the restructuring of work time institutions in the 1990s, the statistical portrait (e.g. Labour Force Surveys 1986–2001) of working times indicates continuity (Nätti 2002). As Antila and Ylöstalo (1999) have concluded, the old working time paradigm has yielded only gradually: the old and new paradigms now live side by side.

In the mid-1990s, regular working hours in Finland were rather uniform and concentrated around the collectively agreed working hours (37–39 hours per week). In the European comparison, Finnish wage earners had the least minimum hours (<20 hours per week) and, along with the Netherlands, Sweden and Germany, the least long hours (>45 hours per week) (Julkunen & Nätti 1999, 38; see also Boisard & Cartron & Gollac & Valeyre 2002). The gender differences in working hours were the smallest in Finland; 2.8 hours between the weekly working hours of men and women, whereas the European average was 7.4 hours per week. However, the European Labour Force Survey (1997) shows that the unsocial hours – such as shift, evening and Sunday work – were more common in Finland than the EU average.

The average weekly working hours in Finland are quite close to the EU average. Among employed persons (total employment), the average usual work week was 38.2 hours in 15 EU countries in 1997 and 38.9 hours in Finland. Although our standard and actual working hours per week (and per employee) are quite similar to most other European countries, the picture changes when we examine the working hours per person of the working age population (15–64 years of age). The working hours per person are affected by factors such as labour force participation rate, rate of part-time work and unemployment rate. In 1988, the average yearly working hours per person were 1 305 in Finland. Of the OECD countries, only Japan had more working hours (Bosch & Dawkins &

Michon 1992, 8). The 1990s depression reduced the number of working hours, and in 1997, the corresponding Finnish figure had declined to 1 131 hours. In spite of the high rate of unemployment, the working hours per every work-aged person remained higher than the EU average (1 050 hours). Among the working age population, the most hours were worked in the USA (1 445 hours) and Japan (1 330 hours) (Nätti 2002).

TABLE 1 The length of working time and working time arrangements of wage and salary earners in 1986–2001, according to annual labour force surveys.

Length of working time	1986	1989	1991	1993	1995	1996	1997	1998	2001
Actual working hours per week (distribution, %)									
1-19	5.7	8.0	6.4	6.5	7.7	7.5	6.9	7.7	8.7
20-29	5.8	7.6	9.4	10.3	10.7	12.2	6.0	7.7	12.3
30-34	6.6	17.4	18.8	21.6	20.1	17.7	8.2	21.5	23.2
35-39	19.7	27.0	28.7	26.5	24.1	24.7	34.1	24.3	21.9
40	40.6	21.1	20.5	17.4	18.2	19.6	23.9	21.0	18.0
41+	20.8	18.9	16.2	17.8	17.4	17.5	20.3	17.0	15.9
Unknown	0.7	0.0	0.0	0.0	1.7	0.7	0.6	0.8	0.0
Regular working hours per week (average hours)									
- both genders	37.7	36.9	36.8	36.7	36.9	37.3	37.0	37.2	37.0
- men	38.8	37.9	37.8	37.8	37.2	38.7	38.5	39.0	38.7
- women	36.5	36.0	35.8	35.6	35.8	36.1	35.6	35.4	35.3
Actual working hours per week (average hours)									
- both genders	38.2	36.3	35.9	35.6	35.5	35.6	37.4	35.9	34.7
- men	39.8	37.9	37.4	37.1	37.7	37.8	39.6	38.0	36.6
- women	36.6	34.6	34.3	34.1	33.6	33.6	35.5	33.7	32.7
Worked on Saturday (during the survey week, %)	18	18.4	16.2	20	17	18.9	16.6	17.3	16.1
Worked on Sunday (during the survey week, %)	11.9	12.5	10.8	12.6	12.1	13	10	10.6	10.7
Shift work					23.6	22.7	23.1	24.1	24.1
Part-time work (1-29 hours)	7.3	7.2	7.2	7.9	8	8.3	8.7	9.1	10.1
Working time arrangement (%)							*		
- regular daytime work (06-18)	75.9	74.0	76.0	72.7			70.0		68.9
- regular evening work (18-23)	2.5	2.1	1.9	2.0			1.3		1.6
- regular night work (23-06)	0.4	0.7	0.9	0.5			1.0		0.8
- regular morning work (<06>)	0.5	0.7	0.5	0.5			-		0.4
- two shifts	8.6	10.9	8.9	10.6			9.9		12.4
- 3 shifts	6.2	5.9	5.6	7.3			6.8		7.8
- weekend work	..	0.4	0.5	0.5			0.3		0.2
- some other type	5.4	5.0	5.9	5.5			10.7		8.3
- can't say	0.5	0.4	0.2	0.3			0.0		0.1

Source: Nätti (2002), data from Annual LFS 1986, 1989, 1991, 1993, 1995, 1996, 1997, 1998 and 2001.

*=Survey on working conditions 1997.

..=too few cases; - =data missing

Note: The regular working hours per week have included regular overtime hours since 1997. In addition, there have been other changes in the questions concerning the working hours (Julkunen & Nätti 1999). Therefore, comparisons over time must be made with caution.

3.2 Employee Preferences on Shorter and Flexible Working Hours

According to the data from Labour Force Surveys (1989, 1993 and 2001), the most desired length of working time is between 35 and 40 hours per week among wage and salary earners. Most respondents (66% in LFS 2001) preferred their current working hours, 19% wanted shorter and 15% longer working hours. Thus, most wage and salary earners seemed to be satisfied with their current working time. Satisfaction prevailed among those workers whose current working week was 35–40 hours long.

Bielenski et al. (2002, 15) have hypothesised that individual desires for working time reductions are most likely to arise under a good economic and employment situation, in which many material desires have already been fulfilled and workers are likely to reduce the excessive strain that had built up during the boom period. Naturally, only breaking with the rigid standards of organisational practice and widespread introduction of flexible solutions in work organisations allow the employees' preferences to be realised. Respectively, a bad economic situation presumably causes the workers to seek improvement by increasing their work time. This presumption was verified in an analysis on Finnish wage earners' preferences during an economic downturn (Nätti 2002). When looking at the willingness to change the current working time (shorter/longer), the recession caused the employees to stick to the normal workweek and reduce their preference for shorter hours. Between 1989 and 1993, the willingness to work longer hours increased (from 6% to 13%), and respectively, the willingness to work shorter hours decreased (from 25% to 14%).

Dissatisfaction was more common among workers who worked either less than 30 hours or more than 40 hours. The people who were working relatively short hours preferred a longer working time, whereas the people who were working over 40 hours preferred a shorter working time. The willingness to adopt a shorter working time was the strongest among middle-aged and older workers and among non-manual workers, whereas the willingness to adopt a longer working time was the strongest among young workers and manual labourers (Nätti 2002).

Time-bound careers

In the recent years, common experiences among Finnish employees have included feelings of an increased pace of work, prolonged working hours and an increased amount of unpaid overtime work. The concept of working hours has become more obscure; recent studies have reported diverse results regarding the frequency of long working hours. According to the European working conditions survey (2000), the usual weekly working hours in Finland

were the third longest among EU countries, probably due to women's full-time work (Paoli & Merllie 2001).

Representative data on highly educated Finns (spring 2001) reveals that long working hours and blurring limits of work and non-work are common phenomena. Half of the highly educated Finnish employees had difficulties in defining their total working hours – men more often than women and managers and professionals more often than blue-collar workers. One out of three women and half of the men worked more than 40 hours per week. Among these highly educated employees, the most common reason for prolonged working hours was the nature of and commitment to work. The existing working time norms and work culture in the organisation also make a difference. The more result-oriented an organisation is perceived to be, the more the working hours tend to be prolonged (Nätti & Anttila 2002).

At the same time, the desire for a shorter working time is still strong. The aforementioned survey reveals that there is about a seven-hour (one workday) weekly time gap between the actual and desired working time. Lack of time for oneself seems to be a chronic problem in modern life. The time devoted to oneself tends to come in last – after socially more binding time for work, family and homework. It is significant that half of the respondents perceived weekly problems with sleep and one fifth said that they reduce their sleeping time to have enough time for everything (Nätti & Anttila 2002). Unrealised preferences for reduced working hours may reflect the institutionalised nature of work and career paths (Clarkberg & Moen 2001).

The availability of time for work might also increasingly be regarded as evidence of high performance, commitment to work and motivation for advancement (Perlow 1998; Florida 2002), or as Sarah Rutherford (2001) sees it, as a mechanism of patriarchal closure. Some researchers link the working time changes to new corporate cultures, which tend to bind the workers emotionally to the company. For example, Catharine Casey (1995) says that after the crumbling occupational and class solidarity of the industrial era, the top corporations have empty space for new cultural projects. The new company cultures offer tempting possibilities for sharing the company success and experiencing a new sense of community. The collective resistance of the industrial era has changed to personal negotiations with the self.

According to Arlie Hochschild (1997), a coup in the relations between home and workplace is in the background of the long working hours of Americans. Work has become a place that is associated with respect, social relations and experiences of success. Home, on the other hand, has become a second, marginal workplace characterised by duties and family members pestering for attention. While working time is used more and more inefficiently, time at home is compressed and takes the form of line production.

In Finland, long working hours (and careers) are concentrated in the same households, as are unemployment and labour market inactivity (Nätti & Väisänen 2000; Virmasalo 2002). Finding realistic options seems to be difficult. Preferences for shorter working hours face constraints that lead to either non-employment or full-time work, even in the Finnish two-earner model.

Clarkberg and Moen's (2001) argument about organisational policies and employer expectations, with regard to work hours, as having remained structured along the all-or-nothing breadwinner/homemaker cultural template also applies to Finland.

3.3 Shorter Working Day or Longer Leave

Worker readiness to adopt flexible working time arrangements was inquired in the 1993 Labour Force Survey. According to the results, wage and salary earners were interested in working time arrangements that would take into account their own life situation (44%) and the possibility to save a portion of their holiday or overtime hours to be used later (e.g. a sabbatical leave) (46%). The widespread acceptance was expected because these forms of flexible working times are employee oriented. The employees wanted even more flex time. Many employees (37%) were, however, also ready for varying the length of their working time according to the demands of their workplace. Still, they were less willing to vary the timing of their working hours, e.g. evening, weekend or shift work (16%).

The characteristics of work and the work history of each individual had an effect on people's attitudes. The employees who perceived high job insecurity in their workplace were the most positively inclined towards flexibility. Furthermore, the employees who had been unemployed during the past 12 months were more willing to be flexible than the employees who had not experienced unemployment.

Interest in new working time models among employees

Workers' willingness to adopt new working time models was queried in the 1997 Working Conditions Survey carried out by Statistics Finland (n=2 978 employees, response rate 79%). According to the results, wage and salary earners were particularly interested in banking their working hours for future leave (61% were interested) (Table 2). Almost half of the respondents were also interested in the six-plus-six -hour job sharing model with full wages and a compressed working week. Furthermore, almost 40% were interested in sabbatical leave and a part-time benefit. On the other hand, only 9% were interested in the six-plus-six -hour model with partial pay.

TABLE 2 The proportion of employees interested in new working time models in 1997 (%)

	6+6 with full wage	6+6 with partial wage	Compressed working week	Part-time benefit	Sabbatical leave	Working time bank
Total	46	9	47	37	38	61
Gender						
- male	42	7	52	28	37	61
- female	49	10	42	40	39	60
Age						
- 15-24	53	12	57	33	27	68
- 25-34	47	9	52	32	40	70
- 35-44	47	8	48	36	41	62
- 45-54	46	9	43	37	42	56
- 55-64	29	4	27	25	20	34
Sector of economy						
- manufacturing	50	7	50	32	38	64
- private services	42	9	49	32	37	61
- public services	46	9	42	39	39	58
Socioeconomic status						
- blue-collar worker	52	8	48	33	34	59
- lower white-collar	49	10	47	37	40	64
- upper white-collar	28	9	44	32	43	58

Source: Survey on Working Conditions 1997

The willingness to adopt new working time models varied by gender, age, sector, socioeconomic status and work characteristics. Women generally showed more interest in the new models than men. Women favoured 6-hour days and subsidised part-time, while men were interested in the working time bank, and especially in the compressed workweek, which offers longer continual blocks of free time in exchange. This indicates that even in 'equal' Finland, women's time is more bound in the obligations and duties of everyday life than men's. Nätti (2002) summarises some structural traits that increase the interest in most alternative working time models:

- age (the young are more interested);
- labour market insecurity (those having recently experienced unemployment and perceived job insecurity are more interested);
- experience of hurry and time pressure increases the interest in most models

Several working time studies indicate that the six-plus-six model is inconsistent with the preferred social organisation of working time. Wage earners resist shift work and evening shifts because of dissolving everyday structures and routines. If given a choice, the working time is placed in the mornings (Liikanen 1997). The general trend is that if the workers can choose, they prefer extensive blocks of free time and full days off, even at the expense of longer daily hours. A practical example of this is that both employees and employers favour a compressed workweek with 9–12-hour shifts, instead of five 6-hour shifts per

week (Kauppinen & Kandolin & Määttä 1996). According to the results of the Working Condition Survey, workers under 25 years and parents of small children were especially interested in the six-plus-six model. Among women, the model aroused interest in the public health and social care sector, and among men, in private manufacturing and construction companies. However, the model loses its attractiveness if pay cuts are involved.

Overall, European employees seem to prefer longer periods off rather than shorter daily working hours. At the European level (EU countries and Norway), the working time preferences of the employees have been studied in the Work Options of the Future survey in 1998. The general trend in Europe is that the employees would prefer about five hours less work per week than their actual situation (39hrs/week) (Atkinson 2000). One out of four European full-time employees would like to work part-time (permanently or for a given period). The Finns (28%) were well representative of the European average, whereas French full-time workers were more willing to work part-time (35%).

The Finns prefer longer periods off over shorter working days. Nevertheless, the preferred way of reducing working time in Finland was having extra days off, which is slightly more than the European average (Figure 2). The second most favoured option among Finns is to have longer periods off, which is noticeably more than elsewhere. Only 16% of the Finns would prefer to work shorter days, which is less than the overall preference in Europe.

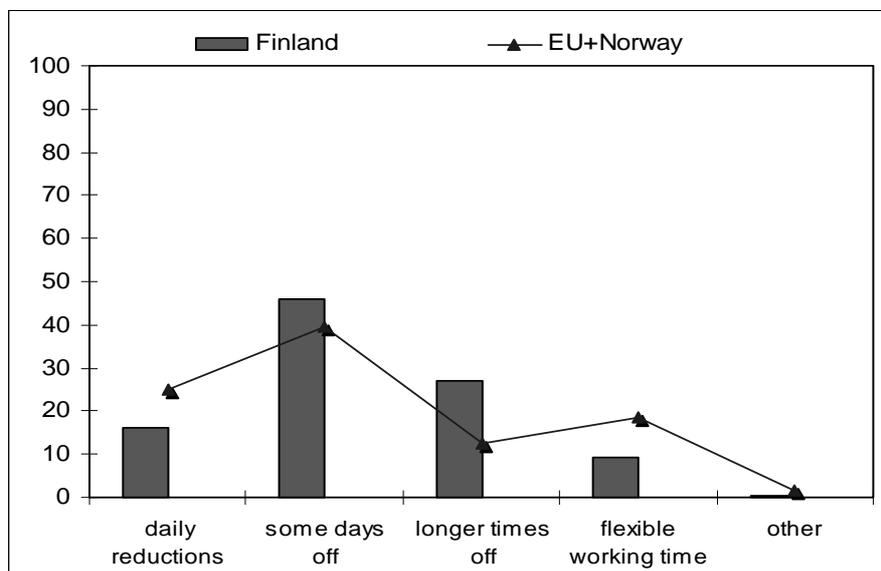


FIGURE 2 Preferred ways to reduce working time (Finland and EU + Norway average)

The gender difference holds in Europe; women are more willing to work part-time when compared to men. Overall, a fifth of men and more than a third of women would like to work part-time.

Not only in their wishes, but also in practice, women are the main users of the new working time arrangements. Julkunen & Nätti (1999) have claimed that the reason for gender differences in the use of individual working time schemes

that provide shorter hours or longer leaves¹³ is that women's life interests are broader than men's, and this is not only due to care responsibilities. The average age of women who utilise the possibilities to reduce their working hours is over 40. Women simply want time for themselves – be it family life, personal life or social life. Increased work strain in female occupations in the 1990s is likely to attract women to handle collective problems through individual working time solutions. Household dynamics are another explanation. Although Finnish women have established their position as breadwinners, they might feel more entitled to reduce their working time as 'second earners' and to lean on their spouses' income. Moreover, women's work communities and cultures are perhaps more tolerant and accepting toward shorter hours, leaves of absence and part-time work.

Thus, in accordance with the presumptions of the post-industrial theories on individualising and differentiating working times, there are some signs of differentiation in workers' working time preferences in Finland. However, both the actual and main interest of workers appears to be the right to a standard working time, and therefore, the right to regular earnings (Julkunen & Nätti 1999, Liikanen 1998).

3.4 Firms' Interests in Working Time

The interests of firms in working time have changed along with changing production paradigms. In the late 20th century, rapid changes in the global markets compelled firms to also search for competitiveness from new forms of labour usage. Since the 1980s, flexibility, in which working time has been a key component, has been the management's key concept in adapting to the

¹³ Subsidised part-time is part of the government's employment policy. According to this scheme, a full-time worker who shifts to part-time is entitled to receive compensation from public employment funds – provided that an unemployed person is employed for the other part of the job. The compensation is about half of the income loss. From a modest start (1994), the popularity of this scheme increased, and it ended up serving especially women in the public health and social services sector. Nine of ten users were women, as were the vast majority of substitutes. The users were older than the substitutes; middle-aged women with a stable work career were sharing their work with younger women with unstable careers. The *motives* for moving temporarily to part-time are individualistic - time to oneself, family, studies and hobbies, and relief from workload and work pressure. Another new subsidised scheme was a *long leave scheme (job alternation leave)* introduced in 1996, first as a temporary experiment (1996-97), but then continued until the end of 2003. The scheme provides employees a freely available, partly compensated break (3-12 months) from work, while unemployed substitutes get a temporary job with normal working conditions. The persons on leave are paid a benefit to partially compensate for the loss of earnings. This scheme has also been mostly exploited by women (70%) and public sector employees (60%). The popularity of the job alternation leave has been growing. During 1996, 5 500 employees started their job alternation leave period, and during 2000, the number was 12 400. Most users (90%) would like to take a new leave sometime later (Nätti 2002).

fluctuations of demand in specialised goods and service markets. Generally, tightened competition, uncertainty, turbulence of economies and speeding technological change are in the background of the firms' flexible strategies (Atkinson 1987). Transition from long conveyor production series to single specialised products, and respectively, from narrowly skilled and specialised production line workers to multi-skilled and self-directing professional workers is characteristic of the modern production concept. These characterisations refer to the transition to "Just In Time" – and to lean production paradigms, flat organisations and the abandoning of tayloristic, organised and controlled hierarchical organisations.

In fact, the transition is not parallel in all industries. Gerhard Bosch (1999) presents a pointed argument that at the turn of the millennium, the development of work organisation in Europe includes two central trends. Firms, relying on their competitiveness and knowledge of specialists, aim to increase the flexibility of work and working times and take into account their employees' needs in every respect. These firms break the tradition of taylorism and lower the hierarchies of their work organisations, increase the teamwork and task-autonomy of employees and offer stable and safe forms of employment. In other firms, especially in labour-intensive service sector firms whose business concept is based on price competition, the tayloristic organisation of work is getting stronger. These firms seek competitiveness by increasing the share of the marginal workforce.

The discussion on flexible production and network economy started in Finland in the late 1980s (Ollus et al. 1990). Especially large enterprises started to invest on flexible technology and introduced new flexible production management practices. During the depression in the mid-1990s, flexible production became a national survival strategy. Economic recession, mass unemployment and a weakening position of the trade union movement promoted the advancement of flexible forms of production. While the big enterprises outsourced their peripheral operations, public employment policy concentrated in small and medium-size enterprises and in entrepreneurship (Ruuskanen 2003).

The research project "Flexible Enterprise" (see Antila & Ylöstalo 1999) gives practical evidence of the different work time strategies of traditional and flexible enterprises. In this study, the authors made a separation between traditional and proactive Finnish enterprises. Traditional enterprises had a hierarchical organisation and low employee autonomy, whereas proactive enterprises had extended the employees' responsibilities and task autonomy. Proactive enterprises used more multifaceted work time arrangements, justifying them by increased market competition. The share of part-time workers had increased both in proactive and traditional workplaces, but in traditional workplaces, and especially in the low-qualification service sector, the local bargaining of work conditions increased the shredding of work into pieces. Working hours in proactive enterprises were longer than in traditional workplaces. Working time autonomy seems to be a trade-off for long working hours. If there is a differentiating tendency between the type of enterprise and

sectors, being proactive tends to increase relative inequality at workplaces: the differences in time autonomy as well as between personnel groups and men and women are greater than in traditional enterprises (Antila 2001).

The times of production – operation times, opening times, delivery times, going-through times and working times – have obviously been important elements in discussing the changing production paradigms. However, Giddens & Hutton (2000, 20–27) argue that the challenges in contemporary capitalism are not first and foremost related to the rationalisation of manufacturing processes, or even to their optimisation, but to controlling the production idea – the patent – and the distribution channels of this idea. The shift of the management discourse is in any case obvious. The problems of marketing and distribution, intellectual property rights, the niche in the markets and the business concept are more important than the problems of production.

In her study on the innovative working time arrangements of Finnish enterprises, Liikanen (1998) points out that working time arrangements in enterprises are assessed mainly as secondary factors in competition. Working times are not regarded as independent, but as subordinate instruments to more important factors in competition, such as reliability and quickness of delivery, optimisation of timing and the avoidance of interruption of operations.

Generally, the firms' main interests on working time may be classified to three groups. Firstly, firms want more variation on working time due to changing demand (on daily, weekly, seasonal or cyclical basis) (Alanko 1999). In a firm survey (Eriksson & Fellman 1991), managers were asked what kinds of changes they want to implement on working times. There seemed to be a lot of willingness towards new working time arrangements, although the wishes were quite heterogeneous. The most common wish was 'more variable working time', i.e. variation in working time according to seasonal changes in demand, more variation in the timing of individual working hours and more variation in the length of individual working time. It is noteworthy that the firms showed little interest in working time arrangements that are based more on the workers' choices (e.g. part-time pension, variable retirement age, sabbatical leave, flex time). Furthermore, the manufacturing firms wanted more weekend, part-time and shift work. The private service firms in particular preferred more part-time work. However, the firms were not very interested in longer working hours or more overtime. The main obstacles to introducing new working time arrangements were legislation, collective agreements and employees' resistance. In addition, the private service firms also mentioned higher costs.

Secondly, the firms are interested in longer operation and business hours to increase the productivity of fixed capital. In the manufacturing industry, for example, the operation time with only daytime work is 1 700 hours per year and during the rest of the hours (7 060), the machines are idle. Longer operation and opening hours mean more shift work, more evening, night and weekend work, more part-time work and staggered working hours (see Bosch 1995; Anxo et al. 1995; Gross & Dasko 1999). In a survey of 800 Finnish firms (Eriksson and Fellman 1991, 36–39), 48% of the manufacturing firms and 37% of the service firms wished to have longer operating hours. However, the firms saw many

obstacles for their wishes. The most common obstacle was legislation and collective agreements. In the manufacturing firms, the resistance of employees and lack of skilled labour were also viewed as important obstacles. In the service firms, the increase in production costs was considered a major reason for not adopting longer operating times (see also Eriksson and Fellman 1995).

Thirdly, the firms want more freedom to negotiate and decide on working times at the firm level. In the above-mentioned survey (Eriksson & Fellman 1991, 43–44), managers were asked how the working time issues should be negotiated. 54% of the manufacturing firms and 74% of the service firms preferred personal agreements at the firm level. In addition, 46% of the manufacturing firms (and 22% of the service firms) preferred firm-level agreements between employers and trade union representatives. Only 14–15% of the respondents preferred agreements between trade unions and employer associations, and 5–7% were in favour of legislation.

Thus, Finnish firms are generally interested in utilising more flexible working hours – the form of which depends on business conditions – part-time work and longer actual working hours. The firms prefer working time arrangements that can control the work process. From the point of view of Finnish manufacturing firms, the largest problems with the implementation of longer operating hours are agreements on wages and working conditions and the unwillingness of employees to adjust to longer operating hours or a longer work week (Repo 1996). In the service sector, increased wage costs are viewed as the main obstacle to longer operating hours.

What is historically new is that the operating hours are not being extended with large extensions by adding new production shifts. Adding a second shift enables the doubling of operating hours and capacity, and in this case, the demand for products should be substantial. Usually the need for extended operation hours applies only to bottleneck units. Cost-conscious firms apply a more subtle method of adjusting the operating hours by flexible working time arrangements, such as flexible breaks, compressed and staggered hours or varying lengths of shifts on a daily basis. Industrial firms still have the possibility to equalise seasonal variation in demand from their stores. In general, however, the variation of products has increased and it is too expensive to maintain large stores. For this reason, the variations in demand have a direct impact on working hours. Working time replaces the stores and individuals themselves act as buffers between the market and production. Industrial production is expected to move towards customer-oriented production and a principle of services (Bosh 1997; Lehndorff 1997).

It is also more cost-efficient to act according to the fluctuations in demand by considering working time flexibly at an annual timeframe, rather than to operate with shorter time periods that commonly rely on overtime. This is the reason why firms use 12-month, or in the case of long demand cycles even longer time periods as the basis for working time planning.

3.5 Company Strategies and RRWT

Significant reductions in normal working time seem to be a taboo. However, what if the reorganisation of working time could combine the interests of employees and employers and lower the threshold of implementing new working time reductions. The idea of simultaneous reduction and reorganisation of working time (RRWT), which the six-plus-six -hour model represents, was debated especially in the mid-1990s in Finland. This debate was also lively in Europe and it influenced, for example, the implementation of the current 35-hour week in France. From employment policy perspective, working time should be reorganised to maintain or increase operation or service hours and to facilitate the sharing of work tasks. In practice, this means the resetting of individual working times, including unsocial daily hours, development of multi-skilled teamwork, readiness to learn new tasks and readiness to share one's work by possibly consenting to wage reductions.

Firstly, a precondition of RRWT – in general and at local firm level – is that additional labour is available. Secondly, if working time reduction leads to an increase in production volume, a precondition of profitability is that there is adequate demand for the products. The more capital intensive the production is, the greater are the enterprise's possibilities to yield a profit from the extended operation hours, and also to compensate for the disadvantages that result from increased irregular working times and shift work. The process is difficult to implement because it involves quantitative changes in personnel. For this reason, overtime work is still the main measure in adapting to fluctuations in demand (Bosch 1995, 17–21). Overtime can potentially offer not only a more flexible means of extending the work period, but also a way to reduce any pressure on the employers to raise basic wage levels, since the availability of overtime work is offered as an incentive to attract and retain staff in otherwise low-paying jobs (Noon & Blyton 1997, 67). The extended operating hours are also problematic for personnel planning. Uniform working time structures fall to pieces and unified organisations are split into smaller units. It is understandable that the new, decentralised working time arrangements are often linked to new forms of teamwork.

At the turn of the 1980s and 1990s, Eriksson & Fellman (1991) conducted a research on operation times in the Finnish industrial sector. The most significant hindrance to the extension of operation times was the resistance of employees to uncomfortable working times. International research has come up with similar results (Bosch & Lehndorff 1995; Bosch 1995). However, there are plenty of unused opportunities to use capital investments more efficiently. The majority of industrial production is organised by using one dayshift five days per week, which is about 24% of possible operation time. Maximal operation time is rarely used. In 1996, 6% of the wage earners were involved in shift work on a regular basis (Työ ja työaika 1996).

The research by Repo (1996) included 20 small and medium-sized firms using overtime work to evaluate the possibilities of and hindrances to shift work arrangements. Several of the firms in this study had a need to extend operation times from one dayshift to a two-shift arrangement, but only one firm implemented the reorganisation. In this case, the implementation was successful because it used a local contract, which increased free time and hourly pay more than the collective agreement of the respective sector. In the other firms, particularly the preferences of aged workers prevented the implementation of shift work arrangements.

The innovation processes of working time depend primarily on manager-level visions on what is possible. In most cases, the idea of reducing working time is not introduced in discussion. According to Naumanen's and Silvennoinen's (1996) research, which included employer interviews, the employers support the re-distribution of working time only if it "obeys market economy principles". The interviewed employers assessed that working time reduction inevitably threatens the cost efficiency of production. Reduction of pay is an essential precondition. Recruitment and training costs, as well as other direct costs of new recruitment are central obstacles to working time reduction that increases the quantity of labour. In most cases, the employers preferred quantitative flexibility, which means adapting to the fluctuation in demand by fixed-term employment contracts.

Excursion I: Reduction of working time in Italian cotton industry

A case study report on work sharing and the reduction and reorganisation of working time at firm level (Work sharing and... 1985, 67–96) brings out experiences from previous experiments on 6-hour shift systems. In the 1970s and 1980s, Italian wool and cotton industry was especially active in innovating new working time solutions based on both reduction and reorganisation of working time. Obviously, this innovativeness was related to rapidly changing international competition situations and fruitful cooperation between labour unions and the management. In the early 1970s, Italian cotton industry faced notable problems in coping with fierce foreign competition and rising labour costs. At the same time, the introduction of synthetic fibres renewed the production process. Companies began to invest in faster, labour-saving machines, which automated and unified previous labour-intensive production procedures. In the 1970s, the Italian textile industry was modernised more rapidly than the European average. On the one hand, the cotton manufacturers' capital investment in new production equipment enabled reductions in manpower, but on the other hand, it also involved more efficient use of the plants. Company strategy demanded not only reductions in labour costs, but also a net increase in production. The innovations in shift systems solved the equation. The unions were ready to negotiate on the new working time schemes to defend existing jobs.

Until the 1970s, the predominant shift system in Italian cotton industry was three continuously rotating 8-hour shifts on five days a week (8x5x3). The

120 weekly production hours could have been increased by 20% by taking Saturday as a workday. Lengthening the workweek would have been a step backwards for the unions, which had just in the 1960s won the battle on Saturday as a rest day, and the companies were reluctant to recruit new staff since they had just invested in labour-saving machines.

The six-day production week was first introduced by using a sliding 8-hour shift system, which offered, in addition to Sunday, one rotating weekly rest day. The system was not satisfactory for the workers, who would lose the long weekend. The employers compensated for the loss by introducing a half-hour meal break for sliding shift workers. However, the meal break reduced the production hours because the machines remained idle. The employment effect of the new scheme was positive (20%), but not big enough to guarantee the existing employment level.

The solution was a reduction of working hours and an increase of shifts, the 6x6x4 shift system. The notional addition of a fourth shift demanded a notable increase in manpower (33%). The total increase in weekly production hours was 24 hours, since the workers in 6-hour shifts had no meal breaks and the machinery was not left idle at all. In practice, the employment effect was notional because the companies simply divided the existing personnel into four shifts and paid them 40-hour wages and shift work premiums for 36 hours.

The first experiments with the six-plus-six schemes were introduced in the Italian textile industry in 1965, but they did not become common until the mid-1970s. In 1979, a triennial work contract established the six-plus-six system as a norm in textile companies operating in a semi-continuous or continuous production cycle. The initiative to introduce the six-plus-six -hour system was in most cases made by the management rather than the unions. The system was presented as an alternative to wide-scale redundancies. It is no wonder that with the reduction and reorganisation of working time, the 6x6x4 shift system was in the management's favour. Coupled with the installation of new machinery, the shift system resulted in increased productivity and decreased labour costs. It also increased the value of fixed capital as a percentage of turnover.

The case study report (*Work sharing and...* 1985) summarises the results of the employee questionnaires addressed to 1 700 workers in six Italian textile companies. The aim of the study was to ascertain worker attitudes towards their working time arrangements. Most of the respondents – especially women, having experienced the 6x6x4 -hour working time – felt that the change in their working time made their working conditions less satisfactory. In general, the workers preferred a wage increase over a reduction in working time.

Excursion II: The 35-hour week of France

In France, the state has had an exceptionally active role in labour market interventions. Between 1982 and 1996, the state passed six laws dealing with working time (Boulin & Cette 1999). During the last two decades, the different governments have tried to limit the effects of unemployment. The 35-hour workweek of France is the latest significant and large-scale working time reform in Europe. As a state-driven reform, it differs from company- or industry-specific working time experiments. In the background of the reform is an ambition not only to reduce, but also to reorganise working time to facilitate the competitiveness of companies. The central aim was for the firms to make flexibilisation a key objective of working time reduction. Thus, the 35-hour week and flexibility are integrally related in recent French experience (Setti & Brosnan 2004).

The first step towards the 35-hour week was taken with the Robien law (loi Robien), passed in June 1996, which provided financial incentives to employers to pursue agreements for work sharing. In the spring of 1997, the general election resulted in a 'broad left' parliamentary majority, a coalition of the Socialist Party, Greens and Communist Party. This government set the reduction of weekly working time to 35 hours as one of its priority policies. It put the plan into practice with a law on 13 June 1998 (the first Aubry law), which reduced the "statutory length of actual work" to 35 hours per week, starting on 1 January 2000 in companies employing more than 20 people and on 1 January 2002 in companies with 20 or fewer employees. The law provided financial subventions for collective bargaining at sector and company level to introduce the 35-hour week before the above-mentioned deadlines. The firms that reached a collective agreement with trade unions before the deadline and reduced their working hours – and either hired new workers (offensive agreement) or preserved threatened jobs (defensive agreement) – were entitled to significant reductions in their social security contributions.

The second Aubry law, passed in January 2001, stipulated the new regulations of working time organisation on the basis of a 35-hour week and replaced the financial incentives of the first Aubry law (except for firms with fewer than 20 employees, who could benefit from them until 2002). Conditions regarding the number of jobs or the method of calculating working time were removed. This was the outcome of an intense battle that the employers' organisations started during the negotiations, following the first law, to redefine working time standards. In 2003, the "Fillon law" further softened the working conditions, particularly concerning annual overtime hours.

A study based on the analysis of 1232 company agreements (Thoemmes 2004) showed that the concept of 35 hours is developing in a particular direction – not towards a weekly or daily reduction in working hours, but towards a reduction in an annual timeframe. Nearly 75% of the "Aubry 2" agreements have a timeframe that is larger than a week: for 52.2% of these agreements it is annual, whereas 21.3% of the agreements adhere to a weekly model and only 5.8% to a daily model. Thus, the aim is not to increase the

workers' health, nor to extend their weekly allowance of leisure and rest. Thoemmes (2004) argues that the expression "35-hour week" has lost part of its meaning and we should use the concept "1600 hours a year" instead. Nine out of ten employees have switched to 35 hours with no loss in pay, although the analysis of agreements shows a modification in salary growth.

The impacts of the Aubry laws on employment have been estimated by using both macro- and microeconomic approaches. In short-term estimations, covering mainly pioneer firms ("Aubry I" firms), the employment effect seems to be a net job creation of about 300 000 (Askenazy 2004). A particularly noticeable effect on employment is seen in companies with less than ten employees, which had to commit to the recruitment of one new employee in order to reach the condition (10% employment increase) of state subsidies (Thoemmes 2004).

Catherine Bloch-London (2004) refers to empirical research about the 35-hour week and states that the pros and cons of the 35-hour week vary according to different occupational and hierarchical employee groups and reinforce inequality between these groups. On the one hand, the most satisfied employees are the most highly qualified employees, professionals and executives, and especially female professionals, who have a lot of autonomy in their working time and often benefit from the reductions in the form of single days off. They have more working time autonomy even if they continue to work long days. On the other hand, the most dissatisfied workers are the women workers and unskilled clerical workers who had been subject to time constraints and had had very little freedom to determine their working time. The company had defined the various methods and procedures of change, and the workers often had to reconcile with the reduction of working time in the form of annual working time. For them, the reorganisation and reduction of working time meant greater irregularity and unpredictability in working patterns. According to Bloch-London (2004), rather than the extent of working time reduction, it is the control that employees have over how their work is organised that is decisive.

4 AIMS AND METHODS

This chapter will discuss the aims and methodological choices and itemise the research questions of this study. Firstly, I will contextualise this case study research to the field of working time research and to different approaches to working time. I will emphasise the nature of time as both linear and socially constructed and gendered (Adam 1990). Therefore, both quantitative and qualitative data and methods are needed. The analysis makes use of the dominant quantitative-linear tradition, which is a kind of socio-technical approach to the research theme, and the qualitative-cyclical tradition, which emphasises the nature of (working) time as a cultural construction (see Hassard 1990). Secondly, the chapter will define the research sites and organisations and discuss the consistency of the data.

4.1 Working Time as a Research Object

As Swedish sociologist Christer Sanne (1995, 11) says, working time is like a lens between the individual and society, between micro and macro levels. What makes working time an interesting research object is that it defines other times and gives a collective rhythm for the society. Thus, working time is an intersection of the timetables of society and scheduling of different social activities¹⁴. However, it should be stressed that this is not merely due to the amount, quantity or duration of time that working time occupies.

In the empirical parts of this study, the different dimensions of working time are central research objects. We can separate three main elements of time in work organisations: the length of working time (duration), the placement of working time (timing) and the use of working time (tempo) (Hassard 1990).

¹⁴ According to Bergmann (1982), time's ordering character arises from its normative effect on the structure and coordination of behaviour. Timetables are manifestations of the normative and structural aspect of time, and correspondingly, the notion of scheduling refers to a dynamic, negotiable process of forming timetables.

Historical and empirical organisation studies show that there is a close interrelationship between these elements – changes within one are usually linked with changes in the other two (Nyland 1986; Noon & Blyton 1997; Fagan 2001) – and thus, these elements have to be evaluated simultaneously.

Productive organisations make strategic choices to adjust the demand and supply of their products or services. In this equation, operation times, opening times, delivery times and going-through times, and respectively, the elements of labour, mainly the length and placement of working time, are central variables. In this respect, the six-plus-six model is an interesting research object. The model reduces the length of working time, extends service or production hours and changes the placement of the individuals' working hours inside a 24-hour cycle. We can suppose that these production processes are also linked to employment processes.

At first, reducing the *length* of working time offers obvious positive aspects from the employee's viewpoint. Less time at work provides an opportunity to spend more time at home and take part in leisure activities. Changing the *timing* of work produces unsocial working hours. They are often beneficial from the viewpoint of company economy, but inconvenient from the viewpoint of employees, who have to cope with several overlapping time schedules that define the rhythms of social life and form the time structure of families (see Hewitt 1993). The changes in work *intensity* (tempo) are linked to the overall well-being of employees.

There are also some community-oriented ways of understanding the everyday time structures. For example, the "Time in the City" research tradition serves as a framework for understanding time at the community level and describes an approach for 'humanising' the everyday life structures in accordance with the needs of the inhabitants (Boulin & Mückenberger 1999). It emphasises that the regulation and timing of individuals' working hours structure the opening and service hours, and consequently, the overall time structure in the community.

Multiple times

One of the broad themes running through the contemporary sociology of time is related to the notion that there are many different ways of thinking about time. This theme has produced a great variety of distinguishable types of time – public and private time, women's and men's time, cyclical and linear time – to describe the plurality of time (Crow & Heath 2002). Researchers, exploring the various dimensions of time, are expected to draw attention to the methodological strategies they adopt. For example, Adam (1990, 94–96) criticises time-budget studies, psychological perception studies and many sociological organisation studies for their one-dimensional approach to time and argues that these studies commonly deal with just clock time, irrespective of their focus – whether or not the study is about how clock time is experienced, structured, passed, rationed or allocated. Thus, the analyses of time restricted to the quantitative-numeral level are too myopic and do not consider that all time

quanta are not equal in quality (Hörning et al. 1995; see also Gershuny & Sullivan 1998).

In addition to the linear-quantitative approach, time can also be understood as socially constructed – a collective phenomenon deriving from social life – and gendered (Davies 1989; Fagan 2001). Durkheim and the French school of anthropology showed that we tend to associate qualitative meanings with different time units. Social time also includes quantitative aspects, but it is not – as linear time – purely quantitative, homogenous or exactly measurable. Social time is not linearly incessant; it is divided into periods with meaningful and important reference points (Sorokin & Merton 1937). Thus, the notion ‘qualitative’ refers to various meanings that we give for different time units. These qualities are based on shared beliefs and customs and they reveal the temporal rhythm of the society in question. One of the classic examples of people’s qualitative experience of time is the cultural differentiation of the days of the week. The quality of social interaction varies considerably between ordinary workdays and the weekend. The distinctive qualities of single days are functions of their temporal location in a seven-day circle (Zerubavel 1985).

Time-wage relationship

The time-wage relationship is critical for understanding the temporal structure of a working day (Fagan 2001). The focal question is the contractual boundaries of time and wage. For some occupational groups, such as blue-collar workers, or jobs, the amount of exchanged time can be explicitly defined, whereas for others, such as people in professional or managerial positions, the time-money exchange is often hidden and the time boundaries are more ambiguous (Kalleberg & Epstein 2001; Perlow 1998; Yakura 2001). Most of the participants, both in the industrial and municipal sector, had a rather explicit time-money exchange relationship. They knew what they would get in exchange of shorter working hours. For them, the demarcation between work and non-work, or between public and private time was rather sharp. Most of the participating employees also tended to have less control over their working time. Professional commitments, ethical codes and occupational roles are associated with a different approach to time at work (see Moore 1963; Zerubavel 1979; 1981; Bergmann 1982; Närvänen 1994; Yakura 2001). This will be discussed more broadly later, especially in context of the municipal work organisations that included white-collar workers.

The personification of work tasks is a key factor in reducing the possibilities for work reorganisation. Preliminary research in the municipal sector, conducted before the actual experiments, showed that there is a strong relationship between the readiness for work sharing and the household economic situation. However, professional commitment to work and the perception of being irreplaceable are nearly as powerful factors in decreasing the readiness for work sharing (Anttila 1997). The personification of tasks is related to the increasing knowledge intensity of work. It has been suggested that the governance of working time in knowledge or expertise work is

becoming more difficult because the high-level challenge, infinitude of work, enthusiasm and commitment to work will obscure the limits of work and other life spheres. The jobs in which the experiments were mostly implemented were not especially knowledge intensive. Thus, this study discusses working time reduction and reorganisation in organisations that are dealing with traditional production problems and traditional employment relationships, with quite clear time-wage exchange relationships.

4.2 The Aims of the Study

4.2.1 Organisations

The implementation of the 6-hour shifts in private sector industrial establishments and public sector social and health care organisations is described in Chapters 5 and 6. Each experiment is presented as a separate case. The cases are used to supply an analysed description of a historically specific research object. In addition, the cases are a relevant way to shed light on the socio-technical conditions and local negotiation processes of the experiments.

The case studies are primarily based on interview data. A major advantage of the qualitative approach is that it can bring into focus the complex relationship between the duration, timing and tempo of work and the qualities of different times: why the two hours are not two hours? Qualitative data can inform us about implementation, negotiation and interpretation, as they appear to the actors of the experiments.

In practice, the research process in the organisation level progressed according to qualitative case study research. The gathering, evaluation and interpretation of data overlapped (Ragin 1989). I analysed the interview and other data by re-reading and re-analysing it in order to find regularity, as well as variation in the informants' interpretations (Straus & Corbin 1990). Naturally, during the four-year data collection period, this led to re-selections and re-formulations of conceptions relating to the phenomenon under study.

I will examine and compare the experiments with the six-plus-six -hour model in private companies and social and health care organisations with the following aspects in mind:

- background and aims of experiments
- conditions and implementation of experiments (wage compensation)
- negotiation processes
- changes in working and operation times
- effects on employment, role of new workers (substitutes)
- changes in the organisation of work
- effects on work productivity

I will describe how the three elements – time, timing and tempo of working time – were reorganised and combined in the case organisations. Naturally, these changes have an effect on working, operations and service hours. I will evaluate the background, conditions and implementation of experiments in relation to the aims and strategies of companies and municipal organisations and discuss employee preferences and power relations in negotiation processes (see Strauss 1978).

The method of analysis and style of this research is comparative. The contrasts achieved through the comparisons are helpful when analysing diversity and order. For example, in the experiments with private companies, it was possible to compare different economical situations: is the model equally applicable in a good economic situation and during an economic recession? Comparing the experiments in the industrial companies with those in public health and social care confirms the complex relationships between the conditions that affect the realisation of 6-hour shifts.

What happens when a model introduced in the industrial sector is utilised in municipal organisations battling with reduced resources? Furthermore, the different models that the municipalities used to reduce working hours provided an excellent opportunity to compare their influence on the employees' everyday life and the work organisation as a whole. What did the employees think about an entire week off, when compared to 6-hour shifts?

As mentioned in Chapter 1, the research setting and methodological choices were originally made by our research team and the follow-up group, consisting of representatives from labour market organisations and the Ministry of Labour. It was obvious that the research questions were related to different phenomena and entailed different research methods. As a result, the research applied methodological triangulation in solving the research questions.

4.2.2 Industrial companies

The fieldwork of the study started in 1995. The planned cooperation with new pilot companies was cancelled, mainly due to changes in the economic situation of the experimenting companies. Erkki Hiltunen, a building company from Helsinki, cancelled the experiment a month after the project had started because of decreased demand. Orthex had the same reason for cancelling in the autumn of 1995. The City of Helsinki gave up the experiment in 1996, after having planned it for two years.

The original goal of implementing a classical experimental method turned out to be impossible. The planned research set-up would have enabled us to evaluate the effect of the new working time model by using experimental and control units, as well as exact and systematic measurements before and during the experiments. After this unsuccessful attempt, I got in touch with all the companies that I knew had used 6-hour shifts, and they were all interested in being research subjects.

Three out of the twelve experiments were so small or short-lived that I did not write a comprehensive description of them. However, they provided many

interesting details on the implementation and outcomes of the 6-hour shifts. A printing shop in Nyköping, Sweden (AWJ Kunskapsföretaget) can be counted as one of these enterprises. Its experiences from a decade of 6-hour shift work were very similar to the Finnish experiences.

In the industrial companies, I interviewed the management, shop stewards, as well as some of the workers (33 in all). From the first four companies, research material was also collected through questionnaires filled in by the employees (n=117). Due to the small number of respondents and low response rates (52% in average), I used this data as background information.

The interviews were carried out according to a thematic framework, but the interviewees were also given a lot of space and chances to get off the subject and discuss issues that were not directly related to the themes. The thematic frameworks were different for the different personnel groups. In the employer interviews, I concentrated on the economical effects and implementation of the experiment as part of the company's strategy. In the employee interviews, the focus was on the changes that shorter working hours and shift work caused at work, and on how it reshaped the employees' daily time structures outside of work. The interviews were recorded and later transcribed.

The significance of the publicity that the working time model had received became apparent during the study. A collective narrative, born from the publicity and reiteration of the theme, was visible in the interview material, which included numerous references to the opinions and statements of 'other people'. The employers often told about the employees' attitudes and viewpoints, and vice versa. Many of the interviewees had been interviewed by newspapers and some had given statements for the radio and television. The answers concerning the working time model were very structured and confident. Almost all the employers and elected representatives of the workers had also given presentations about the 6-hour model in various seminars and meetings. The interviewed persons were experts of the six-plus-six model, which had freed them of uncertainty and made their stories confident and unambiguous.

In addition to the interview data, I gathered company-specific data on the productivity of work, employment costs, factors relating to the quality of products and absenteeism¹⁵. However, abandoning the original classical experimental method, including measurements before and after the intervention, meant that this data is not complete and comparable. I had to use existing and available production and personnel reports. The overall difficulty of evaluating productivity and employment is discussed widely in Chapter 5.3. I do not aim to provide exact productivity or employment effects of the shorter working hours. Instead, I wish to describe the *processes* by which the reduction and reorganisation of working time, in these specific organisations and

¹⁵ In 1997, the research project arranged a seminar on 6-hour shift schedules. Representatives of most firms taking part in the research project participated in the seminar. The seminar enabled us to compare working time schedules, the development of work productivity and wages, as well as the pros and cons of the arrangements to both employers and employees.

situations, caused changes in employment and production systems. Thus, the research approach is probabilistic rather than deterministic (Liebersson 1992).

4.2.3 Municipal organisations participating in the research

In 1996, I started the follow-up period of municipal working time experiments. I hoped that the experiments would have been carried out in large, homogenous work environments who had experimented with the 6-hour schemes. However, since the policy group on working time in the Ministry of Labour gave the municipalities the opportunity to implement the experiments with different forms of reduced working time, the work units started to apply the 30-hour week in numerous ways. Shortly afterwards, I noticed that longer continuous blocks of free time were more tempting than shorter workdays. I also noticed that, surprisingly, the new situation was very productive. I could now compare the implementation and results of different forms of working time reduction.

The municipal experiments were also characterised by continuous change. The first experiments started in September 1996 and the last ones in the autumn of 1997. Some municipalities cancelled the negotiations between the employer and employees, without results, and new municipalities were selected to substitute them. Large homogenous groups were involved only in a few cases. In practice, the units whose members were discontent with the conditions of the experiment opted out, and we formed new experimenting units out of the individual workers who were willing to participate. Eventually, the research was conducted in 14 municipalities and dozens of work environments, which complicated and retarded the gathering of data.

TABLE 3 Planned and realised research set-up

Planned research set-up	Realised set-up
Large, uniform experimental working environments	Great variety of small and separated working environments
Uniform form of working time reduction (6-hour shifts)	Various forms of working time reduction, even in the same workplace
Uniform conditions for the experimenters and substitutes	Range of different practices concerning the terms and conditions of employment

4.3 Reduced Working Hours at the Individual Level

The second cluster of research questions was related to the implications of working time reduction on individual level (Chapter 7). The underlying question is whether working time reduction still meets the traditional requirements concerning the well-being of employees and well-balanced work and leisure time. The experiments in the public sector offered an opportunity to compare the effects of the different forms (daily, weekly or monthly) of working time reduction. The analysis concentrates on three subject areas. The

first one discusses the perceived health effects of shorter working hours, the second one is related to the questions of work and family interaction and the third one covers the questions of leisure and the dilemma of the two extra hours. These analyses combine both quantitative and qualitative data and research methods.

Quantitative analysis on the effects of working time experiments was carried out in a somewhat exceptional social-scientific setting, i.e. using experimental and control groups in ESF municipalities. Statistical analyses (repeated measures analysis of variance) were performed to compare the situation before and after the reduction of working time (time effect) and to look at the differences between the experimental and control groups (group effect). Possible interaction between the time and group effect would indicate that the changes over time are different in the experimental and control groups¹⁶.

Questionnaires and interviews

The analysis of the municipal sector is based on two kinds of data. A total of 116 employees participated in the experiments (Appendix 1) in the three ESF municipalities. Furthermore, a control group (n=110) consisting of employees who worked a standard 8-hour day was chosen from the same occupational sections. The experiences of these employees were collected through three-phased questionnaires, interviews and numerous seminars and discussions. Two to three employees and one substitute were usually interviewed per work unit.

The three-phased questionnaires were used to gather quantitative data in the ESF municipalities through. Data collection began with the first questionnaire before the experiments started. Altogether, 110 experimental and 101 control group participants responded to the first questionnaire. Data gathering was repeated after about six months with a follow-up questionnaire, which was responded to by 99 experimental and 96 control participants. The two-phased panel data included 92 experimental and 71 control group participants.

After about 18 months, the third questionnaire was collected in the three ESF municipalities. In this phase, 86 experimental and 84 control participants responded to the questionnaire. The three-phased panel data included 75

¹⁶ The classical research series implemented in the Western Electric's Hawthorn factories in 1927-1932 showed the significance of the experimental research situation in social sciences. In these experiments, researchers from the School of Scientific Management tried to find causal relationships between the changes in work environment and productivity. The research included, for instance, experiments on the impacts of changing lighting or optimal pauses on work productivity. The researchers noticed that the raised productivity of the experimental group did not depend on the changes in work environment, but rather on the reshaping of social interaction because the group members became acquainted with each other in a situation in which they were under special observation (Mayo 1945).

experimental and 42 control group participants. Thus, 117 respondents in all completed all three questionnaires.

The qualitative data consisted of 44 interviews carried out in 1997. The respondents were employees working 6-hour shifts in the three ESF municipalities. The interviews were carried out using a loose thematic structure that investigated the changing organisation of work and the experiment's effect on the private life of the participants. The qualitative data was necessary, particularly to illustrate the temporal organisation and social construction of time in organisations. The interviews lasted about one hour and they were recorded and later transcribed.

Parallel to the three municipalities selected for the ESF project, data was also obtained with a two-phased questionnaire (panel data without control groups) in other municipalities that were implementing working time experiments. The evaluation covered 14 municipalities, in which 653 persons responded to the first questionnaire, with a response rate of 76%. About six months later, 602 employees completed the follow-up questionnaire, producing a response rate of 70%. The panel data of this two-phased inquiry included 475 respondents (i.e. respondents that answered both questionnaires, see Appendix 2 and Appendix 10).

To analyse the effects of the different ways of reducing working hours (6-hour shift, day off, week off), a panel data set covering the people who responded to the first and second questionnaires in the three ESF municipalities and 14 other municipalities was used. This two-phased panel data set included 567 respondents.

Characteristics of the respondents in the employee questionnaires

According to the questionnaire data (of all 17 municipalities), the experiments concentrated on the sectors of health and social services, although other areas of local authorities were also involved (administrative, library, technical and legal services). Typical units were dental care, child day care, home care and physiotherapy; in other words, fields where longer opening hours are sensible. The main occupational groups were trained home-helpers (23%), assistant nurses (7%), kindergarten teachers (7%), dental care professionals (6%), clerical staff (5%), public-health nurses (4%) and kindergarten assistants (4%).

Almost all participants (94%) were women and their average age was 43 years, which corresponds accurately to the average age of employees in the municipal sector. In addition, most of the participants (71%) were lower-level white-collar employees. Consequently, blue-collar workers and upper-level white-collar employees were slightly underrepresented when compared to the whole municipal sector (Anttila & Tyrväinen 1999).

Three of the study groups (ESF experimenters, control group and the other experimenters) corresponded to each other based on their background characteristics, such as age, education, household and employment (Appendix 3). However, it is noteworthy that in the control group, nearly a fifth had a fixed-term contract, while it was not common in the two other groups.

5 SIX-HOUR SHIFTS IN MANUFACTURING FIRMS

In this chapter, I will describe the implementation of the different forms of 6-hour shifts in Finnish manufacturing and process industry companies. The descriptions deal with the production preconditions, negotiation processes, implementation and production outcomes of these working time arrangements. Production preconditions refer to the market situation and the firms' strategies related to it. These strategies can be offensive or defensive, depending on whether the company is trying to adapt its production to a growing or declining product demand. Next, the working time experiments in manufacturing firms are divided into two groups, according to their strategic aims. Some companies implemented working time reduction as a defensive strategy to avoid lay-offs, while others targeted economically profitable solutions when adapting to the fluctuations in demand.

The descriptions of negotiation processes and practical implementation of working time reorganisation illustrate the reshaping of the relations between working time schedules, working time intensity and time-money exchange. The production outcomes of the experiments and the employment and productivity effects are interrelated, and therefore, evaluated together.

5.1 Offensive Strategies for Better Adjustment of Production and Demand in Piecework Production

5.1.1 Case Essilor: Pioneering the six-plus-six -hour model

I will start with a description of the working time arrangement of Essilor, based on 6-hour shifts. This was a pioneer case that got a lot of publicity in the mid-1990s. The management and employees of the company showed that it was possible to combine flexibility and reduction of working time in a way that improves the company's competitiveness. The positive employment effect obtained by cutting overtime work was of particular interest to the media. This

experiment has also been the object of other studies. The research group from the Institute of Occupational Health evaluated, with interviews and employee questionnaires, the pros and cons of 6-hour shifts from the perspective of employees. The research report evaluated the effects of the new working time models, namely the compressed workweek (12-hour shifts) and 6-hour shifts (Kandolin & Lahti & Kauppinen 1995; Kandolin & Mattila & Kauppinen 1997).

GWB Essilor is a subsidiary of Essilor International S.A., producing lenses for spectacles. The grinder room of this company switched from an 8-hour daily working time to a six-plus-six –hour schedule at the beginning of 1994. The company had recently introduced a new product innovation, which increased its market share from 20% to about 30%. The increase in production volume was achieved by reorganisation of work and new recruitment in other parts of the production process; however, the grinding of lenses gradually became a production bottleneck.

The production process of the grindery requires a 7-employee team for smooth operation. An essential precondition is that every machine in the production line has a worker and that the workers in the team take their breaks at the same time. One added worker increases the production volume to some extent, but based on management experience, adding several workers to the team will not produce the desired growth in volume. In other words, a permanent increase in demand requires reorganisation of working time (shift work) – or if this is not possible – investments in parallel production lines.

Essilor's affiliated companies in Europe use different forms of 8-hour shift work in lens production. Especially in lens coating units, shift work arrangements are common due to expensive production machines and high capital costs.

Due to the problems in the grinding process in 1993, both management and employees noticed, after large-scale overtime work, that the production hours were too short.

“Well, we had a situation that we did an awful lot of overtime work and people got very tired of this work. I said that it is not going to work because I have a family, I can't be here every evening overworking. And anyway, there should be a certain amount of people working, it won't get on otherwise. Then we started to plan with management, also they started thinking about it (...) I can't even think about doing shift work, particularly not 8-hour shifts” (Female worker).

“But we thought that it will last so late in the evening, the later shift starts at two, and goes on so late. Nobody was really excited about it. Well, we proposed that why not work a shorter day and they don't need to pay any compensation”.

The proposal for experimenting with 6-hour shifts was introduced in negotiations between the management and workers. Employee interviews revealed that the employees were strongly against continuing overtime work, and against shift work with 8-hour shifts as well. From the employer's perspective, the shift to 16-hour production time would have meant overcapacity, bonuses for shift work, and because of these factors, increased production costs per unit. The introduction of a new production unit or

production line, including high investments on new machinery, was too expensive an option.

"We did, quite long, probably half a year if not longer (...) about 12-hour working day all the time and also longer days (...) Well, we did that for a while. And, of course we got compensation, but we could not go on any longer. As time went on, it started to be hard and the efficiency, it was not really (...) you did it, long day after the other, and in the end it was not energetic work any more (...) And then they said that the company is not ready to provide more machines – if we would have done day shifts, then we would have needed more machines, of course also more people. But machines would have cost and then, if we would not need them after half a year, they would be useless then." (Male worker)

A production time of 12 hours and a corresponding production volume was estimated to be optimal. Thus, the usability of 6-hour shifts and the production volume were related to the volume of demand. In the case of lowering demand, the 12-hour production time would have led to over-capacity. During a standard 8-hour shift, approximately 380 lenses could be produced. In a 12-hour period, the potential production volume was about 600 lenses.

According to the manager's estimation, the company can make use of 80% of the potential full production capacity (maximal use of workforce and machinery) annually. In the winter season, 90% of the full capacity was used, but in the summer, the utilisation rate was only 40%. As a result, one 8-hour shift was used during the summer holiday season. To cover for the absent workers, for example in the case of sick leaves, the teams used 12-hour shifts. A worker in another 6-hour shift would work two consecutive shifts.

In January 1994, Essilor launched an experiment with 6-hour shifts. To form the second shift, the company recruited four employees to work for six hours. Previously, the company had hired three employees to raise the production volume. The new employees had fixed-term work contracts. The Management achieved its long-term goal of forming self-regulating teams, along with a new working time model. The tasks related to the supervision and control of working time were delegated to the production teams. The company also emphasised operational flexibility, for example in the form of task rotation.

"It is an important point that when overtime work is done, it usually means that there is a couple of days work buffered, and then if we don't have this kind of buffer and the flow of products goes well, so in a way the delivery will be better." (CEO, Essilor)

The implementation of the six-plus-six –hour model was significantly dependent on the nature of the production process in the grinding unit and the need to optimise the production hours to meet cyclical demand.

Evaluation of efficiency was carried out by comparing the number of ground lenses per worked hour in 8-hour and 12-hour production systems. However, the 12-hour production time enables a level of supply that does not have a corresponding demand. In the planning phase, the management's criterion for the implementation of shorter working hours was to keep up the standard of unit production costs. The management followed the costs of lens

grinding every six months. The average production cost of one lens decreased by 17% from 1993 to 1995. This was achieved, first of all, by better utilisation of capital investments, which compensated for the increased cost of labour per produced unit, and secondly, by the decline in expensive overtime work. In 1993, the grinding room operated with the 8-hour day shift system and overtime. The six-plus-six system was introduced at the beginning of 1994, and the system was well established in 1995.

The new working time arrangement did not have a significant effect on quality. According to employee interviews, the effect of the length of working time on quality was twofold. On the one hand, the quality improved because attentiveness remained at a high level. On the other hand, employees perceived their work to be more hectic than in the 8-hour shift. The prolonged production hours kept the production process from piling up and decreased delivery times, which resulted in competitive benefits. Production peaks in the weekly production cycle are concentrated in the first days of the week because most of the opticians' orders are made on Saturdays and received on Mondays. Grinding is the first phase of production and it takes approximately 1.5 hours.

The management mentioned social separation of the teams working in 6-hour shifts as a problem. The separation was a natural outcome of differentiated working times. The workers in 6-hour shifts met the other workers only during lunch breaks. The management responded to the situation by introducing weekly meetings for all employees of the company and by making the flow of information more effective. The 6-hour shift included a 20-minute break, and thus, the efficient daily working time was 5 hours and 40 minutes. The employees who were working 8-hour shifts had a 30-minute lunch break and two 15-minute coffee breaks.

5.1.2 Case Orthex: 6-hour shifts for quality reasons

Another pioneer experiment in 6-hour shifts was Orthex, which produces plastic household products. The 6-hour working day was introduced in this company already in 1987 because of a local shortage of industrial workers, who had moved from the low-paying chemical industry to the well-paid forest and metal industries. The company made a tempting offer by changing the 8-hour, three-shift schedule (8+8+8) into a 6-hour, four-shift schedule (6+6+6+6) – with full wage compensation. At the time of the case study research, the model had been functioning for eight years, and the schedule co-existed along with other working time arrangements, although there was no longer a shortage of labour in the 1990s. In this 4x6 -hour working time model, eight people worked side by side with people who followed the 8-hour, three-shift schedule. Work consisted of collecting products from the production line and checking the quality of the products. The tempo of work was mainly machine determined.

Working time reduction was adapted to the needs of 24-hour production by forming teams out of the worker groups who worked discontinuous three-shift work. The employer proposed a working time reduction with full wage compensation. The employees were very distrustful regarding the development

of their wages, although, according to the chief shop steward, the wages remained precisely at the same level as in 8-hour shifts. In the late 1980s, 20 employees worked in 6-hour shifts. During the 1990s, the number of short-timers decreased because the teams were dismantled and it turned out to be difficult to collect new teams.

All employees in the 6-hour shifts were women. The working time model was running five days a week in a production department where machines compress plastic products and workers collect the articles from the line, check them and send them further to be packed. The work was physically straining at times, depending on the weight of the articles.

The primary aim of the 6-hour shifts was high product quality. Work in plastic production is monotonous and physically demanding. According to technical management, employees are more attentive in 6-hour than in 8-hour shifts. Measuring the profitability of the quality factor was complicated by the fact that it cannot be directly reduced to working hours or money. Furthermore, a precondition for the implementation of the 6-hour working day was market demand, especially for quality, and the possibility to profit sufficiently from the quality factors.

It is worth noticing here that the model could not be based on the productivity of capital because the machines work at all hours in any case. In addition to this, the 4x6 -hour working time model can only be based on the productivity of labour to a limited extent because the machines determine the efficiency of work. The productivity of labour was associated with reductions in rest periods and improved quality. Employees working six hours per day had given up their extra holidays (*Pekkas-days*, 100 hours/year), which belonged to the 8-hour workers. The 6-hour workers did not have paid lunchtime (30 min/day for workers in the 8-hour shift) or coffee breaks (two coffee breaks for workers in the 8-hour shift).

However, wage compensation for the 6-hour workers was well argued by the management. When compared to the 8-hour shift, work productivity in the shorter shifts was higher because the 6-hour shifts did not include any official breaks. The 8-hour shift was actually shortened by three 10-minute breaks and statutory days off, and consequently, the efficient working time was only 6 hours and 55 minutes per shift. The 6-hour shifts included one 10-minute break. In calculations, in order to be economically profitable for the firm, the quality improvement in the shorter working time should cover about a one-hour deficit in working time. The management assessed that substituting the extra days off with overtime work in the 8-hour system increased the costs to some extent.

According to the production manager, differentiating the 6-hour workers' working time from the other workers' time in the company caused problems in controlling operations. The interviewed employees did not perceive the differentiation to be a problem. However, this involved improved reporting and task direction.

Despite of incessant work, the interviewed employees perceived that they managed the monotonous and intensive work better than in the 8-hour shifts. The employees and the work process had adapted to two parallel shift systems.

The 6-hour workers who had difficulties with the four-shift system, for example due to free time activities, were able to change to other working time systems.

5.1.3 Case Wallas-Marin: Working time reduction without employment effects

The third case example of offensive reduction and reorganisation of working time was the experiment of Wallas-Marin, which produces heating devices for boats. The six-plus-six working time model was given a three-month trial period in the assembly department of the company in the spring of 1995. The aim of the experiment was to shorten delivery times and avoid excessive overtime. The reorganisation minimised the excessive accumulation of work on certain machines, thereby notably shortening the average going-through time of a heating device. The experiment did not cause extra expenses for the employer because new workers were not recruited and base salaries remained unchanged.

The demand for products was very cyclical. The peak season was at the beginning of the boating season. In the winter, the demand decreased significantly and the company even had to use two-month temporary lay-offs during the winters 1990–1994.

The experiment was implemented on the CEO's initiative. The CEO and production manager had planned shift work arrangements that would potentially decrease the delivery times during peak seasons. The short-term experiment with 6-hour shifts started in the spring of 1995, due to increased demand and lengthened delivery times. Previously, the company had used overtime work arrangements to cover the increased production volume. The experiment included the metal and assembly lines, altogether 16 employees.

“Well, to start with, the first time this was introduced, the workers were terribly careful, it was a bit like, how to put it, they were suspicious of it, the feeling was that they were suspecting that it is not all in the open here. When we were in touch with Orthex, where this was already implemented and where they had experience, and put down on the paper what all this means, then it disappeared, the suspicion.”
(CEO)

Keeping the wage standard unchanged was an absolute precondition for the implementation of the experiment. In fact, the reduction of wages was not even negotiated.

“It is, I'd say, it is quite difficult that you would expect a compensation that would compensate the loss of salary (...) this was here now the 'carrot', this eight hours pay for six hours work (...) it is probably quite difficult, I don't think anyone is going to cut back their own salary.” (Shop steward)

Changes in the production process

The production process was renewed in the assembly line so that one device under construction went through the line at a time. The next work shift

continued the assembly from where the earlier shift had left it. Although this arrangement required resources for multiskilling, the management regarded it as a positive outcome of the experiment. A production manager assessed that the experiment increased some of the supervision problems. Changing shifts involved a 10–15-minute reporting time and supervision tasks were sometimes transferred to production managers because some of the shifts operated without foremen.

The management set a goal of 25% productivity growth, which was fairly high in a situation in which the total working hours were decreased by one fourth (no recruitment) and overtime work was cut down for cost reasons. The management estimated that a 20% increase of hourly productivity would compensate for the costs of reduced working time if overtime work was avoided. According to the production manager's calculations, the average production time of one device decreased from 5.5 hours to 4.5 hours. The following production figures are based on the production manager's statistics from the experimental period in 1995 and from a corresponding period in 1994, which was also a reference period during the planning phase of the experiment. During the 12-week experiment, the organisation produced 8% less devices than in 1994. According to the production manager, they did not reach the targeted amount of production due to the large amount of time spent on training employees for new tasks during the experiment's first month. Nevertheless, the production cost per device decreased by 4 – 5%, depending on the device in question, because of increased productivity of work and significantly (80%) reduced overtime.

The increased work productivity was not sufficient to maintain production volume. The reduced production cost per unit indicates that the production unit was making a profit, but we do not know how the decreased production volume affected the company's competitiveness in the market.

Workers perceived the reorganised production process to be more flexible because there was less accumulation of work at the machines. The experiment was cancelled after the summer holidays. According to the production manager, there was no need to continue the experiments because of the changed demand situation. After the cancellation, the employees were disappointed. There was probably no mutual understanding on the fact that working time experiments can be used to adjust production to seasonal fluctuations in demand. The employees considered and expected the 6-hour working day to be a long-standing working time arrangement.

5.1.4 Case Nokian Tyres: Working time reduction and team work

Nokian Tyres produces tyres for cars and large vehicles. In 1995, the demand for the company's products increased rapidly and a decision was made to intensify primary production (i.e. mixed rubber production). The increased demand involved changes in the primary production department – making the production process more flexible in order to meet the other departments' needs for raw materials and adapt the capacity of the machinery to a lively market

situation. In the primary production department, an old rubber-mixing machine, which had been unused for years, was put into use again. The 6-hour working time experiment started with this machine. The operation of the machine required four workers per shift. At the beginning of the experiment (February 1996), one 6-hour shift (with four workers) was used, but after three months, the experiment was expanded into a six-plus-six -hour schedule (8 workers), and in August 1995, to a 6+6+6 -hour schedule (12 workers). At the beginning of 1996, the number of 6-hour shifts was reduced to two because of decreased demand for mixed rubber.

The idea of 6-hour shifts came from the managing director, who had read about the 6-hour working time in a journal. The original attempt to reduce working time in another department, even with full wage compensation, had been rejected by the workers, who had been suspicious of the employer's intentions. The chief shop steward assessed that the negotiations flopped because of poor publicity, and partly because the employees worked in a continuous three-shift pattern and felt that the equalisation system (*Pekkas-days*) of working time, offering entire days off, was threatened.

The experiment with the rubber-mixing machine aroused suspicions as well. The head of the factory emphasised the meaning of trust between the employer and employees as a background factor for successful negotiations.

"The experiment cannot be introduced unless the negotiating partners trust each other, if they don't have trust, this cannot be successful because you would have opportunity, from both partners' side, to bully the other partner. Workers can say that 'yes, let's try', but then actually won't. This is a good way to avoid two hours work. And it is possible. If the boys would like to do so, that would be possible. That's fine. On the other hand, I could do so that 'okay, now that you do this work in 6-hour shifts, let's return to eight hours, to 125% contract or reduce it by 25% because you are in 6-hour shifts and you have two hours free time'. Altogether, we have to have such good relationships that we can agree that we don't do something like this." (Head of the factory)

"At least I see it that the significance of trust is very important. That we trust what the employer does, which guarantees the trust, that both sides have the opportunity to resign (from the experiment)." (Employee in experiment)

Full wage compensation was a precondition for the agreement and by preserving collectively agreed days off (*Pekkas-days*), the employer made the start of the experiment possible. Another precondition was the possibility to break off the agreement immediately. In other words, the employer made substantial concessions to the employees during the negotiations to get the 6-hour system running. A human resource manager told that management made comprehensive calculations on the profitability of the new working time system, considering the different conditions of the agreement, but in the actual decision-making process the management was just marketing the idea. The proposal for 6-hour working time was met with fierce opposition.

"The wage level has to be maintained (...) the reduction in wages in a situation like this, that these days people do overtime to keep up the wage level they have had,

particularly the net wages (...), so I see it as utopian thinking , if this matter is pushed through, so with reduced wages." (Employee)

In the negotiations, the employees got the task-specific eight hours pay and extra bonuses, as defined in collective agreement. The regular weekly working time was 30 hours. The terms of overtime work were not changed; for an 8-hour day, the workers got 10 hours pay. There were no breaks in a 6-hour day, but the teams could arrange breaks by internal agreements, without bringing the process to a halt.

Because the breaks are cut off in 6-hour working time, the production process is continuous. In practice, effective working time in a 6-hour shift is almost as long as in an 8-hour shift. Production management estimates that the idle time around official breaks (e.g. around a coffee break) in 8-hour shifts could be as long as the break itself. The change from 8-hour to 6-hour individual working time is, therefore, very concrete: the total working hours per year per employee were reduced from 1 724 hours to 1 358 hours.

"The fact that our contracts, however measured with clock and practised many times, we could not measure everything so carefully that there is no idle time. And if we think that a lunch break is 30 minutes. It is paid working time. And the, we pay for 15 minutes coffee break in the morning and 15 minutes in the afternoon, all this means about one hour. And further, if we calculate the time of running the machine down and up again, and then when leaving to lunch break (...) in addition to the legal breaks, we are almost pushing another hour. This hour could be easily covered when the team itself can define how they do it. The ball is in their court now. If you can arrange a break, it is just fine, but the machine cannot stop." (Head of the factory)

The aim of the 6-hour experiment was to increase the volume of production and at the same decrease the (labour) costs of production. Production management made calculations and estimated that the costs per unit would decrease because of the intensified tempo of production. The targeted production volume per hour of work was estimated to be higher in 6-hour working time than in the traditional 8-hour working time. The volume of production per one 6-hour shift was at the same level as the volume of production per one 8-hour shift (on the average, in 1994). The increased productivity of labour in the 6-hour working time model was based on the lack of breaks in the 6-hour shift, but the management also emphasised the emotional commitment to work as a significant factor of productivity.

Experiment with the calendering machine

Because of the positive results of the rubber mixing machine experiment, production management decided to start a new six-plus-six –hour experiment in the same department (with the calendering machine) at the beginning of 1996. In 1995, nine employees worked one 8-hour shift on six days per week. In 1995, the workers in the calendering machine were doing maximal amounts of overtime. The management assessed that lively demand would continue in the future and decided to propose a reorganisation of working times by the six-

plus-six model. Another option was dayshifts on seven days a week. The employer offered 6-hour working time without extra days off (*Pekkas-days*) or shift work bonuses. The workers unanimously decided to shift to the six-plus-six model.

When the experiment started, three new people were recruited. From the very beginning, the production costs per unit were closely monitored. The production costs were somewhat (1 – 2%) higher than during a corresponding period in 1995. This was partly due to the increased price of electricity at the beginning of 1996.

The interviewed managers emphasised that the removal of collectively agreed days off (*Pekkas-days*) made production control easier. These days off were an unsuitable form of working time reduction because of poor productivity gains and because they required an awkward substitute system. Furthermore, the organisation of work became easier because it lessened the employees' need to apply for free time when going on errands. Along with the redefinition of the contracts, the pay system was renewed. It changed from a fixed hourly pay to a system that consisted of a fixed portion (70%) and a portion that varied according to the productivity, quality and volume of production.

Individual working time was more tightly bound to the team's working time and the pay system was renewed by shifting from individual contracts to team contracts. This meant that the production process was reorganised, together with numerous changes, to be more team oriented. Time autonomy was also more team specific.

It is understandable that the negotiation process of the 6-hour workday was difficult. The negotiations not only redefined the time-money exchange, but also the time autonomy, whereby individual time autonomy was turned over to team control. The increased autonomy of teams did not necessarily mean increased individual autonomy, but instead, an intensification of time control.

It is common in process industry that the production machine limits the possibilities for productivity growth. In the case of the Nokian Tyres experiments, machine capacity did not entirely define productivity. The experiment intensified work processes that were previously rationalised and measured with accurate methods. However, the management cannot estimate the effects of work intensification beforehand, during planning.

"Yes, I have been criticised, not my superior, but other upper persons have wondered that am I insane when I even talk about and try it, that can't I see the threats? And many have pointed out calculations that there are no possibilities to succeed (...) this is not a thing you can prove with calculations. Nobody will believe you. There are always objections, as valid as yours, that these times are measured with clocks, that it is purely impossible." (Head of the factory)

The Nokian Tyres case was an example of wide reorganisation of work, together with working time reduction. The results indicated that there is a lot of buffered

time in the process. As mentioned before, the work process includes idle time, however Taylorised or rationalised with socio-technical instruments it is.

The experiment of 6-hour shifts in Nokian Tyres was one of the experiments that targeted a more flexible production process. The experiment was in line with company strategy to innovate new flexible solutions and increase teamwork and multi-skilling among the employees. There were economic grounds for the 6-hour shifts in a new demand situation, but also grounds as a human resource development project. The reason for the implementation of this experiment was the management's innovative attitude towards new experiments that could potentially reshape the work process.

5.1.5 Case Imatra Steel Billnäs: Improving the material flow in production

Imatra Steel Billnäs is a metal industry company that manufactures suspension components for cars and heavy-duty vehicles. Of the company's production, 85% is exported. At the time of the fieldwork of this study, the company's main competition strategy was to shorten delivery times. The company's remote location from the European main market area undermined its position in this respect. The normal buffer of orders in hand was only 3–5 days and large-scale stores could no longer be used. Thus, the company's competition strategy was to direct the production process towards a typical Just-In-Time production system. An important reform to support this goal was launched in 1996, when the company adopted a programme that extended employee participation in the development of operations.

Accompanied with the aforementioned project and new company culture, three production lines launched the experiment with 6-hour shifts in 1996. The aim of the changed working and operation times was to reduce high absenteeism and raise production volume. In 1997, the experiment was expanded to new production lines and altogether 37 employees from five production lines became involved in it. In 1998, at the time of the case study, 28 male employees worked in 6-hour shifts. The employment effect of the working time reduction was positive. To cover the lack of labour in the new shifts, the company hired nine new employees.

Previously, working times in the production department had varied according to the line in question. In addition to a normal dayshift, discontinuous two- and three-shift systems were also used. The working time experiment increased alternative shift systems with a two-, three- and four-shift system, based on a 6.3-hour working time.

The management made the proposal for the working time innovation. The CEO and chief shop steward visited Orthex and took a closer look at their 4x6 - hour working time model. In the negotiations, the management's offer included a demand for a cost-neutral system. The wage cost per product should not increase. The estimated working time reduction was 17%. For example, in 1997, the 8-hour system included 1 697 hours per year, whereas the 6.3-hour system included 1 414 hours. The condition for continuing the experiment was a

corresponding (17%) increase in productivity. The experiment was only started after a yearlong negotiation process.

The working time experiment meant that the working time was compressed. The *Pekkas-days* were removed and daily breaks were shortened. Only one 15-minute break was included in a working day. To compensate for the loss of flexibility caused by the removal of the *Pekkas-days*, the company offered the possibility to work extra days beforehand and to use these days e.g. during Christmas season. To improve the flow of production, the management provided a 15-minute overlapping time during the shift change. To compensate for the compressed working time, the workers got more autonomy in their daily working time arrangements.

The development of productivity is presented in table (4). The table shows that productivity varied considerably, but the overall result was positive.

TABLE 4 Productivity development in different production units in Imatra Steel

	Roller line 1	Roller line 2	Assembly line	Cutting line	Roller line 3
1995 before the experiment	18.5 units/ worked hour	18.5 units/ worked hour	4.4 units/ worked hour	58 units/ worked hour	19 units/ worked hour (started 8/98)
6/1996	21.1 (+14%)		6.6 (+50%)		
8/1997	22.0 (+19%)		6.5 (+48%)	69 (+19%)	
2/1998	20.2 (+9%)		8.2 (+86%)	52 (-10%)	
8/1998	19.9 (+8)	18.8 (+2%)	5.6 (+27%)	86 (+48%)	19.9 (+5%)
9/1998	18.0 (-3%)	19.5 (+5%)	4.2 (-4%)		21.6 (+14%)
10/1998	24.0 (+24%)	21.9 (+18%)	6.6 (+50%)		23.5 (+23%)
11/1998	21.1 (+14%)	24.4 (+24.4%)	6.9 (+57%)		23.9 (+26%)

Certain factors can explain the varying productivity in the different departments. In roller lines, productivity was limited by the machines, whereas assembly line work was mainly manual and the workers had more opportunities to affect productivity. However, the rationalisation possibilities in roller lines were obvious. In 8-hour shifts, production slowed down when the workers took their breaks and the machines cooled down. The situation was even more critical during shift changes. Bringing the production to a halt and restarting again reduced productivity significantly. Technically, the improvement of production flow is easy to implement, but overall, the redefinition of the temporal order of workplace situations is a social question.

“Yes, there is more waiting in this 8-hour because this machine must be heated and cooled and then leave time between in the 8-hour and then it is the same, the quality falls in eight hours.”

“What kinds of differences are there?” (Interviewer)

“This heat difference varies so much in the steel that there are no even temperatures coming in eight hours (...). If, for example, there are many breaks in eight hours, so the quality falls down considerably (...). In an 8-hour shift, there is some half an hour of wasted time, which is wasted just because of the breaks (...). Now we take a break, and see that the situation is good.” (Employee in experiment)

The chief shop steward told that the production department got out of the traditional habit of annoying other shifts by clearing the production line before the change of shift. Earlier this had meant that the previous shift did not leave any products being prepared on the line and the new shift had to start the process from scratch. This is an example of ‘fiddling’ time by indirect means, i.e. by intentionally reducing the productivity of the ‘control group’, and at the same time of the whole establishment.

“(...) if this goes to eight hours, so the quantities will reduce (...) and then the atmosphere, the flexibility will certainly die out.”

“Is the flexibility a crucial thing?” (Interviewer)

“To my mind it is (...), of course the company is squeezing more and more, all the time, but in our case the flexibility has developed quite well and we don't have to work a lot more, but this 6-hour shift is much more comfortable.” (Employee in experiment)

Work in steel production is physically straining because it includes moving and handling of heavy steel blanks of spring. Steel is heated in big furnaces, which also heat up the air in the factory hall.

The CEO estimated that the flexibility of the working time model would be finally tested during a downward phase in demand. Can a reduction in the number of shifts and transfers of workers be the solution to get over the economic downturn?

5.1.6 Case MFG-components: Increasing productivity by shorter night shifts

The MFG-components is a metal industry subcontracting company located in a sparsely populated area in eastern Finland. The history of the company (established in 1975) includes several changes of foreign ownership. At the beginning of 1990, the company went bankrupt because the volume of orders dropped. In 1993, the company was set up again. At the time of the case study, the number of employees was 40. The company produces transmission components and uses CNC turning machines and an advanced robot technique in production.

The company started the working time experiment in February 1996 in two turning machines and one machine tool workstation. These units had previously functioned in a two-shift system, including five 8-hour morning shifts and four 10-hour evening shifts per week. The 10-hour evening shifts offered the possibility of a long weekend off. Increased demand forced the management to innovate new solutions to increase the operation times of machines. For example, the company used weekend shifts, in which working time was 25 hours per weekend and included a full wage. The management

started negotiations on the introduction of a three-shift system, aiming at 24-hour production. The employees resisted the use of night shifts and opposed the three-shift system fiercely. Some employees announced that they would give their notice if the three-shift system was adopted.

The company's need to hold onto skilled labour is understandable. According to the production management's assessment, the training of a new employee with suitable education takes approximately two years. Recruiting skilled labour is a difficult task in outlying areas. The company cooperated with vocational schools to train potential workers. The management told that employees who move to cities do not generally return to the remote areas.

Terms of agreement

Working time was 6.5 hours per day from Monday to Thursday and 6 hours on Friday. The free *Pekkas-days* were eliminated. Regarding employee wage level, hourly pay and overtime pay were stabilised to 8-hour pay by using a coefficient (e.g. $8/6.5=1.23$). Evening and night shift bonuses were paid according to normal practice (evening shift 18:00–23:00 and night shift 23:00–6:00). The agreement was terminable by both parties at two weeks' notice.

The shorter working time included one 15-minute break. The following calculation describes the implication of the different forms of working time on production time. In 1997, there were 221 working days. If the *Pekkas-days* were taken out, the number of working days was 208 and the number of working hours 1 668. When calculating the net working time including the breaks, the total net yearly working time was 11% shorter than in the normal three-shift system. When compared to the dayshift, the working time was 15% shorter. The calculation also included a comparison of shorter shifts with 15-minute and 20-minute breaks.

TABLE 5 The net working time and production time in different shift systems

Form of working time	Working time	Breaks	Breaks total	Working time/day (net)	Working days/year	Production time/year (net)
One-shift	06:00-14:30	2x10	20	7.67	208.5	1 599
Two-shift	06:00-14:30 14:30-24:00 (evening Mon-Thu)	1x20+2x10 / +3x10 (evening shift)	42	7.30	208.5	3 044
Three-shift	06:00-14:00 14:00-22:00 22:00-06:00	1x20+2x10	40	7.33	206.3	4 537
Three-shift, 6.4 hours (15-min break)	06:00-12:30 12:30-19:00 19:00-01:30	1x15	15	6.15	221	4 077
Three-shift, 6.4 hours (2x10-min break)	06:00-12:30 12:30-19:00 19:00-01:30	2x10	20	6.07	221	4 024

The employer's calculations showed that the traditional three-shift system based on the 8-hour working time had the lowest labour costs per work hour. The company does not have an exhaustive system for productivity measurement. The management primarily follows up the flow of products. The shorter working hours were not problematic regarding the product flow. The assessment of capital usage was also difficult. The CEO estimated that three-shift work is the most profitable solution if capital costs are included in the equation of total production costs.

The reduction in wages was modest, approximately 2%. Especially the missing night shift bonuses decreased the wages. The 8-hour system had a night shift about every three weeks. The bonus (7.85 Finnish marks per hour) was paid for seven hours per night.

The interviewed employee from MFG-components told that their 6.4-hour system, which reduced the number of night shifts, was a good solution considering free time and hobbies.

"In the night shift, the shorter working time was more comfortable (...) the night shift was from seven p.m. to half past one. There was time to sleep (...) when it is the shorter working shift, so you surely put more effort on your work and it is more efficient compared to the three-shift"

The ending of the experiment showed that even a minor reduction in wages causes pressure for a longer working time.

5.2 Defensive Adaptation Strategies in an Economic Recession

5.2.1 Case Ou-Ra: Adapting to the recession with shorter working hours

Ou-Ra is a construction company located in northern Finland. It used working time reduction as an adaptive strategy during a brief downward trend in construction business. Ou-Ra did not have a demand-based need to lengthen its operation hours. It tried to be prepared for the recovery of the construction business and avoid losing skilled labour with long employment contracts.

"We shifted into the recession and we could not give notice to somebody, we did not want to because, departing from traditional procedure of construction business, we have long-term work contracts, and then to lay somebody off is the most awkward thing. And then we thought that if we would shift to 6-hour days, we could improve the employment situation. The main principle was that we would not compensate the lowering of wages caused by working time reduction (...) and then we thought that shifting from 8-hour to 6-hour piecework will compensate the wage level when the results of work will increase." (CEO)

The background factors of the working time experiment were related to the recession of the mid- 1990s. In March 1996, Ou-Ra introduced a 2.5-year working time experiment in order to avoid lay-offs. The follow-up of the experiment was carefully planned and implemented. The duration of the

experiment was planned to be at least 2 years to get information from an adequately long period. The management chose five experimental sites to allow comparison of results. A research group from the Institute of Occupational Health conducted employee interviews and two-phased questionnaire research to evaluate the effects of the experiment on perceived working time contentment, well-being and work and family interaction (Mattila & Kauppinen & Määttä & Kandolin 1997; Larvi & Kandolin 1998).

The experiment caused a 1.3-hour decrease in daily working time. The 6-hour shifts included a 30-minute break. The morning shift was from 6 a.m. to 12 noon and the afternoon shift from 11:55 a.m. to 17:55 p.m.

According to management estimations, the construction business could gain significant operational benefits from variable working times. For example, staggering the working hours of a mason and his mate could decrease unproductive time spent at work preparation. Working hours in the construction business have been established to start at 7 a.m. and end at 4 p.m., and it has been very difficult to implement a reorganisation of these hours.

The negotiations started on the CEO's initiative. The foremen of the construction sites and the chief shop steward were involved in the negotiation process, which aroused a lot of fear and suspicion. Both the CEO and chief shop steward said that mutual trust between the employer and employees was a precondition for the agreement¹⁷.

Reorganisation of work in building construction

The working time experiment only applied to employees who were not in superior positions. In the most extensive phase, 35 employees took part in the experiment. The main occupational groups were masons and carpenters. Four construction sites operated in 6-hour shifts, which most commonly lasted from 7 a.m. to 1.30 p.m. and 9.30 a.m. to 4 p.m. One small construction site operated with one 6-hour shift. The more irregular working time arrangements required more intensive planning, which increased the tasks of the foremen. All employees at Ou-Ra work in teams, which are utilised to lower the hierarchy of work and to increase worker responsibility in the organisation of work and quality of production.

Sufficiently large sites would make the use of shift work in construction a viable option. However, because of the small size of the constructed buildings, as well as the small size of the working teams, the implementation of extended operation times did not succeed, and the 6-hour day was prolonged to eight

¹⁷ An exception to other sectors, collective agreement in the building sector (1994) specified the possibility of the member construction companies of the Confederation of Finnish Construction Industries to agree on the six-plus-six-hour working time model. However, this possibility was rarely used. According to a study evaluating the possibilities to implement new working time arrangements (Peltomäki, Silvennoinen, Elsilä 1998), the attitudes of the employers and employee representatives of building construction towards the six-plus-six scheme were reserved. In addition to the practical problems of reorganising work, the negotiation atmosphere was commonly too poor for such radical changes.

hours after two years in the experiment. The masons now worked seven hours per day because their work productivity falls rapidly if the workday is longer.

Local agreement included some central changes in the terms and conditions of employment. The additional days off (*Pekkas-päivät*) were taken away and the working day was compressed by eliminating one break. According to the plan, a 6-hour day would include only one half-hour break, but in practice, the employees took another coffee break. To build confidence and commitment, the management asked the chief shop steward to approve all building contracts during the working time experiment. The time-money exchange of the new working time arrangement was established at a level that could be handled by the employees.

Team size had usually been 4–5 people. During the working time experiment, the teams recruited one new employee. The employment effect (20 – 25%) was not based on an improved demand situation or growing building sites, but it was an immediate cause of the working time reduction. Another aim of the experiment was to make the age structure younger. The management gave detailed instructions to the teams to recruit employees under the age of 30. However, the teams assumed that the working time experiment would increase the pace of work and chose only experienced and skilled people. Only one of the recruited employees was under 30 years old.

A building construction organisation is a network in which a working time solution conducted in one cell will influence the operations of other networking companies. This implies that all networking companies should reorganise their working time system at the same time to maintain effectiveness of operations. In the Ou-Ra case, both pros and cons related to the cooperation between the main constructor and sub-contractors were recorded. The working time arrangement was more flexible from the subcontractor's point of view because the working hours of the main contractor's employees were more permanent, but on the other hand, some construction phases would have required the presence of all workers. The subcontractors did not shift to the new working time model, even if the main constructor considered it necessary. The subcontractors adapted their operations to the changing pace of construction by using overtime work.

The productivity of work was accurately evaluated, by comparing recurring work phases (e.g. construction of wooden frameworks and masonry of outside walls) in experimental building sites (3) and control building sites. In average, the productivity increase during the construction experiment was 5.4%. The increase was greater in long-standing work phases, such as masonry. The experiment did not have a considerable effect on production costs (Jänkälä 1997;1998).

Wage and time

As a result of the working time reduction, the wage level (before tax) of carpenters decreased on the average by 15.2% (general increase of the income level was controlled). The wages of building workers decreased by 16% and of

masons by 23.6%. When the masons shifted from 6-hour to 7-hour days in the final stage of the experiment, their wages were 11.1% lower than before, during 8-hour days. After taxation, the decrease in net annual wages was 12.7% for carpenters, 13.1% for building workers and 20.8% for masons (Jänkälä 1998). According to the research of Mattila et al. (1997), employee attitudes towards the working time experiment became more positive when the estimated decrease in wages was lower. The workers felt that the experiment decreased their job insecurity.

It is characteristic of building work that work intensity increases with the advancement of the building site. In the final stage of completing the site, the workers shifted to 8-hour days. In piecework, the workers perceived the working time to be too short.

Despite of high unemployment, Ou-Ra reported that lack of skilled workers hampered the implementation of the experiment and was at least a partial reason for its cancellation. On the other hand, in a good employment situation with low job insecurity, employees are not likely to compromise their wages at all. The working time experiment ended in October 1998. The working time of carpenters and building workers was restored to eight hours and the working time of masons was established to be seven hours.

During the experiment, the management noticed that it would have been necessary to allocate resources for the staggering and reorganising of working time. The small size of the teams was a central problem regarding the staggered hours. In small building sites, differentiated and staggered working hours were not operationally reasonable.

Sufficiently large building sites are a precondition for the optimal use of longer operation hours. The Ou-Ra experiment showed that in building construction, the productivity increase is smaller than in manufacturing. When evaluating the outcomes of the Ou-Ra experiment, we should note the defensive nature of the experiment in a downward phase of local construction business. Productivity increase was not a primary goal of the experiment – and wage reduction corresponding to the working time reduction did not necessarily provide a good measure of productivity growth. The staggering of working hours was minor and did not offer significant financial gains in the form of more efficient use of machines and devices. Noticeably compressed working time, for example by reducing or shortening the breaks, was not possible in physically demanding work.

The CEO of Ou-Ra said that the working time experiment added operational options for the future. Both the CEO and chief shop steward regarded the working time reduction as a possible solution in the future, especially during a recession. The experiment showed the options, for example in masons' work, for rationalising the working times, which seemed obvious in advance, but provided breaking down of old practices and routines.

5.2.2 Case Otava: Long-term plan to avoid redundancies

The printing house of Otava employed 136 people at the time of the case research. The employees were mainly printing workers (110), of whom 67% were women. The printing house was strongly reorganised in the 1990s and the staff was reduced after renewed and automated production technology. The redundancies were mainly implemented by using unemployment pension systems. The company focused on its core business areas and outsourced a marked share of its functions.

Negotiation process

The working time system in printing production was mainly arranged by using two-shift work from 7 a.m. to 3 p.m. and from 3 p.m. to 11 p.m. Two-shift work was based on optimal production volume and production costs. It is characteristic of the business that seasonal fluctuations are strong. During seasonal peaks in demand, Otava utilised weekend shifts (2x12 hours) with full-time pay to lengthen the production hours. The management claimed that the cost of weekend shifts was an expensive solution. Lengthening the production hours to 24 hours would also be expensive, due to the nightshift compensation defined in the collective agreement of the printing industry.

Negotiations concerning the working time reduction started when the automation of production lines threatened the position of ten workers in the organisation. The new printing machines needed only one operator, whereas the old machines required the presence of two operators. The employees approached the initiative of working time reduction with the intention of avoiding redundancies. The employer's attitude to the initiative was positive, but it involved a claim for wage reduction. The employees resisted significant wage cuts, which halted the bargaining process. During the lay-off process, the negotiations started again. The new bargaining round produced a local agreement, which was presented to the employer's union and trade union. The employees voted to shift to the new working time system.

According to the chief shop steward, the employees were in a poor negotiation position. He estimated that the biggest problem in the negotiation process was the negative attitudes of especially older workers towards changing their daily rhythms.

"Negotiations were held with the employees about the 6-hour system, and sure, there was like a war among the employees because some wanted this 6-hour working time system – were ready to go for it, but others were heart and soul for working the 8 hours."

"What was then the most important reason for that?" (Interviewer)

"Principle, frankly speaking, for those who just wanted the 8 hours..."

"How many of them were there, how did they group up?" (Interviewer)

"Well, let's say that at first there were ... let's say that we are 29, and let's say that 20 were ready to switch to the 6-hour working time and these other 9 were sort of not, but then when these negotiations were held and it was calculated many times that how much money we like lose or gain in this thing ... and then there were, let's say 2–3 people left who still today don't, because of like own principle."

"What is that principle?" (Interviewer)

"Well, it's like this that since they've worked 8 hours all their lives, so they just want to do the 8 hours, there is nothing more than that." (Chief shop steward)

The interviewed employee told that if there would be no threat of lay-offs, the workers would not have been reluctant to agree on wage reductions. In addition to the wage reduction, the increased number of Saturday shifts was also met with opposition. Weekend work time was interpreted as an invalidation of the achievements of a long industrial action process. The company discussed the possibility of linking a bindery department to the working time experiment. In this department, the reorganisation of working time would give operational flexibility to the organisation of work and open the bottlenecks that arise during the seasonal peaks in demand.

"We have had preliminary discussions with the bindery department, but the situation is the same as here (in printing department/TA), but there is more opposition."

"Why is that?" (Interviewer)

"Well, I see that it is because, firstly that persons there all have an awful long time spent here, I guess that the personnel in bindery on average 20 years, so they think so that when they have done it for 20 years, so why would they change it." (Chief shop steward)

The bindery workers proposed an introduction of the weekend shift to increase production hours. This would have meant recruitment of new people outside the company. The reduction of extra days aroused opposition as well. The grounds for the extra days off were redefined. In practice, the employees got 25 minutes of extra free time per day in the summer, when they worked 8-hour shifts and were substituting for another employee, for example in the case of sick leave, by doing two consecutive 6-hour shifts.

The experiment started in November 1995. The management emphasised that the main reason for their consent was the need to hold on to skilled labour. The company implemented a long-term plan, attached to the agreement, of not laying off workers during the experiment.

Optimising the production hours

At the same time with the working time reduction, the employer and employees made an agreement on the flexible organisation of total weekly production hours. The total weekly production was 60, 90, 96, 102 or 112 hours, depending on demand. This meant two-shift or three-shift work, including Saturday work as needed. The working time was 30–36–40 hours per week. At first, the employer did not offer any compensation, which caused a notable reduction in wages. Because of the renewed wage system, wages per worked hour increased as the productivity increased. After three years, the wage level of the employees was almost the same as before the experiment. Overtime compensation was only paid when the length of the workday exceeded eight hours, which in part had a reductive effect on the wage level.

According to employer estimates, the breaks reduced the production hours by about ten hours per week in the previous 8-hour system, which reduced the weekly production time from 80 hours to 70 hours. In the 6-hour system, there were no breaks to stop the production machines. The net production hours in the 6-hour shift system increased to 95–100 hours.

TABLE 6 Variation in work and production hours in the printing department

Production hours per week	1. shift	2. shift	3. shift	Saturday
60	6.00-12.00	11.55-17.55		
80 (8-hour system)	7.00-15.00	14.55-22.55		
90	6.00-12.00	11.55-17.55	17.50-23.50	
112	6.00-14.00	13.55-19.55	19.50-01.50	6.00-12.00 11.55-17.55

In addition to the former shift systems, there was also the option for a 96-hour or 102-hour production system. Shifting to another production hour system required an announcement a week before. In these systems, Saturday work was arranged in one or two shifts. Work on Saturdays did not include normal bonuses. The growth of production volume by using Saturday work did not increase production costs. Due to a more flexible working time system, the amount of overtime was significantly reduced. Overtime pay was calculated according to a higher hourly pay of the 6-hour system, but overtime was only paid when the working day exceeded eight hours.

The wages were only modestly reduced. The wage level of 6 hours corresponded to a wage level of 7 hours 28 minutes in the 8-hour system. Productivity was predetermined by the print run and degree of difficulty of machine settings. Changes in machinery make it impossible to compare work productivity in different working time arrangements. Automation reduced the share of labour costs of production and increased productivity. Quality comparison was also impossible because the advanced production technology had an influence on production loss. The CEO estimated the development of work productivity by using production bonuses. The estimated growth in productivity was approximately 20%.

The growth in work productivity was also influenced by the change in work orientation. During the working time experiment, there was a change in the use of working time towards increased autonomy. However, the experiment still burdened the middle management because the increased variation in working time required more detailed planning and scheduling of work, as well as optimal loading of the production departments.

“What it affects is that it clearly has an effect on this spirit of solidarity that’s out there, and on this kind of initiative – that we have developed new things there, that in a way when you look at it, you kind of see that each department should have this kind of a project that causes positive thinking ... in a way the staff that’s there, doing this 6-hour work time, has been formed into a team, but not actively by the employer

... I mean, there are these typical features of a team that if somebody cannot come to work, he'll call somebody else that 'hey, can you stay a bit longer, I can't come today', or he'll say, if let's say that the middle-shift guy knows that he can't come, so he'll call the morning guy that can he work a longer day, so that someone else comes there while he can't, when he is sick ... they switch these things by themselves like this, and if the shifts don't work for them, they switch them there among themselves." (Managing director)

The working time reductions in printing work were an obvious defensive strategy to save jobs at the time of a downward trend in customer demand. The company implemented a long-term plan in order to keep the available skilled workforce.

5.2.3 Case KWH-Pipe: Working time reduction and new company culture

KWH-Pipe manufactures plastic pipes for construction. One of the production departments in the pipe factory in Vaasa switched from a three-shift system (8x3) to four 6-hour (6+6+6+6) shifts to increase overall productivity and better meet customer demand. The factory produces special products used for example in municipal engineering. Due to large product variation, the factory's stores are small. The factory employs about 150 persons and at the time of the case study research, about 90 persons, mainly men, worked in production.

The experiment started at the same time with declining demand in 1996. The company was prepared to reduce the number of employees, and at the end of 1995, two persons had been laid off. The human resource manager estimated that the company would have been forced to make additional lay-offs had the working time reduction not been implemented.

The company usually uses a discontinuous three-shift system from Monday to Friday in the production department. Additional production hours are provided by 12-hour weekend shifts that make it possible to keep up the production process without interruption. The company has also used a two-shift system with 10-hour evening shifts, where the morning shift works for eight hours and the evening shift works for ten hours on four evenings a week. This enables longer free time on weekends. Furthermore, the company has used flexitime arrangements, which offer greater employee autonomy in the timing of working time. Work starts between 5:00 and 10:00 a.m. and ends between 12:00 noon and 9 p.m. This system also includes an option to store working time within a two-month equalisation period.

The chief shop steward initiated the planning process of the 6-hour system. The following statement by the personnel manager is a typical narrative of the management's calculations during the planning process of the 6-hour experiment.

"Well, it started when the chief shop steward just threw out an idea. He even had a calculation, which was calculated as I always do it. There was a theoretical working time and when we reduce the *Pekkas-days*, it reduces the gap (between total and real working time/TA) and when we reduce coffee breaks and if possible workers are healthier, which reduces the gap and then there is something which improves with soft values. I said that this is not a convincing calculation (...) I calculated it myself

again and I got quite a similar result. I discovered that the gap was still ten percent (...) We calculated it again and again over a year and showed the calculation to the executive team and they totally agreed that this makes no sense, why to give up 10% of working time and pay for eight hours (...) Then some stories were spreading, firstly about Kallonen (CEO of Orthex/TA), then Essilor and Wallas-Marin, and then we were seriously attracted to that."

In the previous quotation, the human resource manager describes typical problems in the planning process. In his case, the calculation showed a 10% remainder that could not be compensated by compressing the working time, i.e. by increasing the tempo of work. It is also characteristic of the planning process that the pioneer companies had a decisive role in strengthening the faith in successful implementation of the new working time model. Information from other experimenting companies can show the potential of working time reorganisation, which is not obvious based on the calculations of gross and net working time.

The management arranged a meeting to discuss the possibilities of productivity increase through reorganisation of work. The aim was to find a way to increase productivity by 10%, in order to maintain the previous wage level. Production department workers pointed out several suggested improvements that could potentially reshape the production operation. At the same time, the workers came up with the condition that the previous wage level had to be maintained.

Four years before the working time experiment, the company introduced a new wage system based on productivity. According to the human resource manager and chief shop steward, the negotiations on the wage system changed the bargaining culture, inspired confidence and later also made the agreement on 6-hour shifts possible.

The working time experiment can be viewed as a logical extension of the wage system reform. The wage system included marked incentives, such as a 20-Finnish mark (approx. 30%) bonus in hourly pay for meeting the quality standards. Correspondingly, machinery setting times and poor quality caused a 5-mark reduction in hourly pay. The implementation of the wage system cut the production loss in half.

Implementation of the 6-hour schedule

The 6-hour shift system applied to 20 machine operators. Local agreement of the experiment eliminated the coffee breaks and removed the collectively bargained days off (*Pekkas-days*). The 6-hour shift included one 20–25-minute break. The overtime bonus (100% raise) was payable after eight hours.

According to the chief shop steward, the wage level was at the same level as before in the 8-hour shifts. The wages were defined according to the new wage system. During the first experiment year, productivity increased significantly. The productivity increase was 42.2% in 1996 when compared to the previous year and the 8-hour shift system. The wage costs per produced unit decreased by 20.7%.

The experiment's potentially favourable effect on employment was counterbalanced by the increased efficiency. The team for the working time experiment was formed via internal transfers. The increased tempo of work was evident. The number of team workers decreased together with the introduction of the additional shift. Previously, the team had consisted of five workers, but the experiment cut off one worker per team.

Changes in the production process

Compared to the process industry operating with advanced production technology, plastic pipe production includes a limited computer-operated process and quality control. Production involves manual skilled work and the workers have a decisive role in the development of productivity. The costs of production breaks are high, which means that production control is an important factor of productivity. In the experiment, productivity growth was based on minimising the setting times and on more attentive production control.

At the same time, the wage system was reviewed and the workday was compressed by removing the breaks. The employees received significant extra bonuses for better quality.

The employer tried to extend the experiment to other production units, but the attempt was not successful. The biggest obstacle was resistance towards the daily working time reduction and compressed work process. The workers valued their extra days off (*Pekkas-days*), which the experiment would have reduced. The workers also obviously preferred the single days off, which they can use according to their needs. The interviewed workers who had oriented themselves to the 6-hour workday did not miss the single days off.

"But still, I don't find it to be a big problem because what we won is over 400 hours per year, and what we gave up was 124 hours per year. So this deal was good. And then if you need to take one extra day off, because it's a matter of six hours, so you can easily work 12 hours, and then you are also allowed to switch shifts." (Worker in the experiment)

The working time experiment of KWH Pipe indicates that the intensification of work has its limits. The employees estimated that the relationship between shorter working time and increased tempo was positive, but still, the extension of the working time experiment failed.

5.3 Observations about Private Sector Working Time Experiments

The six-plus-six -hour model breaks the traditional way of adapting working hours to changes in demand. Reducing working hours at a time of high demand is not a traditional adaptation strategy. Maintaining the existing wage

level, while radically reducing the working hours does not belong to traditional agreement practices, either. Switching to the six-plus-six model was a new cultural process for the companies and their organisational structures, employers and shop stewards, as well as the workers. When evaluating the working time experiments, it should be noted that they were implemented in a certain social context. Every establishment has its own cultural knowledge that defines the interaction between the actors and organisational potential to absorb and implement modifications in the organisation of work. This knowledge consists of beliefs and ideas based on former experiences and facts, but also on pure suppositions without substance.

The reduction and reorganisation of working time in Finnish establishments was realised as small-scale experiments. The companies were not prepared to undergo massive or general arrangements to reduce working time. Key persons in management estimated that the reorganisation of working time could only be carried out if the company had an operational need for rearrangement. Most of the experiments were applied to specific situations, such as production bottlenecks. The management's starting point in each case organisation was to implement a cost-neutral system. The short duration of the experimental periods and fixed-term contracts of the recruited persons lowered the risks related to the new working time arrangement. However, the experiments always include elements that cannot be calculated beforehand.

The purpose of experimentation is to reshape the traditional options of economic actors to adapt to fluctuations in demand. Commonly, as shown in the case study organisations, overtime is a prime adaptation tool. However, despite of its attractiveness, the long-term use of overtime is not the best practice regarding the efficiency of production or work ability of employees. The specific situations made the experiments possible, but the actual realisation required trust between the negotiating partners.

In the negotiation process, the firms have to adapt to elements that produce contingencies and are not systematically calculable. For example, productivity cannot be accurately estimated during the planning process, nor can it be established to a certain level in advance. Employers do not know whether employees will commit themselves to increasing productivity. The interviewed employers emphasised trust as a threshold in the reduction and reorganisation of working time.

TABLE 7 Private manufacturing firms participating in the study

COMPANY/ PRODUCTS	Working time model	Size of experiment male/female	Total personnel	Experiment started	Change in wages	Work productivity	Other benefits for the company	Employment effect
GWB Essilor Lenses for spectacles	6+6	1/3 women 2/3 men (46)	46	1994	Existing wage level	Production cost per lens decreased 25% (1993 to 1995)	Production capacity increased without investments on machinery	Seven persons recruited
Orthex Plastic products	4*6	8 - all women	77	1987	Existing wage level	Not evaluated	Better quality	Not evaluated
Wallas-Marin Boat equipment	6+6	16 - all men	27	1995 (3-month)	Existing wage level	Production quantity decreased 8%; production cost per unit decreased 4-5%	Overtime decreased	No effect
Nokian Tyres Car tyres	6+6 /3x6	20 - all men	1278	1995	Existing wage level	Productivity increase per hour app. 30%; production cost per unit increased 2%	Production capacity increased, absenteeism decreased	Eight persons recruited
Imatra Steel Billnäs Metal industry	3x6/ 4*6	37 - all men	125	1996	Existing wage level	Productivity increase per hour app. 21-25%	Faster deliveries	Eight persons recruited
MFG- components Metal industry	4x6.4	9 - all men	40	1996	Existing wage level	Not evaluated	Increased production hours, but short night shifts	Three person recruited
Ou-Ra Building construction	6+6	12-35 - all men	78	1996-1998	15-26% wage reduction	Productivity increased 5.4%; production costs did not change	Overtime decreased	Lay-offs avoided
Otava Book publishing	3x6	19 - all men	136	1996	5-10% wage reduction	Productivity increase per hour app. 10-20%	Increased flexibility in weekly production hours	Twelve jobs saved
KWH-Pipe Plastic pipes	4*6	20 - all men	150	1996	Existing wage level	Productivity increased 42%; production cost per unit decreased 20.7%	Absenteeism decreased, better quality	Not evaluated

Adaptation strategy

In the companies that implemented the 6-hour scheme as an offensive strategy, the need for changes in working time was associated with changes in demand. Increased demand created pressures to raise the quantity of production. Each company could have adopted any of a number of alternative or parallel solutions to raise the quantity of production. They could have increased their work force or working hours, or renewed, developed or acquired more technology for the production process. The working time experiment involved the complex issues of the optimisation of market control and search for operational flexibility as the company's course of action.

In most manufacturing companies, increased demand was an essential factor behind the implementation of the six-plus-six -hour model. The firms were looking for an optimal volume of production through the prolonged operating time, but they were also seeking competitive advantage from the shorter hours. An essential precondition for the profitability of the shorter hours was that it was possible to derive a profit from higher production volume or higher quality.

Working time reduction in a phase of increasing demand is not one of the traditional adaptation strategies. Neither is the practice that secures the wage level in case of substantial working time reduction. The implementation of 6-hour shifts was a (work) cultural process for the employer, employees and their representatives. This process occurred in different places and different times, yet it included many similar features.

The six-plus-six -hour model was an adaptation strategy in companies where reorganisation of working hours was used to increase production volume, instead of overtime and investments on new machines. This involved hiring new employees. It was calculated that the increased production time and raised efficiency would compensate for the wage costs of the new employees.

Changes in the work process, productivity and employment

The case organisations, reorganising their working time as an offensive strategy in a phase of increasing demand, paid full wage compensation. The more efficient use of capital, increased production time, compression of working hours through shorter breaks and rise of productivity made it possible to maintain the existing wage level and make the working time model financially profitable. In practice, maintaining the existing wage level was an unconditional presumption for the establishment of the agreement. The experiments that took place in the process industry minimised the breaks more strictly. The ideal outcome was an uninterrupted production process, achieved by increased working time autonomy of self-controlled teams.

The agreements on wages and conditions of employment were almost identical in all the firms participating in the experiment, even if the agreements were made locally and separately from each other. In all the firms, the workers abandoned their extra holidays (12.5 paid free days per year), which were the

result of the previous reduction on working time in the late 1980s. Individual workers volunteered in the experiments. In all cases, there was a lot of suspicion and fear during the planning stages of the experiment. Consequently, the agreements' periods of notice were short in all cases. The agreements were also terminable by either side.

Trade unions did not hamper local agreements because the agreements were satisfactory in terms of both wages and conditions of employment. The employers' resistance concentrated on the macro level, where their central organisation had presented cautious strategic statements, questioning the profitability and employment effects of the reductions in working hours.

At the same time with the technical reduction and reorganisation of working hours, all the companies implemented other organisational changes (e.g. teamwork and renewal of the wage calculation system) closely connected with efficiency. Carrying out many different modifications simultaneously made it difficult to estimate the effect of reduced working hours on productivity. In any case, the reduction and reorganisation of working time had a central role in the implementation of changes. Teamwork, a renewed wage calculation system and the new working time model created an entirety, where the different elements supported the organisational reform – from a hierarchical model towards self-regulating work teams that internally control the level of productivity.

Shorter working hours, combined with more flexible organisation of work supported the modernisation of the work process. The production line foremen of the experimental firms stressed the joint responsibility for increased efficiency during shorter hours, which was achieved with the help of exact and continuous observation of work productivity and rational working time arrangements. The results of the six-plus-six -hour experiments supported the idea that shorter working time intensifies the work process both qualitatively and quantitatively.

The abolition of breaks, faster working tempo and compression of working time to 6-hour shifts reduced social interaction at work. In some cases, uninterrupted work duties and working hours that differed from those of other teams significantly reduced the possibilities for social interaction. This separation process was partially reinforced by increased self-control, detachment from the foremen and a reduced need for reserves. In production control, problems with communication flow were taken into consideration by using more accurate reports and instructions.

The example of the Ou-Ra construction company showed that productivity effects are highly dependent on the nature of work. In building construction, the cyclical variation of work intensity is high. Therefore, the organisation of work falls back into the longer working days during the final stage of the building project.

It needs to be noted that teamwork, low hierarchy and working time experiments are closely connected. In the companies under study, economic profitability was sought with increased utilisation of machine capacity and better work productivity, but the interviewed employers emphasised that by

reducing and reorganising the working hours, they also sought to influence the workers' work orientation and enjoyment of work, and in the long term, the overall functioning of their companies.

Work productivity – or the productivity of capital or labour – cannot be reduced to mere economic or technical factors. Both forms of productivity are organisation specific and connected to the organisation's autonomy of production and decision-making process. The efficiency of production and high quality cannot be directly reduced to applied technology, the level of education of the personnel or other input factors. It is possible to arrange the production process in various ways by using these factors of production.

A company can have different competition strategies. Applying cost strategy, its goal might be to compete with prices. In that case, cost efficiency is the principal advantage in competition. In specialisation strategy, the company would concentrate on high quality and customer-oriented production, which is not necessarily low-priced. The companies obviously need to balance between different strategies and change the emphasis according to the competition situation. The implementation of working time reorganisation should be assessed in relation to the strategic choices of the company. The reduction and reorganisation of working time, which can accelerate the production process or improve the quality, can offer a competitive advantage to the company.

Employment effects and RRWT

The success of the working time experiments is often evaluated on grounds of the realised employment effect. Economic research literature, which dominates the field of discussion, does not support the idea of general working time reduction as a measure of employment policy because of the following principal reasons: (1) the amount of work is not constant; (2) unemployment is not dependent on working time; and (3) the working time reduction will decrease the demand for labour. Thus, a general reduction of working time will prevent economic expansion and generate new unemployment (Böckerman 1998; Kiander 1999; Snower 1997).

The reduction and reorganisation of working time is an abstract concept that partly avoids the criticism that falls on general working time reduction and work sharing. Firstly, previous research indicates that the employment effect essentially depends on what happens to the utilisation rate of capital (Cette & Taddei 1993; Eriksson & Fellman 1995; Agnarsson & Anxo 1995; Anxo 1997; Kiander 1999). This view supports the positive employment effects of working time reduction combined with extended operation times. The productivity of capital is in direct proportion to the utilisation time of capital, which either increases or decreases depending on whether working time replacement (mainly shift work) is utilised – to increase operation times. Prolonged operation times mean that the capital costs per produced unit will decrease (Cette & Taddei 1993, 561–577; Anxo et al. 1995).

Secondly, the employment effects are dependent on the form of working time reduction. The productivity of work is dependent on whether working

time reduction is implemented by cutting yearly, weekly or daily hours. According to Agnarsson & Anxo (1995, 9), the daily reduction of hours seems to increase productivity more than the other forms of reduction. A natural outcome of this is that the employment effect of the daily working time reduction is weaker.

In practice, there is great variety of complex, interrelated and dynamic factors and economic models with simplifying assumptions that give completely conflicting predictions (see DiMartino 1995). The problem is that economic examinations hardly ever include empirical, corporate-level research (Böckerman & Kiander 1998).

Macroeconomic analysis proceeds on the assumption that productivity increase cuts the employment effect efficiently. Empirical experiences from several industrial countries in the 1980s show that in many cases the increased overtime work, shorter operation hours and productivity increase reduced the expected employment effect of the working time reduction (Agnarsson & Anxo 1995). International comparison (Anxo 1987; Ohlsson & Zetterberg 1995) in long-term investigations did not find a clear deterministic relationship between working time and employment, either. Twelve German studies evaluating the employment effects of working time reduction showed that the employment effects were positive, but their estimated strength varied markedly, from 35% to 80% of the theoretical maximum effect (Isidorsson 1994). Pekka Ilmakunnas (1991) showed that a 1% working time reduction in the Finnish industrial sector in 1968–1986 raised productivity by 0.4%. The potential employment effect reduced then 40%.

The employment effects of working time reductions vary according to the size of establishment. In small establishments, the volume of production is more likely to adapt to a lower level because of the reduced working time (Bosworth & Heathfield 1995). The distribution of establishment size is weighted towards the small establishments.

We could suppose that the increased employment effect of the working time reduction conflicts with the problem of incidence of demand and supply of labour. Even if unemployment is at a high level, there could be lack of educated and skilled labour to compensate for the deficit of total working hours.

The equation – presupposing that the working time reduction does not influence the production costs per unit or lead to a decrease in wages and total demand – is difficult to implement with radical working time reductions on a short-term basis. In the long term, productivity has often caught up with the increased production costs caused by radical working time reductions. However, individual firms cannot wait for long-term productivity growth. The higher level of productivity should be reached in direct connection to the hours reduced.

The reduction and reorganisation of working time usually increase the hourly productivity of labour and capital (Agnarsson & Anxo 1995). The increase is achievable in two ways. Firstly, working time reduction is usually associated with the minimisation of breaks. Secondly, the reduction and reorganisation are expected to lead to an accelerated tempo of production.

These effects obviously vary between different fields of production. The variation is assumed to be especially high when comparing the industrial and service sectors (Cette & Taddei 1993, 561–577).

Thus, the increased utilisation rate of capital becomes profitable through the increased production volume. Capital costs are divided among larger quantities of products. For example, in the process industry, where production hours are usually arranged on 24-hour basis, increased capital utilisation presumes that it is possible to speed up production and increase product quantity. Working time reduction in process work does not increase productivity if the quantity of production is defined by the efficiency of the machine, not of man.

Practical experience shows that wage cuts, in proportion to the reduction in hours, are rare. The wage compensation will raise labour costs per product. If the reorganisation of working time leads to unsocial hours, e.g. night work, the wage compensation can increase to over 100%. In that case, the changed labour cost per produced unit depends on the relationship between compensation and work productivity.

Six-plus-six: conditions of employability

The research material from the case study organisations showed that the experiments satisfied the condition of positive employment outcomes. However, as noted in the interviews, employment improvement was not the target of any of the case organisations. Otava, MFG Components and Ou-Ra avoided lay-offs with a working time solution that could be characterised as work sharing. A wage reduction, however modest, was carried out in each of these defensive cases. The companies' principal aim was to hold onto skilled labour.

Several simultaneous processes of work reorganisation had an adverse effect on employment, which made it difficult to evaluate the employment effect of the working time model. The potentially favourable effect on employment of these experiments was largely counterbalanced by increased efficiency. The teams for the working time experiments were usually formed through internal transfers. The elimination of the extra leave days diminished the experiments' effect on employment because it reduced the need for reserves. Furthermore, working without breaks reduced the need to fill in for the workers who were taking a break. Often, the foremen did not adopt the 6-hour shifts, which led to the formation of self-controlling working teams and reduced the need for foremen.

Increased effectiveness brought on by the shorter working hours can nullify the employment effect of the working time reduction (as in the Wallas-Marin experiment). If the productivity of labour increases and production in a 6-hour shift remains equal to an 8-hour shift, it is possible that the six-plus-six working time model has no effect on employment. (Naturally, the situation is different if the volume of production needs to be increased.) However, the employment effect of the shorter working hours depends critically on the

utilisation of capital, (see Cette and Taddei 1993). Without public subsidies or respective cuts in wages, the possibilities of working time reduction are determined by how work could be organised so that the increased productivity of work, or of capital, would compensate for the increased employment costs per hour.

More or less autonomy

The six-plus-six model is a working time model that has both economically rational and social charge. The planning process and negotiations were based on a linear-quantitative characterisation of work time as a factor of production – a quantity of time can be reduced and reallocated, sold and bought for a certain sum of money. The discussion neglected the social aspects of time, which proved to be important factors when the six-plus-six model was put into practice.

A self-directed working team seems to be the most important object of work redesign. A study on company case studies from the Netherlands, France, Germany and Denmark, evaluating innovative working time models and reorganisation of work, showed that changes in working time models often cause practices that entail self-controlling work organisations (deLange, Thunnissen & Kemper 1999). Similar results from the Finnish case studies implied that this is a natural outcome of the changing time structures in organisations.

The above-mentioned study lists the familiar conditions of successful experiments: trust between employer and employees, importance of communication, investment on multi-skilling, the central role of middle management as an obstacle or promoter of change and a revised wage system to meet the needs of self-regulated and more responsible work.

Productivity growth through operational flexibility is reachable in the manufacturing industry, but in the service sector, this is more difficult. The working time experiments in manufacturing enterprises showed how organisations can gain operational flexibility with self-controlling teams and extended production hours, and by minimising the 'unproductive time' with more flexible break arrangements. The teams controlled their own productivity and put new kind of moral responsibility and collective pressure on their members. In financing services, operational flexibility was introduced by using part-time workers. The 'taylorisation' of white-collar employees turned out to be the most difficult task also in these experiments. In Britain, the importance of the overtime culture is evident. The employees have opposed several of the work reorganisation experiments because they reduce the possibilities for overtime work (Rubery & Faichnie 1999).

The tempo of work

The experiments bring into focus the interrelationship between duration of time, timing and tempo. The promising results in the Finnish 6-hour

experiments were achieved through rationalisation of work processes, including a variety of socio-technical measures that intensified the individual working time and ensured a continuous production process and optimal exploitation of the machinery. The workers in the private sector experiments described the 6-hour shift as hectic and the work as having piecework characteristics, but the overall picture of managing at work was still positive; the cessation of work jams and the spiral of overtime work made it easier to manage. In spite of the minimal breaks, the workers with 6-hour shifts felt that they managed better than with 8-hour shifts.

The actual length of a working day is just one aspect of the complex system of time reckoning. This became obvious when we looked at the workers' fierce resistance against reduced working time in some of the case organisations, even when offered full wage compensation. The workers seemed to presume that gains in the duration of a working day could turn out to be defeats in experiencing the time at work if the temporal structure consisting of regular breaks and blocks of work was broken. Collectively formed practices that define the temporal rhythm of a working day are of central importance for the time reckoning system of employees.

Breaking up the working day into different temporal segments is one way to cope with monotony. Donald Roy (1960) has brought into focus the qualitative aspects of working time in his unique empirical study on workers trying to cope with monotonous industrial work. The observed group of workers differentiated time with regular specially named breaks (banana-break, peach-break, Coke-break) during a boring working day. The meaning of these hourly breaks was insignificant as resting breaks, but they helped in achieving control and making the passing of time faster.

The reduction of working time can be meaningless if the temporal structure is broken. This is one reason why it is so difficult to reduce the daily working time. Changes are difficult within a working day that is constituted of temporally constructed practices. The situation is different in the case of extra holidays, when the daily structure of a working day and other activities remains unaltered.

Working time autonomy is a result of achieved victories in the actual control of working time. In addition to production problems, such as shortages of material and production bottlenecks, employees can themselves manipulate time in various ways in order to achieve an easier work regime. Workers can alter their working tempo by building output banks, or they can fiddle away time by not obeying managerially defined time structures, for example by delaying the start of work, extending the breaks or leaving before the official end of a working day (see Noon & Blyton 1997, 63–65). They also have a wide repertoire of techniques for manipulating the possibilities of control. In factory work, there are plenty of situations and work environments in which the physical distance between workers and supervisors lets the workers adjust their work tempo depending on whether the supervisors are present or not.

6 WORKING TIME EXPERIMENTS IN THE MUNICIPAL SECTOR

This chapter will continue the descriptive analysis of the 6-hour shift experiments, but now in social and health care services. The selected cases represent dozens of separate case units in the cities of Espoo, Jyväskylä and Naantali. The municipal experiments are evaluated in relation to the aims that the municipalities and the Ministry of Labour set for them. A short description of the societal context of public sector experiments will also be provided.

The six-plus-six model seemed to be particularly well-suited for municipal services and the nature of service work. It would combine the longer opening hours of services with shorter and less stressful working hours and the hiring of new personnel. As mentioned earlier, the epoch also raised moral questions: was there a way to use these public resources to employ members of the educated labour force in service production, as opposed to supplying them with unemployment benefits? Many social instances and parties, as well as various union activists and researchers raised this and other questions (Julkunen & Nätti 1997, 1999). The Ministry of Social Affairs and Health invited municipalities to conduct the working time experiments in the autumn of 1995, with more than one hundred municipalities responding. (At that time, there were altogether 452 municipalities in Finland).

The municipalities interested in the working time experiments had many concerns and interests. The concerns included the employment of unemployed people, the reduction of personnel overload and exhaustion and the guaranteed quality of services. In producing services, it seemed obvious that maintaining the quantity and quality of services, while reducing the working hours, required new recruits.

6.1 Societal Framework of the Experiments

The first half of the 1990s in Finland was characterised by the deepest crisis of Finnish economic history, which radically increased unemployment and changed the visions of public services upside down (Julkunen & Nätti, 1999). Projects aimed at the modernisation of services and working patterns ended up reducing the personnel and overall resources. Between 1991 and 1994, the number of municipal employees was reduced by almost 40 000 people (8%). Resources were cut, whereas the need and demand for services increased (e.g. more people needed social assistance and social work).

Considering the aforementioned situation, it is not surprising that new working time schemes aroused hope. Work sharing had the potential to provide a solution to the problems of exhaustion of existing staff and the unemployment of well-educated young people.

The municipalities were motivated to participate in the six-plus-six model, despite having several concerns. They wanted to enhance employment for the unemployed, but the worsened quality and intensified pace of work had raised great concern for the exhaustion of employees, which was also threatening the quality of services. In order to maintain the quality and quantity of services, new recruits had to be hired. However, optimism towards the new working time pattern was overshadowed by a deep conflict between the unions and the municipal employer. All the unions within the municipal sector argued that working time could only be reduced with full wage compensation, whereas the national employer's organisation opposed shorter hours, at least with full wages.

In the public sector (municipal social and health care), local negotiations on the terms of the six-plus-six model were difficult. The negotiations dragged on because of disagreements between the employer organisation and trade union branches on the terms and conditions of employment. The financially troubled public sector is in a different position from the private firms regarding the implementation of working time reductions. For the trade unions, the question of unequal treatment of the different sectors of labour market is important. In the working time negotiations, the trade unions have sought arrangements that are as equal to standard terms as possible. These attempts at uniformity were particularly evident in female-dominated fields. The starting point for many of the trade unions in the municipal sector was that working time can only be reduced with full pay. The attitude of the trade unions on working time reduction was stricter than the attitudes of the local experimenters. The trade unions regarded any temporary concessions in wage matters as a bridgehead for permanent losses.

In the spring of 1996, the Finnish government decided to open the deadlock by making municipal experimentation with shorter working time and work sharing possible. This was facilitated by a temporary change (1 June 1996 – 31 December 1998) in the Employment Act: unemployed job-seekers could be

hired to substitute full-timers who had reduced their working time for a two-year period (the usual period of subsidised employment was six months), and the State would cover 50% of the labour costs. Municipal working time experiments with the 30-hour workweeks could now get underway.

The employment act did not limit the working time experiments to any specific model, but enabled various working time arrangements. However, three municipalities participated in the project "Flexibility through 6-hour shifts", which was partly financed by the European Social Fund. These municipalities, i.e. Jyväskylä, Espoo and Naantali, were obliged to try out the daily shortening of working time. The other municipalities shortened the working time through days off and weeks off. In our data, altogether 39% of the participants had a shorter daily working time, whereas 35% had single days off, 21% had weeks off and 5% had a varied working time that levelled out over a certain period.

6.2 Municipal Workers' Interest in Shorter Working Hours

While examining working time reduction in the female-dominated public sector, we cannot pass the gender aspect. The shorter working hours in women's work could mean a weaker labour market position or increased wage gaps. Women have taken part in different work sharing programmes more often than men. The prevalence of part-time work and preferences of those who want shorter working hours do not meet. Part-time work is split between reluctant and voluntary part-time work.

The employees prefer longer continuous leaves more often than shorter daily hours. This means that the workers prefer longer working days, and correspondingly, longer leaves. These preferences reflect individual hopes associated with family life and leisure. I asked the experimenters what their preferred form of working time reduction was and found that most of them preferred free days or free weeks.

I asked more specifically about the willingness of the experimenters to do shorter working hours by specifying aspects of wages, shift work and work. Unexpectedly, possible shift work was viewed as a more difficult threshold to cross than a possible decrease in wages.

The employees' aspiration for shorter working hours was surveyed during the experiments. Table 8 will show that a 30–34-hour working week was the most popular choice, despite a marked reduction in wages. The preferred average working week was 33 hours (a 12% reduction from the earlier working time).

TABLE 8 Preferred weekly working hours if the wages are determined according to the worked hours (all municipalities)

Preferred number of hours	First questionnaire (%)	Second questionnaire (%)
Under 30 hours	4	4
30-34	49	53
35-39	41	31
Over 40 hours	6	11

The price of the different forms of working time reduction

The most popular form of reduced working time was the weekly reduction, particularly when linked to the possibility of a longer weekend (preferred by 35% of the respondents). Especially the employees who had an extra day or week off during the experiment preferred the longer weekend. The second most popular option was the shorter working day (29%). Especially the employees who already had 6-hour shifts during the experiment preferred the shorter days. Other preferred options included a lower retirement age (12%), sabbatical leave (5%), longer summer holiday (3%), or a mixture of these options (15%).

The wages of those moving to a shorter working time were negotiated at the local level, with the agreements varying from one municipality to the next. Overall, 29% lost 0–5% of their wages, 36% lost 6–9.5% and the remaining 35% lost 10–15%. The average wage loss from the 20–25% reduction in hours was 7%, and in some cases, full compensation was paid. Thus, local bargaining was more flexible than national bargaining on both sides.

The working time reduction was radical; in the experiments, working time was reduced to 30 hours per week. The normal length of working time in the municipal sector varies between 36.25 and 38.15 hours per week, and thus, the reduction was 17.3–21.6%.

The most powerful indication of the employees' interest on longer leaves was the relationship between the form of working time reduction and wage reduction (Table 9). With the daily working time reduction, wage losses were smaller (on average 5%) than with the reduction of days (9%) or weeks (10%). The negotiation processes were conducted separately in different municipalities, without instructions or agreements that would have directed the negotiation process. In practice, the employees who had weeks off had accepted a marked reduction in wages, whereas those whose daily hours were reduced had only modest cuts in wages. This illustrates the time-money exchange relationship in the different forms of working time reduction in the female-dominated employee groups.

In the daily working time reduction (six-plus-six model), the motive was to rationalise the service process. Shorter daily hours were often part of reorganisation, and thus included some collective interest in newly organised – and better – services. The extra free days were viewed as an individual benefit and the adaptation of this type of working time reduction did not contain a specific conception of reorganised or rationalised working patterns. An

unemployed substitute merely replaced a permanent employee while he or she was off.

TABLE 9 Wage reduction and the form of reduced working time (%) in the 17 municipalities (second questionnaire)

	6-hour shifts	Days off	Weeks off	Total
Wage reduction				
0-5%	59	11	2	29
6-9%	31	39	42	36
10-15%	10	50	56	35
Total	100	100	100	100
N	265	239	140	644

Chi Square = 230.40, df = 4, $p < 0.000$

The role of recruited substitutes and the problem of task sharing

I asked who the recruited substitutes during the experiments were, how they were recruited and what their work experience was. Data on the new, recruited employees (substitutes) during the experiment was collected from four municipalities (Appendix 4). In the next section, I will compare the characteristics and experiences of the new and old employees in these four municipalities.

Most of the new and old employees were women (90%). Concerning age, there was a clear difference: most of the new employees (71%) were less than 40 years old, while the corresponding figure for the old employees was 29%. The average age of the new and old employees was 35 and 43 years, respectively. Furthermore, the new employees had a higher educational level: more than half of the new employees had completed studies at the level of vocational institute or university, whereas the figure was 43% among the old employees.

Although the average weekly working time was 30 hours for both the new and old employees, the salaries varied. The new employees had normal hourly pay, whereas the old employees received a partial compensation of the wage loss. Thus, the income of the new employees was lower than the income of the permanent employees, despite the same working hours. Still, in contrast to their earlier situation with the unemployment benefit, most of the new employees (57%) reported that their household income had increased. Every fifth new employee reported a reduced income.

At the beginning of the working time experiment, the work units themselves selected the new employees. The employment authorities only required that the new workers had to be unemployed job seekers registered with the employment office. Because of the high unemployment rate (15% in 1996), it was not difficult to find skilled workers. In practice, the work units

selected unemployed people who had been jobless for only a short period. Before the experiment, the new employees had been unemployed on the average for three months, while the national average of unemployment was 11 months in 1996. Furthermore, 59% of the new employees had worked for the same employer and 32% even in the same workplace before the experiment, which greatly diminished the need for training and guidance.

The new employees saw both strong and weak points in this experiment. The most frequently mentioned advantage was work experience and the possibility to maintain one's occupational skills. The length of working hours was considered good in that it left time for family and hobbies. This was especially important for the employees with small children. For some of the new employees, the opportunity to work continuously for one or two years was exceptional, since many of them had had very short job contracts in the past.

The main disadvantages reported by the new employees included low income and the temporary nature of the employment contract. Thus, it was common to have feelings of insecurity. The new employees also felt that their position in the workplace was sometimes unequal when compared to the permanent employees; for instance, they felt that they could not influence their work and working times as much as the permanent ones. Work sharing with new employees and giving up one's own tasks was difficult for the permanent employees at the beginning of the experiment. However, the level of confidence increased after being in contact with the new employees, and after a few months, work sharing became easier. Most of the new workers (77%) agreed that work was being shared fairly between new and old workers and nearly all (95%) reported having enough responsibility. On the other hand, 31% of the new employees found it difficult to bring new ideas and proposals to the work community. During the experiment, 82% of the new employees believed that their chances to acquire work in the future were getting remarkably better because of the experiment, and 31% believed that their present employer would employ them also after the experiment. Two-thirds of the new employees would have been ready to work 6-hour days on a 6-hour salary also in the future. Working as a substitute, even with the low income, was better than unemployment.

6.3 Extension of service hours and rearrangement of working time: some examples from child day care, home care, dental care and physiotherapy

The need for extended service hours is partially due to the more general working time changes in society. It is often argued that the industrialised working time culture and consistent working hours have been replaced by fragmented working hours and more individually organised daily paths, although the evidence is not unambiguous (e.g. Breedveld, 1998). Boulin &

Mückenberger (1999) have presented a community-oriented way of understanding the everyday time structure. This 'time in the city approach' aims to 'humanise' the everyday life structures in accordance with the needs of the inhabitants. Especially within the context of public services, working time is part of the community time. Within this framework, I will analyse the success of the working time experiments in reshaping the service hours to meet customer needs.

There is a need for extended service hours in many municipal services. However, the attitudes of municipal authorities to the extension of service hours are often reserved because of the shortage of resources. The extension of service hours would increase the availability of services, but it would also increase the demand. The more services that are offered, the more they are used. Thus, service hours determine the supply of services, while at the same time adjusting demand to meet the service resources of the unit. Therefore, experts in the social and health service market can determine, for example by regulating the service hours, what kind of demand there is for their services (Vaarama 1995).

The preliminary study in social and health care organisations showed that the greatest demand and need for reorganising working time was in the units of home care, dental care and children's day care. In children's day care, the aim was, for example, to find a better rhythm for the presence of children and personnel. In dental care, the aim was more efficient use of equipment capacity and extension of opening hours, and in home care, the aim was to direct working hours towards the demand peaks (Anttila 1997).

This chapter will examine how the reorganisation of working time in the 6-hour shift experiments was realised. The working time experiments were introduced in various services, but I will concentrate on four different social and health care service sectors – home care, dental care, child care (kindergartens) and physiotherapy – that were well represented in the six-plus-six –hour experiments. The results were gathered from three municipalities in the ESF experiment. The aim is not to present all individual experiments, but to share some examples regarding the aims and needs of working time reorganisation in certain services, and also to describe the realised changes in service hours.

Children's day care

Children's day care is the largest service that the social and health care sector provides, measured by the number of workers. It is a typical social service closely linked to community time. The need for extended service hours has increased as the working hours have become more irregular. Thus, there is a need to extend the service hours of day care centres to correspond with the demand. According to the plans made before the experiments, the most promising working time arrangement to facilitate the extension of service hours was the six-plus-six model. The aim of this model was to extend the service hours, but also to arrange working time more flexibly. In day care centres, a

cyclic daily rhythm dictates the need for workers, so that as many workers as possible must be present at the busiest times.

There are usually three workers per group in children's day care centres. One of the workers is responsible for the pedagogical guidance of the children and the other two workers act as assistant nurses. When the working hours are reduced to six hours, a new person must be recruited to compensate for the loss of total working hours. The following figure (3) illustrates the implementation of reorganised working time in a childcare group in one of the ESF experiments.

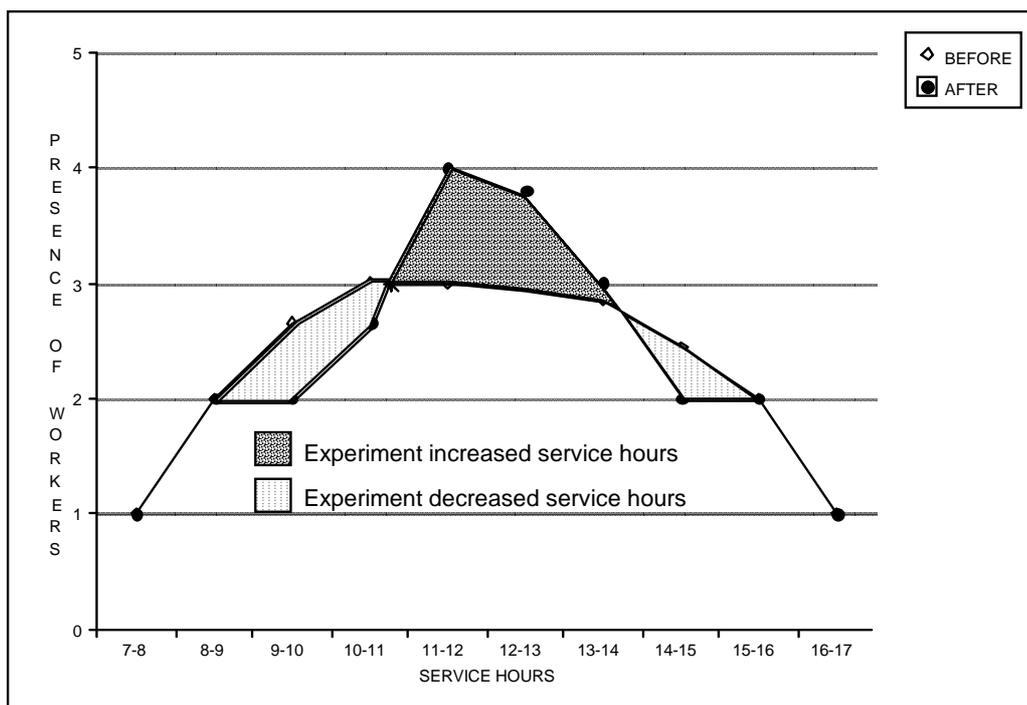


FIGURE 3 The reorganisation of working hours in children's day care

Figure 3 shows that the number of workers present increased in the middle of the day and decreased in the morning and afternoon, which are the busiest periods of the day. A daily reduction of working time to six hours, combined with inadequate extension of service hours or inflexibility in shift arrangements may result in a failure. In children's day care, the service hours should be extended notably to avoid overlapping shifts in the middle of the day. Still, there was something positive in this case: the presence of four workers in the middle of the day facilitated the collective planning ahead of daily operations.

The experiment with the six-plus-six model included day care groups in Jyväskylä, Naantali and Espoo. Large extensions in service hours were not undertaken. An exception was a childcare centre in Espoo, which received a lot of positive feedback from the customers. The parents welcomed the longer opening hours; the centre stayed open until 9 p.m. However, the employees clearly stated that the longer service hours were not desirable because they did not want to work the evening shifts.

Homecare

In the 1990s, institutional care for the elderly was cut back, while variation of home services were increased. The resources for home care were not increased in proportion to the demand. The lack of resources and substantial changes in service demand meant that the weak institutions and professions, such as home care work, had to adapt (Elovainio & Sinervo, 1997).

Finland's demographic structure calls for quick action in home care administration because the demand for the care of the elderly is going to increase. Municipalities are under pressure to implement 24-hour services for the elderly, especially because of cuts in institutional care. However, 24-hour services cannot be handled by home care organisation alone. Round-the-clock services could be provided by manifold arrangements and service providers, such as security firms, fire service departments, etc. Future administration of home care should organise home care more flexibly – also in municipality-owned services – to meet customer needs. The municipalities should provide evening and night services because the customers are expected to stay at home. Privatisation is a new municipal strategy to have more flexibility in elderly care. It is highly probable that the emergence and diffusion of new employment and working time forms will take place especially in private sector home care organisations.

In the planning phase, the new working time model was expected to motivate workers, improve services (times) to meet customer demand and support the extension of outpatient care. The plan also included aims to extend service hours to cover the nights, evenings and weekends. Domestic aid work is very strenuous, and thus, the reduction in working time was expected to relieve work-related strain particularly in home aid. The average age of the home care employees in the experiment was 47 years and the proportion of those over 50 years (32%) was higher than in other experimental groups.

In the home service units, profitability is sought with the help of a customer-based reorganisation of working hours. The starting point is to secure services for those who need them (mainly the elderly) in the evenings and over the weekend. Home care service hours are typically located inside the normal dayshift hours. Municipalities provide evening care scarcely. The customers' daily needs are concentrated in the mornings. In the evenings, the visits by the home care units (also called patrols) are usually short but important because they handle the customers' bedtime routines and medicine prescriptions. To increase the quality of work, municipalities tried to extend the service hours, but worker attitudes towards evening work were negative.

Figure 4 illustrates the reorganisation of the presence of workers in a home care group (one of the ESF experiments). Before the working time experiment, the team had seven members. Three new workers were recruited for the experiment. The figure describes the location of working hours in a typical week before the experiment (1996) and during the experiment (1997). The 'presence of workers' denotes the total number of working hours at the corresponding period of the day.

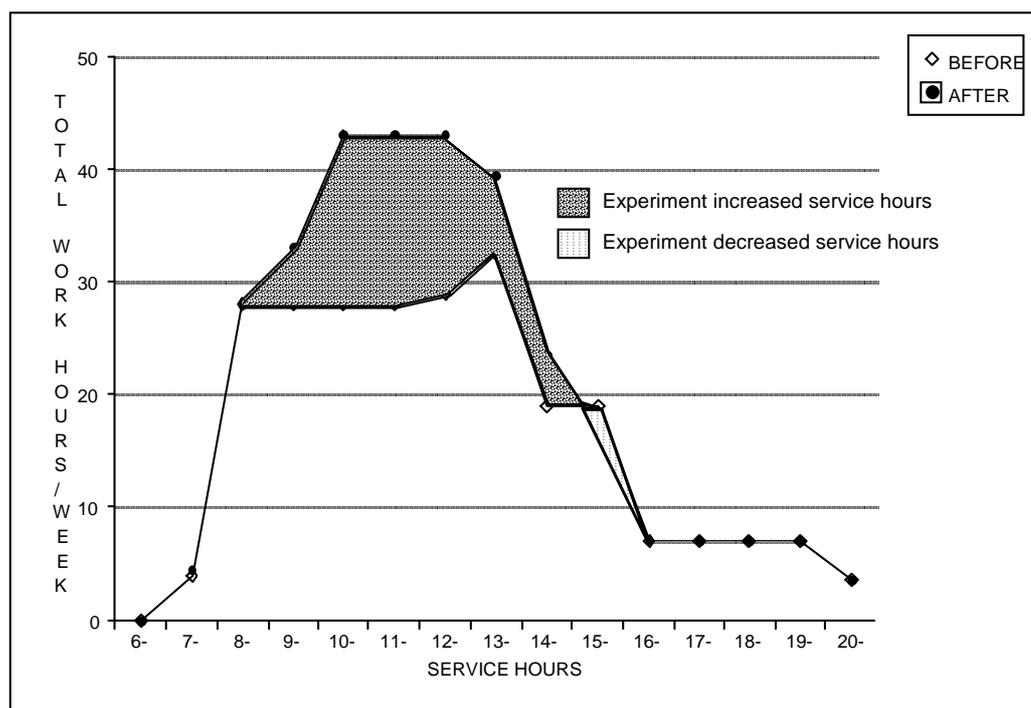


FIGURE 4 The reorganisation of working hours in a home care unit

The workers participating in the experiment felt that the working hours were now organised more flexibly and that they met customer needs better. The working hours were concentrated in the mornings when the need for services was the greatest.

The relationship between quality and efficiency is problematic. The customers expect both material services and social contacts. The interviewed employees evaluated that the experiment had a positive effect on service hours, which now better met customer needs, as well as on work-related strain and efficiency of work. However, they regarded the increased tempo as a threat to the quality of services, and 31% felt that a 6-hour working day was too short for the tasks that they had to perform daily.

In the experiment, 42% of the home care workers were of the opinion that the length of rest breaks was inadequate. The respective percentage was 51% before the experiment. The 6-hour shifts included a 20-minute break, which was arranged flexibly according to the work situation. The interviewed workers described the increased pace of work with numerous examples. The working time experiment was considered similar to a more broad transformation process that had been conducted in home care services. Increased demand and scarce resources cause contradictions between the aims of better quality and efficiency.

The shorter working day and differentiation of working times caused problems in operational planning. Home care work requires time for discussion and shared planning, related to customer situations and needs. The home care workers perceived that the responsibility for customers and fear of breakdown

in communications caused uncertainty and increased work-related mental strain. Problems with synchronisation of work tasks, differentiation of work times and flow of information resulted in a situation in which the workers did not know whether somebody had actually taken care of certain customers or not.

Dental care

In the negotiations, the dental care units of Espoo and Jyväskylä tried to reach an agreement on a four-day week. However, the ESF experiment stipulation provided daily reductions with 6-hour shifts. The implementation of the 6-hour experiment led to unequal working time practices in the experiment. The service hours were mainly extended by placing the newcomers' work shifts in the evenings. The permanent employees were ready to work only one or two evening shifts per week, whereas the substitutes worked in the evenings a lot, which reduced their possibilities to integrate to the organisation and retarded their learning at work.

The service hours of dental care units were predetermined by the dentists' decisions on the length and placement of their weekly hours. Thus, dentists have a lot of autonomy concerning their time use. In addition to the dentists' decisions, the determination of services hours depended on a weekly routine. Statistics of the weekly rosters showed that Fridays had usually been very short working days. The experiments changed these routines by changing the temporal order and organisation of work. The experiments in Espoo dental care units succeeded in utilising rooms and equipment more efficiently. This, however, caused a sense of decreased autonomy, especially in higher positions.

"If I compare this to normal working time, and I got 8% better salary and I had my own room, in which there was nobody else, and I could define myself how to use this room with my permanent nurse..." (Dentist)

In the dental care units of the ESF pilot project, the central aim was to extend the service hours so that customers with full-time work could use dentist services outside their working hours, e.g. in the evenings. Another aim for the experiment was to increase the usage of medical office space and the relatively expensive equipment.

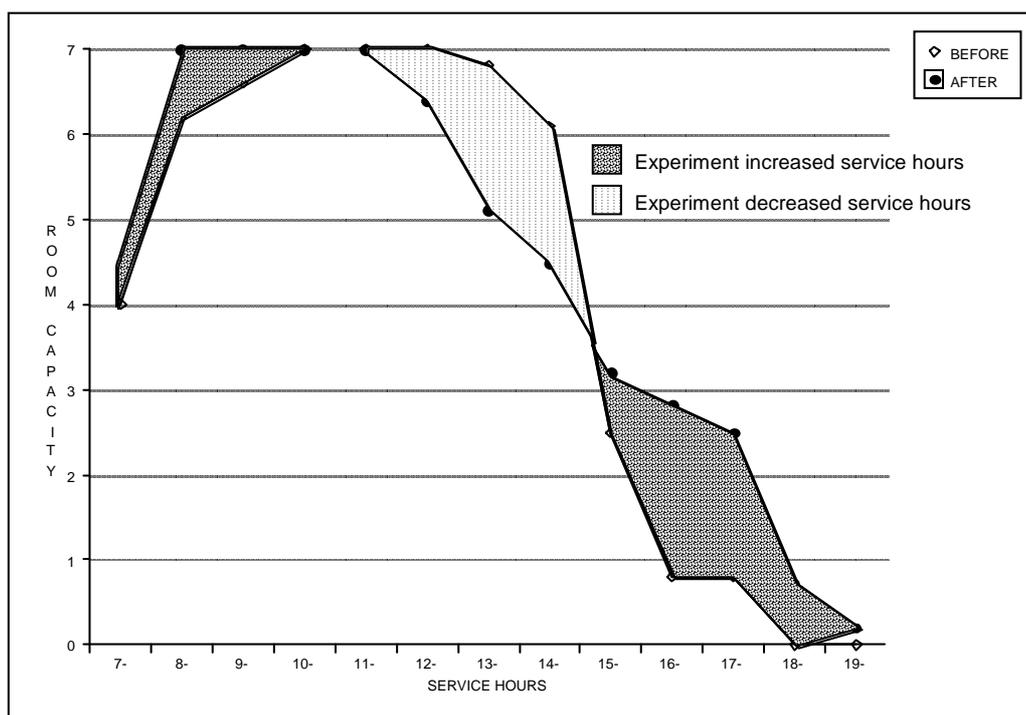


FIGURE 5 The reorganisation of working hours in a dental care unit

Figure 5 illustrates the usage of dental care rooms in a Jyväskylä dental care unit, i.e. the extension of service hours during the experiment. The dental clinic consists of seven rooms. The vertical axis represents the usage rate of rooms in the dental clinic, but also the presence of workers and actual service time. The service hours were prolonged, especially between 4 p.m. and 7 p.m. The usage of existing room capacity increased also in the mornings between 7 a.m. and 9 a.m.

The preference for a four-day week was common in dental care units. One example of a four-day week was the experiment in a dental care unit in Järvenpää. In this case, permanent dentists had an 8-hour clinical (efficient) work time, mainly between 8 a.m. and 3 p.m., from Monday to Thursday, with Fridays off. A substitute dentist recruited to the experiment had Mondays off and worked from Tuesday to Thursday mainly between 2 p.m. and 8 p.m., and on Fridays as needed. This unequal arrangement was possible by utilising the substitutes' flexibility.

The working time of the dental care units became more intensive during the experiments. A normal 8-hour dayshift includes a coffee break and a 30-minute lunch break. The experimenters in Jyväskylä reported that they had about 15 minutes less breaks.

Utriainen's research (1994, 57–64) on Finnish dental care productivity showed that total productivity could be increased by encouraging the dental care personnel to do two-shift work. Long work hours are not the best prerequisite for productivity. These results support the idea of combining a shorter working time with extended service hours.

On grounds of the interviews with managers and personnel in the experiment, the six-plus-six model – implemented in entire dental care clinics by extending the service hours – seemed to be a good practice regarding the organisation of work, efficiency and needs of customers. However, in practice the experiments failed, partially because of the employees' manifold hopes and preferences concerning their working time. The experiments were split into different versions and the entire personnel was not participating. 6-hour and 8-hour dentists worked side by side, which mixed up the nurses' working times and the overall functioning of the clinics. A working time reduction by using a four-day week and avoiding unsocial hours might have increased the dentists' readiness to participate in the experiment, but as the other municipal experiments showed, the effects on the service hours would have remained modest.

Physiotherapy

One successful example of extended service hours was the implementation of 6-hour shifts in a physiotherapy unit in Espoo. Before the working time experiment, the physiotherapy team consisted of four employees, and at the outset of the experiment, two new workers were hired. The reorganisation of working hours increased the evening service hours notably. The total weekly working hours increased by 24% in this unit. At the same time, the number of customer visits in the physiotherapy unit increased by 17%. The extension of service hours intensified the usage of medical office space and equipment. In fact, the unit experienced lack of room capacity in the middle of the day, at which time some of the workers could do their necessary paper work.

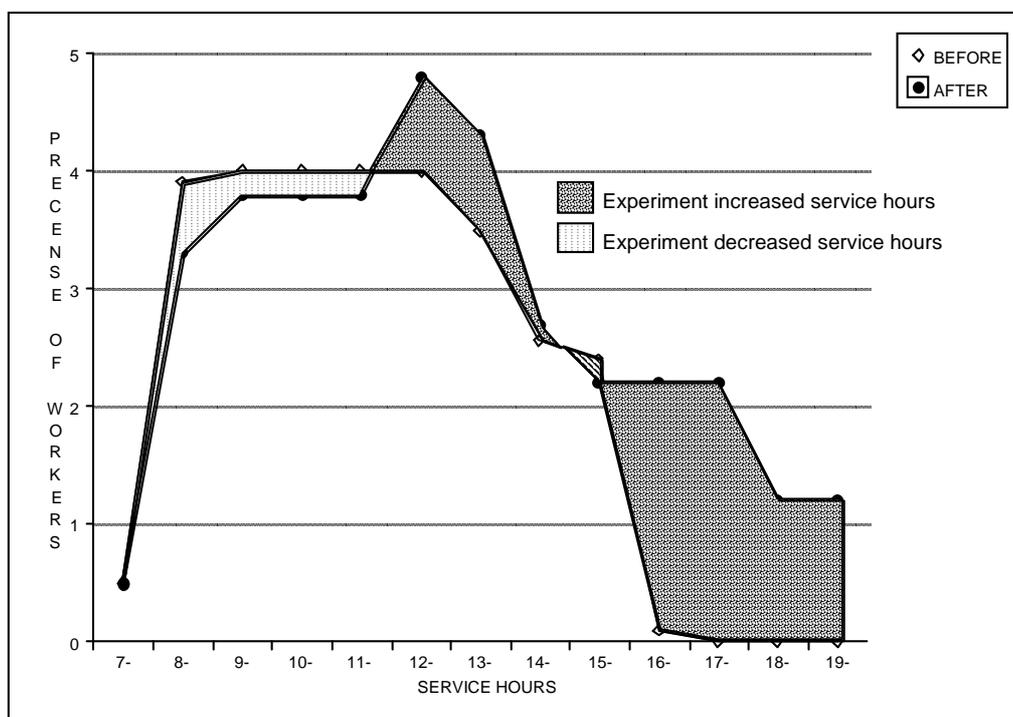


FIGURE 6 The reorganisation of working hours in a physiotherapy unit

In the end, the service hours in the municipal sector were not radically extended, at least not as radically as in the private sector. The reaction towards the extension of service hours was often reserved because the longer service hours would have increased the need for service volume. Furthermore, almost all the workers in the municipal experiments were women and radical reorganisation of working hours was met with opposition because of social boundaries.

6.4 Quality and Availability of Services

One of the principal motives of the municipalities was to improve the quality and availability of services, as well as to develop new working patterns. In the second questionnaire, the participants were asked how they evaluated the changes in the organisation of services and work during the working time experiment. The second questionnaire included four items indicating changes in services. Most employees (73%) agreed that the efficiency of work increased during the experiments, and about half of the employees (48%) agreed that the working time experiments supported sensible ways of organising work.

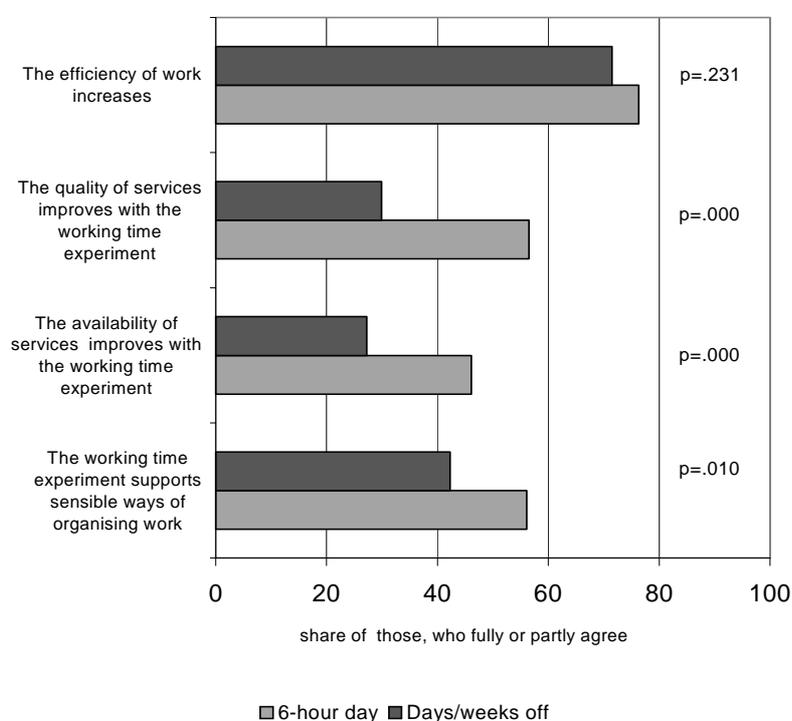


FIGURE 7 Different forms of reduced working hours and perceived changes in the organisation of work.

In the study, I was especially interested in comparing the effects of different ways of shortening working hours on the quality and availability of services. The analysis revealed that the respondents working in 6-hour shifts evaluated the changes in services more positively than the employees who were involved in other forms of reduced hours (Figure 7). The difference was the most obvious regarding the quality and availability of services.

The employees with the 6-hour shifts felt that services were improved with the extended service hours and the employees could take on more responsibilities. Recruiting new, young workers improved the functionality of the working units, although the number of total working hours remained constant. The training of new workers naturally expended the resources of permanent personnel. In most units, one of the premises for starting the experiment was that the new workers who covered the working time reduction would be educated and professionally qualified.

6.5 Municipal Working Time Experiments and Work Exhaustion

According to research carried out by the Finnish Institute of Occupational Health in the mid 1990s, over half of the working population suffered from some degree of work exhaustion and every fifth was strongly fatigued. Of the working people, 7% suffered from severe burnout. Among women, the degree of work exhaustion was higher than among men, and the degree of exhaustion increased with age (Kalimo & Toppinen 1997). The weekly working hours in full-time jobs correlated with work exhaustion, especially when the weekly hours were exceedingly high.

In the early 1990s, the quality of working life in the municipal sector fell. For example, two thirds of the employees in the municipal sector estimated that during the year 1996, the working tempo and feeling rushed at work had continued to increase. With the time pressure, the mental strain of work had also increased. The increase of mental and physical strain was more common in the municipal sector than in other employment sectors in Finland (Ylöstalo & Kauppinen & Heikkilä 1997; Ylöstalo & Rahikainen 1998). Rajala (1997) states in her research – concerning the stress factors of work – that the most dysfunctional characteristic of work in Finnish municipal sector is the relationship between work and time. The urgency of work strains the workers both mentally and physically. For example, the mental strain of care work becomes evident in the perception that there is not enough time for comprehensive consideration of customer needs. Naturally, the main cause of time pressure in the public sector is shortage of personnel. In addition, a customer-driven pace of work, recurrent interruptions, fragmented working days and difficulties in scheduling one's work are factors that cause time pressure predominantly in female jobs (Järnefelt & Lehto 2001).

The municipalities showed particular concern for their personnel and regarded the working time experiments as an expedient for reducing strain and job exhaustion, and for improving work abilities. Of course, the municipalities had different motives for taking part in the experiment, but the most frequently mentioned reasons for initiating the experiment were the desire to improve the work ability and job satisfaction of regular employees, and to improve the employment situation.

The aim of the next chapter is to examine the relationship between shorter working hours and work ability¹⁸. The relationship was examined in three ways. First, we asked whether shorter working hours reduced job exhaustion by comparing the experimental and control groups (group effect) in the ESF municipalities (six-plus-six experiment) on three separate occasions (time effect). We were especially interested in the possible interaction between the time and group effect, which would indicate that the changes over time are different in the experiment and control groups (Nätti & Anttila 1999).

The results in Figure 8 (more detailed information in the Appendix 5) indicate a statistically significant time-group interaction ($p=0.026$). The figures indicate that before the experiment (in the first questionnaire), the level of job exhaustion was higher in the experimental group. In the later surveys, the difference disappeared. Thus, job exhaustion decreased more in the experimental than in the control group.

¹⁸ Job exhaustion is used as an indicator of work ability. Job exhaustion was measured congruent with the burnout model of Maslach and Jackson (1981; see Mauno & Kinnunen, 1999). However, only six items concerning the feelings of fatigue, which develop as a person's emotional energy becomes drained at work, were used (e.g., I feel emotionally drained). The respondents answered based on five response options (1 = never, 5 = always). The Cronbach alpha for the scale was 0.87 in the first questionnaire. To analyse the effects of different ways of reducing working hours (6-hour shift, day off, week off), a panel data set covering those persons who responded to the first and second questionnaires in the three ESF municipalities and in the other 14 municipalities was used. This two-phased panel data set includes 567 respondents. The results indicated that only a few workers suffered from continuous work exhaustion. However, over 40% of the respondents felt that they were often or quite often worn out at the end of a workday or that they were working too hard.

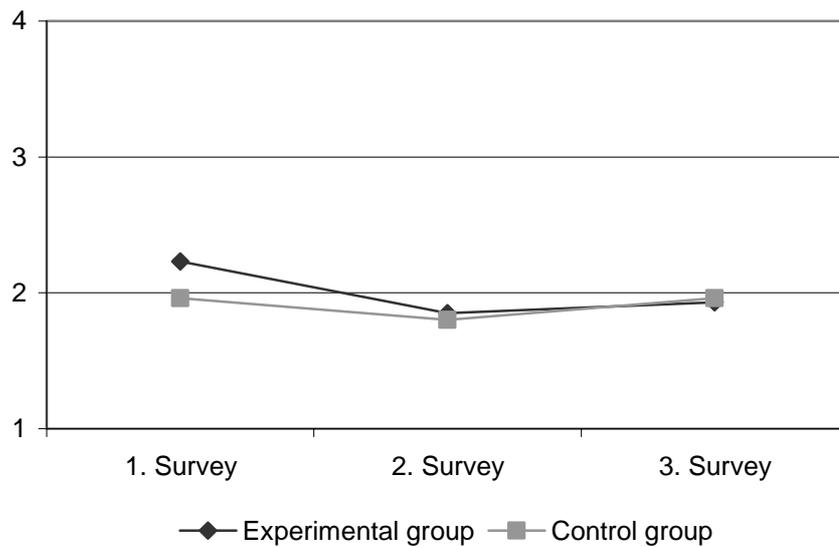


FIGURE 8 The effects of reduced hours on job exhaustion in the three ESF municipalities.

With the second set of data, which included all the 17 municipalities and two questionnaires, we examined the effects that the different forms of shorter working hours (6-hour shift, day off, week off) had on job exhaustion (Figure 9, more detailed information in the Appendix 6). According to the results, job exhaustion decreased both in the 6-hour day and in the other forms of reduced hours (day off, week off). However, there was no interaction between time and group (except with two items), indicating that both forms of reduced hours had a similar effect.

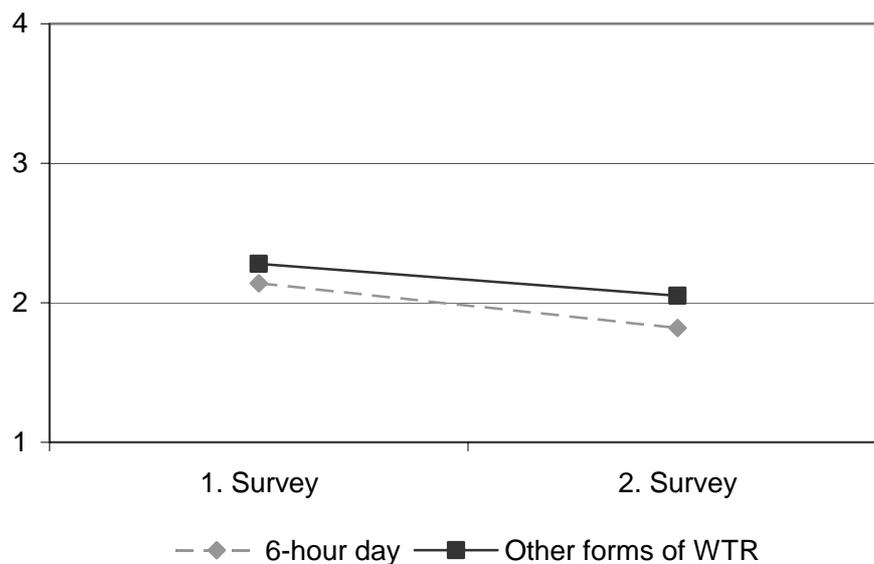


FIGURE 9 The effects of different forms of reduced hours on job exhaustion in the 17 municipalities.

Third, we examined the effect of the different forms of reduced hours on job exhaustion at different levels of exhaustion (Figure 10, more detailed information in the Appendix 7). The respondents were classified into three groups (low, medium and high exhaustion), based on perceived job exhaustion in the first questionnaire.

The results indicate that the effects of reduced hours on job exhaustion were most visible in the high and medium exhaustion groups. In contrast, in the low exhaustion group, job exhaustion increased during the experiment. Furthermore, especially in the medium exhaustion group, the 6-hour shift was more powerful in reducing job exhaustion than the other forms of reduced hours.

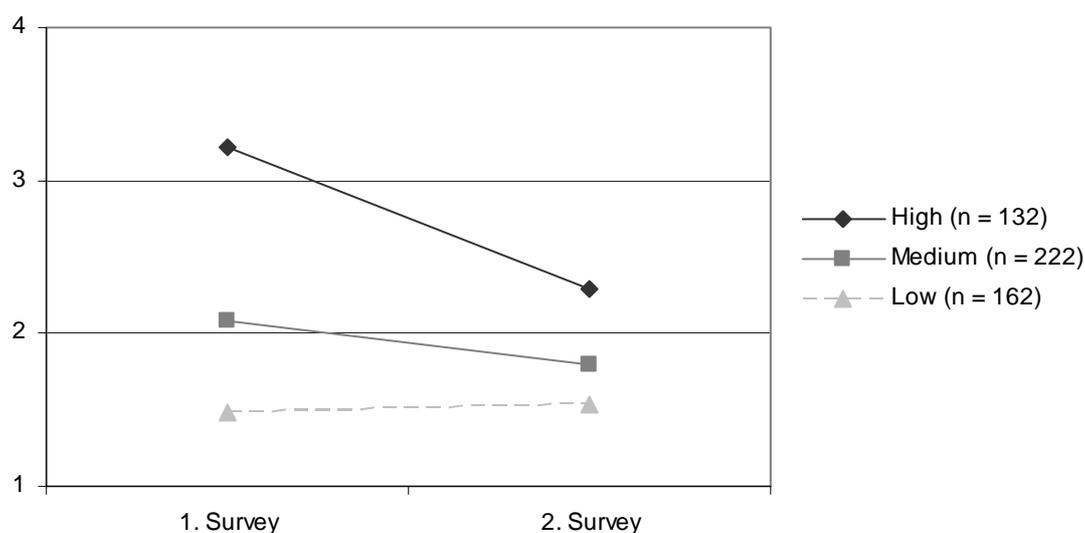


FIGURE 10 The effects of different forms of reduced hours on job exhaustion in all 17 municipalities at different levels of perceived exhaustion in the first questionnaire

6.6 Working Time Reduction in a Full-Time Culture

Temporal order and professional time

Professional commitments, ethical codes and occupational roles could be associated with different approaches to time at work. Zerubavel (1979) found differences in the time structures of doctors and nurses. Nurses' time was dictated daily by clock, whereas doctors' time was marked by tasks. Närvänen (1994) examined the temporal order in health care organisations and found similar informal rules in different occupational groups concerning time usage. Time at work for doctors, as well as some nurses in higher positions, was associated with the norm of professional time. The daily working time was not strictly defined by a formal schedule, but by the task at hand. Assistant nurses defined their working hours in terms of a formal schedule. Organisational changes, such as the introduction of teamwork, implied adapting to a new

temporal order in each group. The changing temporal order caused problems concerning the synchronisation of work routines between the nurses and doctors. Changes in former daily routines were a problem as well. Problems regarding sequencing and synchronisation resulted in difficulties in interpreting what tasks had actually been done.

Närvänen (1994) noticed that in case of organisational change, hierarchical health care organisations tend to fall back into the previous temporal order. Especially senior employees and others with long work experience preferred the work routines and divisions of labour that had previously characterised the ward.

Sense of entitlement

Susan Lewis (1999) has pointed out that a sense of entitlement is part of the cultural construction of working time. It is based on beliefs about what is approved, acceptable and in accordance with social norms and practice. A perceived sense of entitlement relates to beliefs in work, family and gender roles. It is a subjective experience, but also an essential part of the social processes within the organisation's culture and in a wider societal context (Lewis 1999; Lewis and Smithson 2001). For the participants, it was important to feel entitled to reduce their working time, as they were acting against the portrait of the 'ideal worker'. The acceptance had to be received from the wider societal surroundings, as well as within the organisation, household and self (as an employee, as a mother, etc.).

Gender is strongly related to the sense of entitlement. Women feel that they have to, and are entitled to, adapt work and career because of family, whereas men feel the opposite, that they have to, and are entitled to, adapt family life because of work (Lewis 1999, Kivimäki 1996). Women have a culturally and socially legitimated position to work less, even with a smaller salary, inside a full-time culture. Women do most of the household work (Sutela 1999b) and make more compromises because of family (e.g. Nätti & Väisänen 2000). The gender aspect can partially explain why nearly all the participants in the experiment were women – only women felt entitled to reduce their working time.

The lack of approval, or at least suspicion of it, in a wider societal framework, was reflected in an episode told by an assistant in a day care centre. When she had met an acquaintance in the street, she had to shamefully explain: "At the time I am participating in an experiment of shorter working time, which is why I am shopping at two o'clock in the afternoon" – a time when Finnish women are usually at work. Considering the prevalence of part-time work elsewhere, for example in the Netherlands, it would be highly unusual that especially women would have to feel guilty and explain why they are shopping in the afternoon.

A shorter working time can also lead to a situation where the employees feel inadequate because they do not have enough time to do all that is required, or possible, during a longer working day. This relates to the perception of a 'fair day's work' – an understanding of the amount of work that should be completed

within a working day. This perception is also socially constructed and based on an agreement and a 'norm'. A fair day's work is based on full-time work. Problems can, and did, arise when the time available for the fair day's work was shortened. This caused feelings of guilt and inadequacy in some participants. An assistant in a day-care centre told that she sometimes had to hide dirty pans in the cupboard because she did not have time to do the dishes in a 6-hour day, even if it was part her understanding of a fair day's work.

However, a clear distinction between the experiments of shorter working hours and part-time work should be made. The 6-hour daily working time is in the defined borderline between part-time and full-time work (30 hours per week). The 'six-hour full-time', as it was called from time to time, differed from part-time work in the status that it had gained in spoken language and in practical terms of the work contract as well. In practice, the workers in 6-hour shifts did not feel that they were working part-time. Their contribution to work was equivalent to the 'normal' contribution of 8-hour days and their position in the organisation was equivalent. The situation was clearly different from the time pioneers (see Hörning et al. 1995), i.e. those voluntary part-timers whose bargaining power was usually inferior to their employers and whose shorter working time was commonly seen as a lifestyle choice.

However, I noticed some differences in this respect between the municipal organisations and industrial firms. Especially in the small and medium-size firms, the support from the top management reached over the middle-level managers. Productivity achievements convinced most of the organisation members to meet the standard of a fair day's work. In the municipal sector, the interviews suggested that some of the participants had experienced resistance from their supervisors when they had expressed their desire to participate in the experiment. Thus, the experimenters felt that their closest managers did not accept their 'personal choice' to participate. Furthermore, several of the interviewees told that the experiment caused problems in the work communities. The problems arose between sub-groups, and between those participating in the experiment and those who did not. In practice, the participants were viewed as privileged to work only 6-hour days, which caused jealousy within the organisation. Less than perfect organisation and sharing of work tasks caused confusion. These results are in line with Büssing's (1997) research, which showed that the extended possibilities of part-time work, without the re-building of communication and cooperation systems in health care organisations, made the personnel's situation even worse.

One of the most important preconditions to the successful implementation of the reorganisation and reduction of working time was flexibility by the substitute workers. Some work organisations agreed that the permanent employees worked only the most desired morning shifts, whereas the substitute workers worked the most undesired shifts in the evenings. For the permanently employed, according to an interview, the evening shifts were "totally impossible", mostly because of family situations – such as children and day care arrangements. Consequently, the entitlement to work shorter hours was constructed to support the desires of the permanently employed (the core

workforce), whereas the new recruits (the marginal workforce) had to adapt to the undesired shifts. Nevertheless, from the substitute workers' viewpoint, getting to work was better than no work at all. Overall, the different positions and situations within the organisation can affect the privileges and rights that the workers perceive as having. The prediction is that the demand for 'family-friendly' policies, for example, may decrease because of increased job insecurity that deteriorates the perceptions of employee rights (Lewis 1999).

6.7 Comparing the Experiments in Public and Private Sectors

In this chapter, I will collect the experiences from the manufacturing and municipal experiments and further discuss the conditions of working time reduction and reorganisation in industrial production and services.

TABLE 10 Application of the six-plus-six-hour model in industry and municipalities

	Manufacturing firms	Municipal services
Funding	- No subsidies	- State subsidy for the municipality
Nature of work	- Production work	- Care work, other services
Main occupational groups	- Manual workers in metal and chemical industries	- Health care and social services
Motives for working time experiments	- Fluctuating customer demand - Adaptation strategy - Better use of capital investments	- Job sharing - Better work ability - Extension of service hours
Local negotiation	- Easy	- Laborious
Working time models	- 6-hour shifts	- Shorter working day - 4-day working week - 3-week working month
Wage compensation	- Usually full	- Partial (wage reduction 0-13%)
Wage system	- Incentive wage system was strengthened together with working time reduction	- No incentive wage
Breaks	- Notably compressed	- Minor changes
Operation time	- Usually extended	- Minor changes
Effects on employment	- Positive or neutral	- Partly based on state subsidy - Usually one new recruit per three permanent workers reducing their working time
Role of new workers (substitutes)	- Full wage compensation	- Usually recruited on part-time basis (no wage compensation)
Possibilities for increased productivity	- Great when implemented together with team work and the renewal of the wage calculation system	- Small because of the work's nature

When compared to the municipal working time experiments, the starting points and implementation of the 6-hour shifts in the manufacturing firms were quite different (Table 10). The possibilities offered by working time reduction and work reorganisation in the public sector to increase overall productivity are questionable – at least from the standpoint of economic theory. However, the shorter working time in the social and health care sector may have positive long-term effects on the working capacity of the employees (Olsson 1999).

The development of work productivity in the public services does not correspond to productivity changes in industry. This is due to the nature of work. It is understandable that, for example, in caring for the sick and elderly, teaching or other comparable occupations, the improvement of work efficiency or continuous and fast growth of productivity is not possible because of the content of this kind of work. The service tasks take time, which cannot be significantly reduced without deterioration in quality (Esping-Andersen 1996).

In the private sector, the compression of working time by reducing the breaks was characteristic of the experiments applying the six-plus-six -hour model. It is partially through this model that the increased productivity was attained. Many of the tasks in the social and health service sector require shared planning time in the work community. When the target of reduced working hours is to increase the efficiency of work (i.e. to increase the produced services per working hour), the time used for planning becomes a critical factor. If the planning time remains unchanged when switching to shorter working days, it will burden the short day relatively more than the long day.

The extension of service hours would increase the availability of services, but it would also increase the demand, which – because of widespread shortage of resources – can lead to resistance against the extended service hours inside the municipal workplaces. Furthermore, the public sector faces the problem that investments in the improvement of services and productivity – in this case labour costs – are not fully redeemable from the customers. Taxes and state subsidies fund the municipal services, and the clients' fees form only a minute fraction of their total income. Thus, there is no direct correlation between output and finances. The municipalities do not benefit financially by providing higher-quality services and increasing their availability. The prerequisite for implementing the six-plus-six model in the public sector is either the reduction of wages of participating employees, or receiving a state subsidy for hiring unemployed people. The salaries of the employees taking part in the public sector experiments were reduced by 0–13%, on the average 8%, of the annual gross salary.

In most cases, increased demand is an essential factor behind the implementation of the six-plus-six working time model in manufacturing companies. In Wallas-Marin, the experiment lasted three months, covering the seasonal peak in customer demand. In Nokian Tyres, the number of 6-hour shifts varied with changes in demand. The firms searched for an optimal volume of production through the prolonged operating time, but they also looked for a competitive advantage from the shorter hours. Orthex was trying to improve the quality of its products with the 6-hour shifts. An essential

precondition for the profitability of shorter hours is the possibility to derive profit from a higher volume of production, or from higher quality.

In the public sector, providing employment was the most important objective in the experiments that reduced working time. For that purpose, the six-plus-six experiments were regarded as designed and institutionalised work sharing, unlike the experiments in the private sector, where the recruitment of new workers was not an aim of the working time reduction.

7 THE TWO EXTRA HOURS

Seppänen introduced the dayshift model especially for human reasons. However, as he assumed, solid time institutions are strong hindrances to such a radical change. The wage earners' preferences, described in Chapter 3, showed that the six-plus-six –hour scheme includes contradictory elements that confront the institutionalised temporal practices of society. The employees are especially interested in longer continuous blocks of free time and, if possible, on longer weekends with Fridays off.

The negotiation processes of the case organisations brought up the question of social qualities of different times. The industrial experiments showed that the employees cling to their previous extra holidays (*Pekkas-days*) and resist the compensation through daily reductions in working time. In the female-dominated municipal sector, the distribution of different wage reductions (Table 9) between daily, weekly or even longer reductions indicated the value of different social times. Local negotiations and voluntary participation gave empirical evidence of the different qualities between time blocks, which quantitatively correspond to each other.

Studies on time and lifestyle in France and Sweden (e.g. Anxo et al. 2000, 264–269) have shown that successful implementation of the reduction and/or reorganisation of working time depends on several factors, of which three key factors can be pointed out. First, the magnitude of the working time reduction has an impact on how non-working time is experienced; below a certain level of reduction, the impact on lifestyle appears marginal. Second, the form of reduction plays a central role because it determines the usability of the time that was freed up. In this respect, researchers stress the importance of being able to put together substantial blocks of free time. They also stress that the distribution of this time over the day or week is of central importance, as it influences the perception of the work/non-work linkage. For example, the placement of working time – whether in the morning or evening – is important in this respect. Third, the regularity and predictability of working time affects the quality of non-working time, e.g. whether activities can be planned and

working time be linked with other social times, especially those fixed by inflexible schedules, such as many public services.

Since the boundaries between private and public time, previously secured by work and leisure institutions, as well as the boundaries between sacred and profane time, previously secured by religious institutions, have become blurred, making qualitative distinctions about time falls on the individuals and involves particular exertion. What makes the issue even more complex is that leisure is part of identity formation. It seems that this leads to efforts to strengthen qualitative distinctions in the flow of time, and furthermore, to condensation of both work and leisure. It is expected that leisure is devoted to specific activities that involve time investments that consist of sufficiently large blocks of time. Can the two extra hours per day provide usable free time? In this chapter, I will examine the effects of 6-hour shifts on employees' daily life and work-family relations. Secondly, I will compare the different forms of reduced hours in this respect.

7.1 Women's Time, Men's Time and Community Time

The 50-year history of 6-hour days at Kellogg's company ended in the 1980s with a situation in which the workers, over three-quarters of whom were women, were fighting for the shorter working time. According to Benjamin Hunnicut's interpretation, the reason for the feminisation of the 6-hour day is that shorter working time has a different meaning for men and women. The male workers returned to the 8-hour day, partly because their leisure was devoid of substantial, meaningful content. Hunnicut's interpretation is also in line with Robert Putnam's thoughts. Putnam claims in his book "Bowling alone" (2000) that the social knit of American society is unravelling and social capital is declining, and as a result, the prosperity of the nation is threatened. Due to the long working hours, increased time pressure, electronic mass media – especially television – and the generational shift from the civic-minded generation of the mid-20th century to the 'me-oriented generation', Americans are becoming disconnected from community activities and different kinds of organisations, but also from their close social relationships – from families, friends and neighbours.

The social institutions of work and leisure complement each other and define in a collectively valid manner what is legitimate and normal in occupational and what in leisure time (Garhammer 1999a). These institutions are socially constructed and gendered (Davies 1989). Although the roles of women and men have changed to some extent because of women's full-time work and the somewhat more equalised distribution of household work during the 1990s, women still hold the main caring responsibility at home (e.g. Miettinen 1997; Van der Lippe 1998; Sutela 1999b, 59–62; Gershuny 2000; Niemi

& Pääkkönen 2001). The caring responsibility affects the time perception¹⁹ of women. Women's time, especially mother's time, 'belongs' to greater extent to the family than to herself, whereas men's time 'belongs' to men themselves (e.g. Kivimäki 1996; Warren 2000; Bradley et al. 2000).

During the interview period, I noticed a difference between women and men's orientation to their increased non-work time. As men talked about large-scale 'projects' that involved large-scale time investments, such as building a racing car or repairing a summer cottage, women talked about and dreamed of changes in their daily paths in time and space. In a way, men concentrated on time as having a meaningful content for their leisure, whereas women were looking for a more porous time. In women's stories about the two extra hours, the distinction between my time and others' time was emphasised. Housework is not a category without qualities. It includes both constrained activities and activities in which time is devoted for self.

The experimenters emphasised the meaning of the new porous time, especially if they had commitments to children or other dependents. Thus, particularly those whose time was tightly embedded in daily routines benefited from the daily working time reduction. This was the case in several municipal experiments, which enabled the participants to work morning shifts because the substitutes were the flexible part of the labour, working the evening shifts. Some of the experimenters found a free moment in the afternoons, between the morning's work shift and the 'second' shift at home. This moment was not devoted to any specific task but regarded as private time devoted for self, and it could start already at the workplace. A physiotherapist told that after her morning shift, she just sat down for about 20 minutes at the workplace and had a chat with her colleagues. This would have been completely unthinkable in the 8-hour shift.

Full-time work and caring responsibilities mean that especially women with dependents have a very tight schedule. The interviewees stated that because of the 6-hour working days, they had a bit more time for relaxation, which positively affected their well-being and their time with family.

¹⁹ Miriam Glucsmann (2000, 110-113) writes that "bringing a gender perspective to the analysis of time should not imply that there is a 'female' or 'male' experience of time common to all women or men". Her research on 'weavers' and 'casual' workers, Englishwomen born in the 1910s and 1920s, showed that there are also differences between women in the gendered structuring of time. Well-paid weavers could maintain a clear temporal and spatial distinction between work and non-work time and having time for themselves, whereas the demarcation was more blurry for the casual workers with part-time domestic work. Their non-commodified time was not distinguishable from the commodified time in which it was embedded. Adam (1995, 97) points out that dualistic definitions, such as cyclical versus linear and task- versus clock-time orientation, need to be treated with caution because they re-create and strengthen existing dichotomies (see also Everingham 2002). However, there are certainly differences in the embedment of time. In this respect, it is understandable that feminist movements have particularly striven for a shorter working day and daily reconciliation of work and private life, arguing that adults have daily care responsibilities that cannot be postponed to weekends (Julkunen & Nätti 1994, 265).

“There have been no problems (because of the experiment) – a benefit has been that the hurry has decreased, I feel that I have like more time for the family, I think that if hurry decreases, it has an enormous impact on everything.” (Child care teacher)

“There are like these big changes, when I don’t have to rush like a maniac to collect my child from care, that when I worked until 4 I had enormous hurry to leave. (...) Now I have time, more time for myself and take care of home more. Now I often do that I go home first and do shopping and clean up and then I go and collect my child and I collect him earlier and that is nice to him as well.”. (Physiotherapist)

The reduced working time mostly meant, or the time use resulted in, having more time for the family, a less tight schedule and more energy to do housework.

“This has like improved that side in life, that now I like clearly have more time to do housework, that every time I start cleaning the house I do not have to feel irritated ‘cause I know that my working day is short, and I also have little more time for my hobbies.” (Dental nurse)

Some of the participants reported a ‘new’ and more unequal division of household work at home. Some told that because of the reduced hours, they now had more time for family, but also more household work. The evening shifts increased the workload at home. The ‘morning shift’ at home was not used for relaxation, but for housework, and as a result, when the ‘evening shift’ at work started, they already felt exhausted.

The workers in 6-hour shifts developed techniques for manipulating the extra free time. Some of them saved the socially valuable time by doing the necessary housework, such as cleaning, during the week because it would otherwise burden the weekend. Thus, they learned to conserve and transform time.

The Nordic model (Esping-Andersen 1990) of social services is more involved with the temporal structures of citizens’ everyday lives. For example, the service hours of childcare set limits to the working hours of parents, unless other people are involved in the care. Only few people reported major difficulties because of the unsocial hours. Mostly the participants adapted to the unsocial hours because it was part of the experiment, and for some the experiment provided a welcome change to the usual routine. In industrial experiments, especially in 24-hour organisations, the early morning shift was awkward for those with responsibilities related to the family. For single parents, the work schedules that depart from standardised ‘community time’ are nearly unfeasible. Dual earner families in which both parents had shift work reported difficulties in synchronising family timetables and unsocial work times. However, some dual earner families managed to combine the working hours in such a way that they were able to take their child(ren) out the day care.

7.2 Working Time Experiments and Work-Family Interaction

Combining work and family has been discussed at the national level (see e.g. Salmi & Lammi-Taskula 2000; Rönkä and Kinnunen 2002) and also within the European Union, e.g. European Network "Family & Work". The subject has received much attention in research because of the increasing proportion of women in full-time employment, and because it is implicitly understood to be more problematic for women than for men. Regarding the six-plus-six model, the key question seems to be whether quantity outweighs quality. This dilemma has repeatedly come up in the discussions about work-family relations. It is obvious that the best practices of combining work and family lives should take into account the rhythms and schedules of the urban way of life and the institutions of work time and leisure.

Finland is one of the Scandinavian welfare states where the public sector organises most of the welfare services. Childcare and other family services are mainly a responsibility of the societal services, not of the work organisations. It has been recognised in many contexts (Salmi 1999) that the official policies of Finnish work organisations are 'blind' to the employees' private lives, and that researchers, among others, have to raise the issue of 'family' in the organisations. In other words, despite the international discussion on 'family-friendly' organisations, and although many of the experimental organisations were women's workplaces, the six-plus-six model did not include among its objectives the facilitation of interaction between family and work. One of the interviewees pointed this out:

"It was like this that we thought that it was a little funny that we could not state, which I thought was stupid, that it is quite important in women's lives who have family, how to intertwine work and family together nicely, but when we applied (to the experiment), it was like made clear that we should not emphasise these things, although I think it helps me to cope with work and family when I can do six hours. (...) But we were not able to emphasise that; customer orientation and employment were important aims." (Physiotherapist)

All three elements – length, placing and tempo – of working time are important when the interaction of work and family is evaluated, although the presumption behind shorter working hours is often based on the belief that work has a negative impact on family only to the extent that it keeps people separated from their families. However, other work time characteristics, such as work tempo, are also essential.

Excursion into the quantitative data

Next, I will analyse the relationship between shorter working hours and work-family interaction²⁰ by comparing the experimental and control groups (group effect) in the ESF municipalities on three separate occasions (time effect). Interaction between the time and group effect would indicate that there are different changes over time in the experimental and control groups. The used method was repeated measures analysis of variance.

The figure 11 (more detailed information in Appendix 8) indicate that before the experiment (in the first questionnaire), the level of work's negative interference with family life was moderately higher in the experimental group ($F=3.69$, $p=0.06$) than in the control group, which may also have been a reason to participate in the experiment. This assumption was supported by the interviews. Several of the respondents mentioned that a reason for them to participate in the experiment was to be able to meet younger children when they came home from school, or simply have more time for their children and housework.

²⁰ Work-family interaction was investigated with six questions. Three statements measured work to family conflict ("Work or career interferes with responsibilities at home", "Work takes time that I would wish to spend with the family" and "I feel overtired because of my work"). The statements included five response options (1=never, 5=very often). The Cronbach alpha for the work-family scale was 0.73 in the first questionnaire (ESF municipalities). According to the results, 16% of the respondents felt that work often or quite often interferes with responsibilities at home, or work takes time from the family. Furthermore, 31% often or quite often felt overtired because of their work.

According to the Finnish Working Conditions survey (1997), a third of all salary earners felt that home responsibilities are sometimes neglected because of work responsibilities (Sutela 1999b), which is a greater proportion when compared to the respondents of this study. Furthermore, it has been reported that a third of all salary earners feel tired at least once a week (Sutela 1999a), which corresponds to the results of this study, although the wording of the questions is different; the latter makes no reference to feeling tired because of work.

Three other statements measured family to work conflict ("Family life interferes with work", "Family takes away time that I would wish to spend at work" and "I feel overtired because of family matters"). The Cronbach alpha for the family-work scale was 0.72 in the first questionnaire. The results indicated that only a few workers (2-9%) suffered from family-work conflict.

Consequently, the sum variables indicating work to family conflict were greater (mean 2.72, $SD=0.77$) when compared to family to work conflict (mean 1.99, $SD=0.68$) (during the first survey, the panel data). The findings – both of the level and the greater interference of work to family than family to work – were similar to the findings of other studies in Finland (Kinnunen et al. 2000) and internationally (e.g. Ginn & Sandell 1997; Frone, Russell & Cooper 1992). Regarding the level of conflict, a word of caution is in place: the wording in the different measures was not identical.

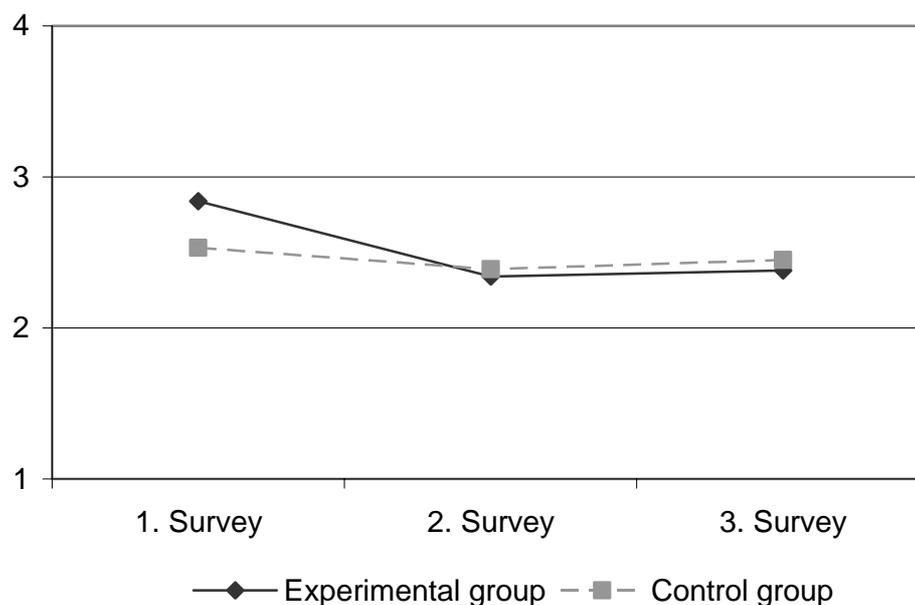


FIGURE 11 The effects of reduced hours on the reconciliation of work and family life in the three ESF municipalities

During the follow-up period (from the 1st to the 3rd questionnaire), the negative interference of work with family life decreased more in the experimental than in the control group. In addition, the results (see Appendix 8) indicate a statistically significant interaction concerning work's interference with family life. Thus, shorter working hours actually seem to reduce work to family conflict.

The perceived work-family conflict is related to both the family and work situation. Therefore, we were interested in which groups the effects of reduced hours on work-family conflict were the most obvious. We took children as a central indicator of the family situation, and presumed that having children causes more time and emotional demands and responsibilities. The results supported this presumption. The shorter hours reduce time-related work-family conflict among employees with children (significant interaction of group and time, $p = .01$) but not among employees without children ($p = .51$). The shorter daily working hours reduce work overload but also increase the amount of time for children and everyday routines (Anttila & Nätti & Väisänen 2005).

One indicator of the work situation is the socioeconomic status: the respondents were classified to blue-collar and lower-level or upper-level white-collar workers based on their occupation and own classification. Shorter hours reduced the feelings of work-family conflict among manual and lower-level white-collar employees ($p = .01$), but not among upper-level white-collar employees ($p = .30$). Upper-level white-collar employees are often in a situation where they have to do the same tasks as earlier, but during shorter daily hours; they feel that it is difficult to share their duties. They also typically have greater time autonomy than manual or lower-level white-collar workers (Anttila et al 2005).

The differentiated spheres of life in modern societies and the multiple involvements of individuals in these spheres make the distinction between the private and public essential. In this case, like in the separation between the sacred and profane, time has a segmenting function (Zerubavel 1981, 138–166). The distinction between private and public time is almost parallel to the distinction between the ‘person’ and ‘role’. The separation of these two spheres is – as mentioned earlier – related to professional roles.

Thus, professional work time norms and work time autonomy are a factor in influencing the experience of the work/non-work relationship. Particularly in the municipal experiments, some participants had had greater autonomy over working time prior to the experiment, which they had lost in the experiment. Similar findings have been reported internationally (Barnett & Gareis 2000). The greater autonomy was related to the high socioeconomic status. This is what the statistical analysis indicated as well: the experiment decreased work-family conflict only with manual and lower-level white-collar employees, not with higher-level white-collar employees. The loss of time autonomy had an adverse effect also in respect of work and family because before the experiment it had been possible to organise time in accordance with the requirements of the family. During the experiment, the employees were tied to the time schedules of other employees, which is why they had lost their time autonomy and felt that the experiment made the combining of time between work and family more difficult.

“Before I was like able to think, when I had my own operation room, I could like think that I have to take one of the kids somewhere on Thursday and then I won’t work in the evening then, that I will work later on Tuesday, or something alike.”(Dentist)

“(…) clearly that the more you have evening times (for the patients), the less you spend with family, that is I see my children and family markedly less than I did before.” (Dentist)

7.3 Comparison of the Different Ways of Reducing Working Time

Another aim of this study was to examine what the effects of the different ways of reducing working hours (the 6-hour shift, day off or week off) were on the work-family interaction. We did this by using the second data set, which included all the 17 municipalities and two questionnaires. An analysis of variance was carried out to study which of the ways of reducing working time had the greatest effect on the conflict experiences. Work-family interaction was studied with the same questions and sum variables as before.

The results in Figure 12 (more detailed information in Appendix 9) indicate that before the experiment (in the first questionnaire), the level of work’s negative interference with family life was lower among people who reduced

their working time by 6-hour shifts than among people who used other forms of shorter hours.

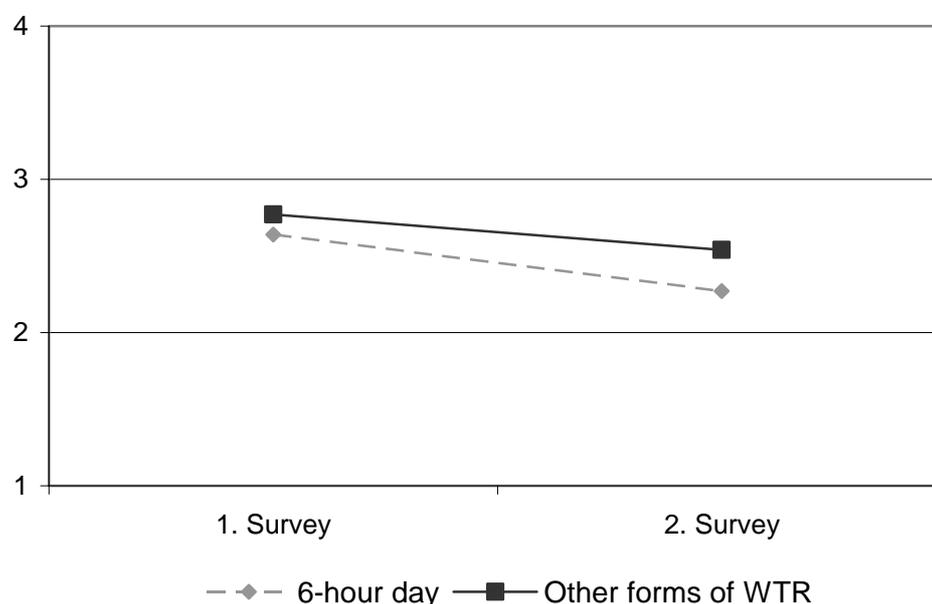


FIGURE 12 The effect of the working time reduction -model on work-family conflict (all 17 municipalities).

During the follow-up period (from the 1st to the 2nd questionnaire), work's negative interference with family life decreased more in the 6-hour shift than in the other forms of reduced hours. In addition, the results (see Appendix 9) indicate a statistically significant interaction concerning work's interference with family life. Therefore, the 6-hour shifts had a stronger (and statistically significant) effect on the decrease of conflict than the other forms of reduced hours.

Thus, the more balanced and equal the redistribution of new free time (daily reductions) was, the more it facilitated the work-family interaction. This is contradictory to overall wishes of the employees, i.e. desire for longer periods off rather than daily reductions. The working time reduction with extra days (connected to a weekend, if possible) or weeks off is a tempting opportunity. The longer periods off leave recurring everyday routines unchanged, both in personal life and in the organisation of work.

Garhammer (1999a) emphasises the importance of regularity by referring to a survey conducted in Germany in 1991–92, in which full-time employees without regular free weekends were asked to estimate their weekly leisure. Since the free hours were scattered throughout the week, the respondents did not consider these hours as leisure time, or as useful to their leisure activities. The more that people are able to make plans and have stability in their lives, the better they evaluate their working hours.

7.4 Use of Extra Time

Anxo et al. (2000, 265) found that in the case of working time reduction, the extra time off is not devoted first and foremost to new activities, but rather for existing activities. However, the researchers observed qualitative changes in the non-working time. When contrasted to the observed changes in work life, the non-work time becomes porous when the daily rhythm changes.

Several respondents emphasised that because of the reduction in working time, they now had more time for themselves and they had started new hobbies. The new time was even surprising:

“(...) but to start with, I couldn’t do anything, you would go home alone, to an empty home and wonder; it was difficult to do anything – what I did was just sit around and wonder about coming home that early, and you couldn’t start cooking or none of the usual housework that early. ...But now you know how to time and organise the housework and leave it for mornings I now sometimes have off, and I even have time for my own things.” (Childcare assistant)

The employees participating in the experiments were asked whether they had changed their use of time. According to the results (Figure 13), the new leisure time was mainly used for relaxation and rest (80% of the employees), being with the family and children (75%), fitness and exercise (72%), and housework (68%). On the other hand, only 5% used the time for another job and 19% for studies.

We were also interested in comparing the effects of the different ways of shortening working hours on time use (Figure 13). The general impression was that the differences were in most cases minor. The largest differences had to do with travelling and housework: the employees with days or weeks off – when compared to the employees with 6-hour shifts – were more likely to report increased use of time for travelling and housework.

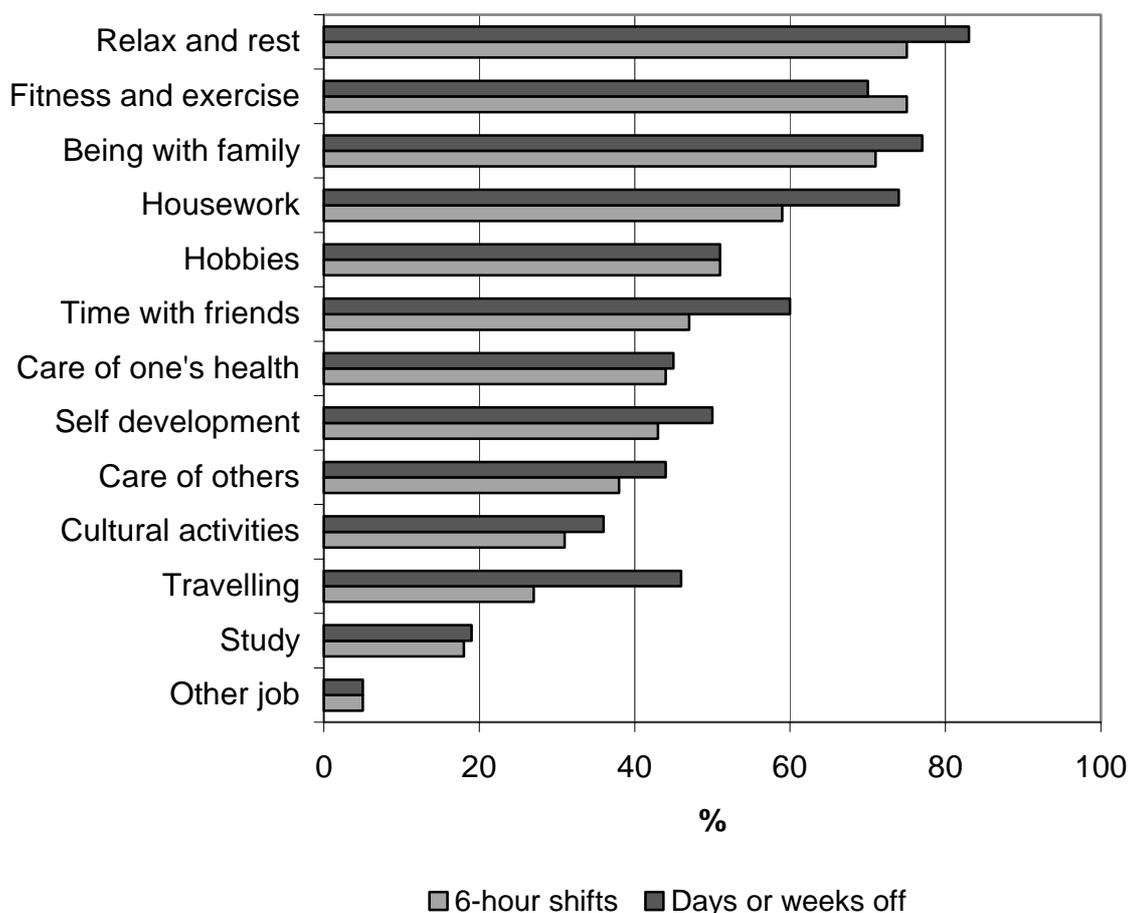


FIGURE 13 Proportion of people who increased their use of time for different activities due to the different forms of reduced hours.

The use of time varied with age as well (Anttila & Tyrväinen 1999, 102). The younger employees (less than 40 years old) spent more time with family and children, the middle-aged (40–49 years old) spent more time with studies, and those 50 years and older reported an increased use of time for relaxation and rest – when compared to the other age groups. To determine the gendered use of time, I would have needed to know men's time use in a comparable situation, but because of the lack of men participating in the experiment, I could not make such comparisons.

The changes in the use of time in municipal experiments were quite similar to the results from the other work sharing experiments in Finland. The motives of the employees who used the part-time benefit or job rotation scheme were usually time for oneself, time for family or other close people, time to study and engage in hobbies, and relief of the workload and work pressure (Julkunen & Nätti 1999, 102, 130). In a Swedish experiment of 6-hour shifts, the

employees used more time for social activities (e.g. with relatives and friends), children, housework and cultural activities (Olsson 1999, 83; Olsson et al. 1999).

7.5 Perceived Importance of the Experiments

As an overall evaluation of the reduced working hours, the employees of the municipal experiments were asked how important they felt the changes from the experiments were – from the perspectives of their work, workplace, services, leisure time and themselves (Figure 14). According to the results, almost all employees regarded the experiments as important from the perspectives of their personal life (91%) or leisure time (87%). Furthermore, about 60% of the employees evaluated the experiments as important from the viewpoint of their work or workplace. On the other hand, only one third of the employees ranked the experiments as important from the perspective of services (and customers).

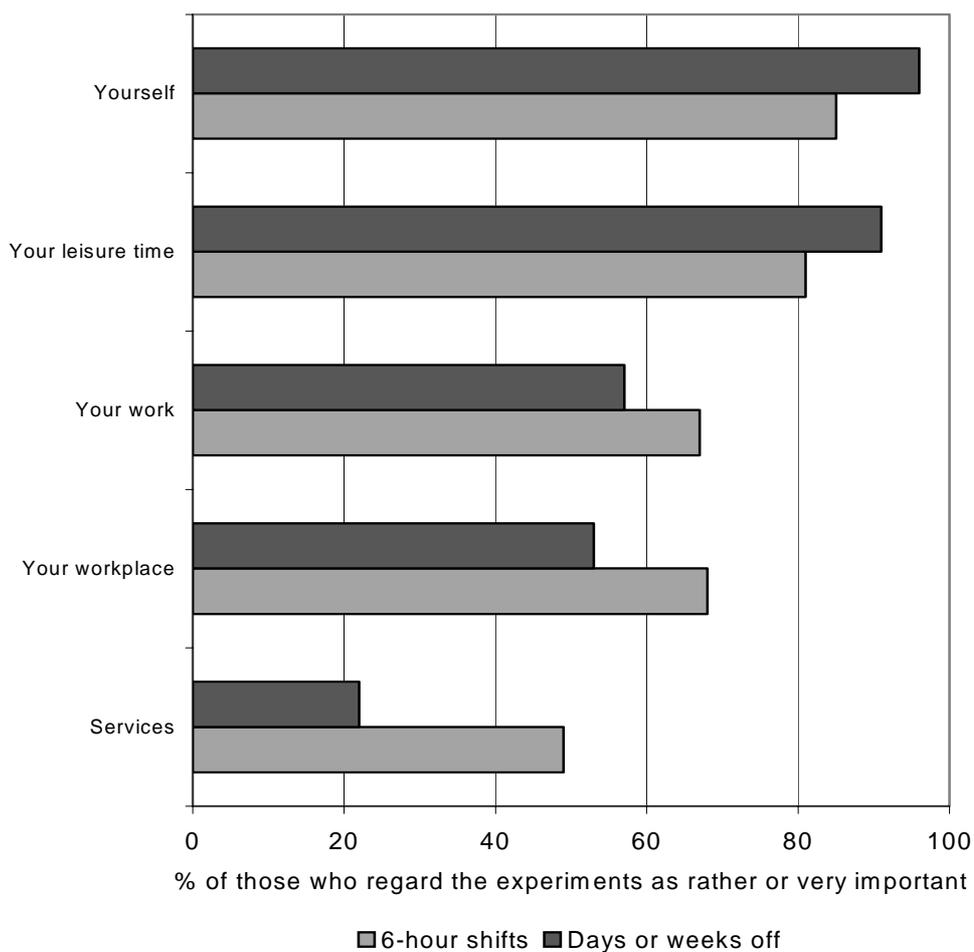


FIGURE 14 Importance of the experiments from different perspectives based on the form of reduced hours.

The employee evaluations varied with the working time models. The employees with 6-hour shifts – when compared to those with days or weeks off – regarded the experiments as more important from the viewpoints of their work and workplace, and especially of services and customers. These views are explainable by the reorganisation of services; the 6-hour shift changed the organisation of work, improving the availability of services, while the days and weeks off did not cause any major reorganisation of services or work. On the other hand, the employees with days or weeks off evaluated the experiment as more important from the viewpoint of their personal life and leisure time (Anttila & Tyrväinen 1999, 103). This viewpoint is a result of the fact that days or weeks off are desirable for personal life and leisure time.

8 CONCLUSIONS AND DISCUSSION

This research has analysed the experiments with 6-hour shifts in Finland after a severe depression and during a poor employment situation. The experiments were tightly associated with the societal context of the mid-1990s. In highly disputed questions, such as working time reduction, temporary experiments are safe arrangements when compared to final reforms. The six-plus-six model caused significant dissension among social partners regarding the impracticability of a large-size implementation of the model. However, working time policy-makers seized the chance at experiments in several occasions during the depression. The six-plus-six model was also a natural object for experimentation and evaluation research.

The experiments offered rich and unique research material. This study concentrated, on the one hand, on industrial sector shop-floor organisations, with specific bottleneck problems in production, and on the other hand, on public sector health and social care organisations, where most of the participants were blue-collar workers. Most of the participants, both in industrial and municipal sectors, were people whose time-money exchange relationship was quite explicit and the demarcation between work and non-work, or public and private time, was fairly sharp. They knew what they would get in exchange of the shorter working hours. Thus, this study discussed working time reductions and reorganisation in organisations that were dealing with traditional production problems, and among traditional wage earner groups with quite clear time-wage exchange relationships. In the first chapters of this book, I assessed that the logic of working time reduction is becoming obscure, especially in work environments that are characterised by knowledge work, professionalism, individualisation of job contents, result-based wages and blurring limits between working time and other times. I found some basis for this presumption from the 6-hour experiments implemented in white-collar organisations.

The experiments in the industry and municipalities were highly gender segregated. In the industry, most of the participants were men. However, the municipal working time experiments with wage cuts did not tempt men to

participate; instead, almost all the participants (94%) were women, though several municipalities tried to implement experiments in male-dominated work units. The experiment provided an interesting opportunity to analyse shorter working hours in a full-time culture, in which the 'ideal worker', regardless of gender, works full-time. However, women have a culturally and socially legitimated position to work less, even with a smaller salary, inside the full-time culture (see Walton 1998). The sharp gender division among the participants tells a clear story about who were entitled, or obliged, to reduce their working time, even when their salary was reduced: women and mostly women with children. Related to this, Julkunen & Nätti (1999) state that (Finnish) women seem to act as 'time pioneers' (see also Hörning et al. 1995). They exhibit the courage to opt for shorter hours, but on the other hand, their choices are indicative of the fact that they tend to solve problems in working conditions individually, when these problems actually deserve collective solutions in the form of reduced working hours.

8.1 Time, Timing and Tempo of Work in the Industry and in Public Services

To analyse the six-plus-six model in case organisations, I made a conceptual separation between the three main elements of time in work organisations: the length of working time (duration), the placement of working time (timing) and the use of working time (tempo). Historical and empirical organisation studies show that there is a close interrelationship between these elements, and therefore, changes within one are usually linked to changes within the other two. Thus, these elements have to be evaluated simultaneously. Working time reductions with significant cuts in employee salaries are unusual. This study showed that maintaining the existing wage level was the unconditional precondition for agreeing to work shorter hours. Therefore, the reductions in the length of working time had to be compensated for by increased productivity of capital (intensification of the use of capital investments by reorganisation of operating hours) or increased productivity of work (intensification of work), or both.

I described how the three elements – time, timing and tempo – of working time were reorganised and combined in the case organisations. Naturally, these changes had an effect on work, operations and service hours. In the private sector machine-bound work, the more efficient use of capital with increased production time, compression of working hours through shorter breaks and increased productivity made it possible to maintain the existing wage level and make the working time model economically profitable. On the other hand, the abolition of extra holidays (*Pekkas-days*) and breaks, as well as the faster working tempo resulted in the effective working time remaining almost the same as it was previously.

In addition to the technical reduction and reorganisation of working hours, positive economic results were based on organisational changes, which can be characterised as social by nature. For example, teamwork and the empowerment of employees, which the management connected with efficiency achievements, were utilised in all companies. However, all the participants felt that the reduction and reorganisation of working time had a central role in realising the changes. Together, the introduction of teamwork into production organisations and the renewed wage calculation system and working time model created an entirety in which the different elements supported an organisational reform from a hierarchical model towards self-regulating work teams that internally control the level of productivity. Controlling the presence of workers was transformed into controlling the output. This process was not self-evident. In all cases, there was a lot of suspicion and fear during the planning stages of the experiment, and consequently, the agreement's period of notice was short in all cases. The suspicions were particularly related to changes in power and control relations, in which both the employer and employees have the most to lose.

Shortly after the launching of the first public sector experiments, I noticed that the development of work productivity in public services did not correspond to productivity changes in the industry. This was due to the nature of work. Service tasks take time, which cannot be significantly reduced without deterioration in quality (see Esping-Andersen 1996, 78–81).

Correspondingly, in the private sector, the compression of working time through shorter breaks was a typical feature of the experiments. The work communities in social and health services require shared planning time, and if the aim of the reduced working hours is to increase the efficiency of work (i.e. to increase the quantity of services per working hour), then the time used for planning becomes a critical factor. Some work communities were innovative and reorganised the entire process of planning and information flow. This succeeded only with management cooperation. Some other units encountered problems with rigid practices concerning decision-making. The experiences from the private and public sectors showed that the reorganisation of work presumes a redefinition of power relations.

One of the main motives of the municipalities was to improve the quality and availability of services and to invent new working patterns. Altogether, the public sector organisations play an essential role in the time structures of people, especially families. Generally speaking, public sector service hours hold a twofold question in respect of community time: prolonging the service hours of public services increases the availability of services (humanising the time structure to meet the needs), but at the same time it increases the diversification and individualisation of the working time of employees. For example, a physiotherapy unit in Espoo was able to increase the service hours during the working time experiment, making the services more available. Instead of closing at 4 p.m., the unit closed at 8 p.m. Another unit that received positive feedback from the customers was a childcare centre in Espoo. The parents welcomed the longer opening hours, with the centre open until 9 p.m.;

however, the employees clearly stated that the longer service hours were not desirable because they did not want to work the evening shifts.

The experiments did not give evidence of any one specific effect on service hours. Instead, the effects varied between organisations and units. The effects have to be analysed in parallel with the quality and productivity of services and the experiences of the employees, which makes the analysis even more complex. The participants reported positive changes in the quality and availability of services, especially in the case of 6-hour shifts. One possible explanation is that the 6-hour shifts, in comparison with the other forms of reduced hours, allow more flexible working time arrangements.

8.2 Contradictory Effects on Employment

The success of the working time experiments is often evaluated based on the realised employment effects. The research material gathered from the case study organisations showed that the experiments satisfied the condition of positive employment outcomes. Several simultaneous processes of work reorganisation had an adverse effect on employment, which made it difficult to evaluate the employment effect of the working time model. The teams for working time experiments were often put together by internal transfers. The removal of earlier leave time (*Pekkas-days*, resulting from working time reductions in the 1980s) diminished the effect of the experiments on employment because the need for reserves was smaller. Furthermore, working without breaks reduced the need to fill in for the workers who were taking a break. In addition, the fact that the foremen did not typically adopt the 6-hour shifts led to the establishment of self-controlling working teams, which reduced the need for foremen.

The potentially favourable effect on employment of these experiments was largely counterbalanced by the rise of efficiency. The increased efficiency, brought about by the shorter working hours, can even nullify the employment effect. However, the employment effect of shorter working hours depends critically on the utilisation of capital, as Cette and Taddei (1993) have pointed out.

In the public sector, providing employment was the most important objective in the experiments that reduced working time. For that purpose, the six-plus-six -hour experiments can be regarded as designed and institutionalised work sharing, unlike the experiments in the private sector, where the recruitment of new workers was not an aim of the working time reduction.

Experiments in the private sector were divided into two groups. In the offensive experiments, the firms tried to reorganise working time more efficiently in order to facilitate competitiveness. In the defensive experiments, the firms aimed to preserve employment relationships in a phase of low

demand by shortening the working hours with the consent of employees, but also by slightly cutting the wages. The definition of work sharing can be misleading, but in any case, we can talk about an employment-effective working time solution.

8.3 Sustainability of the Six-plus-six Model

In quantitative terms, the first element of working time – reducing the length of working time – provides an opportunity to spend more time at home or to invest more time in social activities. Changing the timing of work – the second element – produces unsocial working hours, which are often beneficial from the viewpoint of services, but inconvenient from the viewpoint of employees who have to cope with several overlapping time schedules in family or social life (see Hewitt, 1993). Changes in the tempo of working time can cause work exhaustion, which can be perceived negatively at work and which may have a knock-on effect on life spheres outside of work.

The workers in the private sector experiments described the 6-hour shift as hectic and the work as having piecework characteristics. Still, the overall picture of managing the work was positive; the elimination of work jams and overtime made the work easier to manage. In spite of the shorter time for breaks, the workers with 6-hour working days felt that they managed better than those with 8-hour days. The quantitative data from the municipal sector showed that the shorter hours were obviously beneficial for the well-being of employees; they reduced job exhaustion in the case of both 6-hour shifts and other forms of reduced hours. The employees who felt most exhausted at work before the experiments benefited the most from the reduced working hours (Nätti & Anttila, 1999).

A lighter workload can also have positive economic effects by improving health and morale, and by preventing absenteeism, early retirement and labour turnover. In some of the earlier Swedish experiments, such benefits were considered highly important, especially in home help, which involves heavy physical work most commonly carried out by ageing women (Olsson 1991;1994).

The quantitative analysis of work-family interaction in the female-dominated municipal working time experiments showed that work-family interaction is facilitated more when the new free time (daily reduction) is redistributed in a more equal and balanced way. This is surprising considering the overall wishes of the employees, i.e. longer periods off rather than daily reduction. The working time reduction with extra days (connected to a weekend, if possible) or weeks off was considered a tempting opportunity.

8.4 Technically Clever but Socially Insensitive

The changing working times of the last two decades have been described by a great variety of 'de'-prefix words, which indicates that the solid is melting in the air. However, the institutionalised and standardised 8-hour workday – with free evenings and a seven-day cycle consisting of five workdays and a free weekend – still forms the skeleton of the collective rhythm of society, and we can hardly escape its constraints. The institutionalisation of the workweek has also affected the temporal organisation of various activities that are not work related. Not only working time, but also leisure activities define the collective rhythm of society (Urry 1994). The two extra hours includes the filling of new leisure time, which could ideally free us for self-realisation. However, are we time pioneers capable of taking advantage of the 'working time palette' and undressing the industrial time discipline that lies on our shoulders?

Earlier studies (e.g. Anxo et al., 2000) have shown that successful implementation of the reduction and reorganisation of working time depends on several factors, of which three key factors can be pointed out. Firstly, the magnitude of working time reduction; secondly, the form of reduction; and thirdly, the regularity and predictability of working time, affecting the quality of non-working time, for example to define whether activities can be planned and working time be linked with other social times. Several working time studies and surveys indicate that the six-plus-six model is inconsistent with the preferred social organisation of working time. Wage earners resist shift work and evening shifts because of dissolving everyday structures and routines, whereas they prefer extensive blocks of free time and full days off, even at the expense of more daily hours.

Discussions on working time preferences implicitly refer to social times, and references related to 'unsocial hours' do it even more explicitly, but contemporary working time research neglects the social aspect of time and the criticism (see Hassard 1990; Hörning et al 1995; Adam 1990) directed at this deficiency. The discussion related to the six-plus-six model and the whole idea of reduction and reorganisation of working time was based on a linear-quantitative characterisation of time at work: a factor of production or quantity of time that can be reduced and reallocated, sold and bought for a certain sum of money.

The results indicated that when compared to a four-day week or longer period off, the daily reduction of working time with 6-hour shifts seems to 'waste' time. The respondents of the municipal experiments filled out a self-evaluation in which they were asked about the overall importance of the experiment on their personal life, leisure time and work organisation, as well as on services and customers. The people with days or weeks off evaluated the experiment as the most important regarding their personal life and leisure time, whereas the employees with 6-hour shifts considered the experiment to be more important from the viewpoint of their work, workplace and especially the

services and customers (Anttila & Tyrväinen, 1999, 103). The former viewpoint stems from the fact that days or weeks off are desirable for personal life and leisure time. The longer periods off leave recurring everyday routines unchanged, in both personal life and the organisation of work.

More or less autonomy

Professional commitments, ethical codes and occupational roles are related to a different approach to time at work (Zerubavel 1979; Yakura 2001). Most participants were employees who were likely to have less control over their working time; however, some employees had had greater autonomy over their working time before the experiment. Greater autonomy over working time was associated with a high socioeconomic status. This also came out in the statistical analysis: for example, the experiment decreased the level of work-family conflict only with manual and lower-level white-collar employees, not with higher-level white-collar employees. Loss of time autonomy also had an adverse effect in respect of work and family because before the experiment it had been possible to organise time according to the requirements of family or social activities. During the experiment, these employees were bound by the time schedules of others. Of the interviewees, especially dentists and kindergarten teachers experienced the unpleasantness of losing working time autonomy.

It needs to be noted that professional commitments and occupational roles might be connected to the different approach to time at work. The understanding and use of time at work of dentists, kindergarten directors and other persons in higher positions were associated with the norm of professional time. Their daily working time is not strictly defined by a formal schedule, but by the task-at-hand. Persons in lower positions typically define their working time according to a formal schedule. The new temporal order, binding together the working times and daily routines of different occupational groups, threatened the established identities and division of labour in organisations.

Breaking the temporal structure of the day

Abolition of breaks, faster working tempo and compression of working time to 6-hour shifts reduce social interaction at work. In some cases, incessant work duties and working hours that differ from those of the other teams significantly reduce the possibilities for social interaction. This separation process is partially reinforced by the increased self-control and detachment from the foremen.

In some of the case organisations, there was fierce resistance against the reduction of working time, even if it offered full wage compensation. Gains in the length of working day could turn out to be defeats in experiencing the time at work. This is one reason for the difficulty of reducing the daily working time, which is constituted of temporally constructed practices – or a series of meaningful reference points – that make it easier to cope with monotonous work.

Collectively formed practices on the temporal rhythm of a working day are very important for the time reckoning system of employees. The reduction of working time can be meaningless if the day's temporal structure is broken. It can also threaten the autonomy of working time, a result of achieved gains in the actual control of working time, which is a key factor in the power relations of work organisations. Richard Sennet (1998) has stated that routine can demean, but it can also protect. In fact, for factory workers, industrial metric time and minute engineering can be an arena in which workers can assert their own demands.

The standard norms of industrial work and leisure time are dissolving along with the deregulation and blurring boundaries of work and non-work. The problem is that our knowledge on the changing work/non-work linkage is inadequate. Both empirical studies and theoretical analysis on changing working times tend to pass over the issue of changing leisure. Working time practices are interrelated with leisure practices and community time. For example, studies on working time preferences could gain more content when examined with the transformations of leisure time in mind. André Gorz (1999, 101) poses an interesting question: why do 37% of the Dutch opt to part-time, even though their wages are reduced proportionately? According to Gorz, the history of policies on time and cities and the density of the urban fabric – the layout of towns and cities, architecture, collective amenities and public transport – facilitate self-activity, interaction, creation and cooperation.

The empirical test with the six-plus-six -hour model showed that the model is technically clever and provides indisputable benefits, but it is also socially insensitive. The organisations tended to fall back into their former temporal order. Large-scale implementation of the 6-hour shifts would have entailed new working time culture and norms, as well as a sense of entitlement and empowerment of the employees. It would have involve rethinking of the culturally constructed and gendered norm of standards of performance. The two-shift model would also have required a two-shift society.

8.5 The End of History?

Could we interpret all this as an end to the history of the shorter working day? It is easy to notice that the practical measures for working time reductions in the 1990s remained modest and the working time policy took a long step towards deregulation and flexible solutions. Recent policy programmes in Europe seem to emphasise the lengthening of life-long participation in work life. Boulin and Hoffmann (1999) write that in recent history, the momentum to reduce the amount of time we spend at work has taken ever-larger timeframes as a starting point: from eight-hour days to free weekends, and further, to paid yearly holidays. Significantly, practical experiences of the 35-hour week in France showed that the concept of 35 hours is developing in a particular

direction – towards "1600 hours a year", i.e. reduction within the annual timeframe.

We could assume that different interests can be reconciled within ever-larger timeframes. The change from time-dependent employment relationships to result-based employment relationships seems to blur the limits of work and non-work time. Employees, even those with high time autonomy, have difficulties in defining their work hours. Tasks are seldom commensurable within eight-hour days. Disengaging oneself from work entails longer breaks. At the same time, firms have taken increasingly large timeframes as a starting point for their working time negotiations. The flexible production paradigm (large variation of products and their just-in-time deliveries) cannot be based on counting and controlling the daily working hours. In addition, the information society, communication technologies and information-intensive work are predicted to break the industrial divisions between work and non-work.

Overall, it seems that we are becoming estranged from the idea of collective reductions in working hours, which have been replaced by individual reductions, mainly in the form of part-time work. The basis of the conflict over reduced working time is on the traditional notion of uniform, continuous male working life, whereas the social reality in labour markets has become more unsteady and feminised, and the reduction in working hours conceals highly differentiated interests (Nowotny 1984, 102–110; Julkunen & Nätti 1999). The length of workdays is no longer the key issue, which could unify workers across craft, race, sex, skill, age and ethnicity. Employers are not confronted by a mass movement of fighting for a shorter working day, but by individuals with their individual hopes.

In present-day discussions, we expect working time to be a solution to a range of problems – from the competitiveness of firms and national economies to the malaise of children and their overworked parents. The most acute problems that need to be answered are the marginalisation and exclusion from the labour market of an increasingly large portion of the population, the fragile employment situation of those who are still employed, the ageing of labour, the reconciliation of parenthood and work life and the increasing time pressures of the 'mobile man'. After all, it seems that we need the achievements of the shorter working day – shared rhythms and daily rest and relaxation – to support our physical and mental health and overall well-being.

TIIVISTELMÄ

Tässä tutkimuksessa tarkastellaan 1990-luvulla toteutettuja työajan lyhentämisen kokeiluja. Suomessa 1990-luvun talouden rakenteiden muutos ja työllisyyskriisi nostivat työajan lyhentämisen ja työn jakamisen vilkkaan keskustelun kohteeksi. Julkiseen keskusteluun nousi myös professori Paavo Seppäsen jo vuonna 1967 ideoima päivävuoromalli, jota 1990-luvulla alettiin kutsua myös 6+6 -malliksi. Tämä malli sisältää ajatuksen työntekijöiden työajan lyhentämisestä sekä koneiden, laitteiden ja tilojen käyttöaikojen pidentämisestä. Malli merkitsee muutosta kaikkien työajan keskeisten elementtien – työajan pituuden, ajoituksen ja tempon – suhteen.

Tutkimuksen tavoitteena on esittää, mikä on yhteiskunnallisesti mahdollista: mitkä olosuhteet selittivät organisaatioiden kykyä toteuttaa radikaaleja muutoksia työajoissa. Tavoitteisiin kuuluu myös arvioida 6-tunnin työvuoroja hyvinvointinäkökulmasta.

Tutkimuksen teoreettinen osuus asettaa työaikakokeilut historialliseen kontekstiin. Kokeilut ajoittuivat 1990-luvun lopun murrostilanteeseen, jossa teollinen työaikaregiimi vaihtuu jälkiteolliseen. Työajan lyhenemisen satavuotinen trendi kääntyi, samalla kun erilaiset joustot työn ajan ja paikan suhteen lisääntyivät ja alkoivat purkaa normaalityöajan normia. Uuden, jälkiteollisen työaikaregiimin piirteinä on nähty kollektiivisen säätelyn periksiäntö, työaikojen erilaistuminen ja eriytyminen sekä työajan rajojen haurastuminen.

Tutkimusaineistoa kerättiin yhteensä kymmenestä teollisuusyrityksestä ja 17 kuntaorganisaatiosta. Teollisuusyrityksissä toteutettujen kokeilujen analyysi perustuu yritysjohton, työntekijöiden ja luottamushenkilöiden haastatteluihin (33) sekä yrityksistä kerättyihin dokumentteihin ja havainnointiin. Kuntien kokeiluista tutkimusaineistoa kerättiin monivaiheisella kyselytutkimuksella (n=763 ensimmäisessä kyselyssä) ja haastatteluin (44).

Kokeilut tarjosivat mielenkiintoisen mahdollisuuden tarkastella työajan lyhentämistä suomalaisessa kokoaikatyön kulttuurissa. Mallin saamasta laajasta julkisuudesta huolimatta kuuden tunnin työvuoroja kokeiltiin vain harvoissa organisaatioissa. Työmarkkinakentällä kiistaa aiheutti työajan lyhennyksen palkkakompensaatio, eli kysymys siitä, mitä kuuden tunnin työpäivästä maksetaan. Yksilöille työajan lyhentäminen ja uudelleensijoittelu merkitsee palkkasyntymyksen ohella arkipäivän kulkua jäsentävän aikarakenteen muutosta. Muutokset työajan pituudessa ja sijoittumisessa edellyttävät usein muutoksia myös työn organisoinnissa. Muutosvastarintaa esiintyi kaikissa organisaatioissa.

6+6 -tuntia työaikamallin sovellukset suomalaisyrityksissä toteutuivat vapaaehtoisina ja paikallisesti sovittuina kokeiluina, joissa entinen palkkataso useimmiten säilytettiin. Osa yrityksistä käynnisti 6-tunnin vuorojen kokeilun hyvässä kysyntätilanteessa. Pidentyneiden tuotantoaikojen myötä tehostunut pääomien käyttö, työajan päivittäinen tiivistäminen taukoja lyhentämällä ja työn tuottavuuden kasvu mahdollistivat näissä yrityksissä entisen palkkatason säilyttämisen ja työaikamallin taloudellisen kannattavuuden. Työntekijöiden

arvioiden mukaan työaikaa lyhennettäessä työ muuttuikin intensiivisemmäksi. Osassa tutkimusyrittäjiä työaikaa lyhennettiin irtisanomisten välttämiseksi. Tavoitteena oli ylittää taantuma työaikoja ja palkkoja leikkaamalla sekä käyttämällä konekantaan tehokkaammin. Suomalaisessa työelämässä kahdeksan tunnin työpäivä muodostaa normin, josta poikkeamiseen ei työyhteisöissä ole totuttu. Haastatellut työntekijät, luottamushenkilöt ja yritysjohtajat näkivät luottamuksellisten suhteiden olleen edellytys kokeiluista sovittaessa.

Kuntasektorin työaikakokeilut toteutettiin vuosien 1997–1998 aikana. Kokeiluun osallistui kaikkiaan 19 kuntaa eri puolilta Suomea. Kuntien kokeiluille asettamat tavoitteet liittyvät työllisyyden parantamiseen, palvelujen tarjonnan lisäämiseen ja laadun parantamiseen palveluaikoja laajentamalla ja tilojen ja laitteiden tehokkaammalla käytöllä. Samalla kuntakokeilujen työyhteisöt pyrkivät henkilöstön työkyvyn ylläpitämiseen ja työssä jaksamisen edistämiseen työaikoja ja työskentelytapoja uudistamalla.

Kokeiluissa vakituinen henkilöstö lyhensi työaikaansa eri tavoin ja samanaikaisesti työyksiköihin palkattiin työttömiä työnhakijoita. Kokeilut lähtivät liikkeelle vapaaehtoisuuden pohjalta paikallisesti sopien. Työntekijöiden palkkataso alentui keskimäärin 7–8%, työajan lyhentyessä noin 20%. Valtio tuki kuntien työaikakokeiluja maksamalla 50 prosenttia kokeiluun työllistettävän palkkauskustannuksista. Työajan lyhennyksen toteutustapa vaihteli työyksiköittäin. Osa työntekijöistä teki kuuden tunnin työvuoroja, osa nelipäiväistä työviikkoa ja osa tiivistä työajan kolmeen viikkoon kuukaudessa. Kaikkiaan kokeiluihin osallistui noin 1300 työntekijää ja samalla työllistyi noin 580 työtöntä.

Valtaosa kokeiluista toteutettiin kuntien sosiaali- ja terveystalouksissa. Kokeilu vaikutti myönteisesti työssä jaksamiseen sekä työn ja perhe-elämän yhteensovittamiseen. Kokeilijoiden joukossa oli runsaasti pienten lasten vanhempia, jotka halusivat tarjota lisää aikaa perheelle.

Eräissä kunnissa tavoiteltiin 6-tunnin työvuorojärjestelmän avulla palveluaikojen laajentamista iltaan ja viikonloppuihin esimerkiksi hammashuollon, päiväkotien, terveydenhuollon ja kotipalvelun yksiköissä. Samalla pyrittiin sijoittamaan työaikaa joustavammin asiakkaiden tarpeiden mukaisesti. Käytännössä muutokset palveluaikoihin jäivät vähäisiksi. Kuntakokeilut päättyivät vuoden 1998 lopussa.

Siirtyminen kahdeksan tunnin päivätyöstä kohti monimuotoisempia ja epäsäännöllisempiä työaikoja on työntekijän näkökulmasta useimmiten epä-mukavaa ja arkipäivän käytäntöjen jäsentymisen kannalta hankalaa. Työaikoja kehitetään usein sosioteknisinä innovaatioina lineaarisen, kvantitatiivisen, vaihdettavan, kellonajan termein. Samalla ei huomata sitä, että (työ)aika on aina myös sosiaalisella laadulla ladattua.

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Appendix 1

ESF municipalities: number of participants in the experimental and control groups and response rates to the three questionnaires from 1996 to 1998.

	Jyväskylä		Naantali		Espoo		Total	
	Experim. group	Control group						
Number of participants in the beginning	53	53	22	23	41	34	116	110
Responded to the 1st survey (response rate, %)	50 (94%)	48 (91%)	22 (100%)	20 (87%)	38 (93%)	33 (97%)	110 (95%)	101 (92%)
Responded to the 2nd survey (response rate, %)	46 (87%)	43 (81%)	22 (100%)	19 (83%)	31 (76%)	34 (100%)	99 (85%)	96 (87%)
Panel: Responded to two surveys	42	35	22	12	28	24	92	71
Responded to the 3rd survey (response rate, %)	45 (85%)	40 (75%)	18 (82%)	18 (78%)	23 (56%)	26 (76%)	86 (74%)	84 (76%)
Panel: Responded to all three surveys	39	21	18	9	18	12	75	42

Appendix 2

The other 14 municipalities in the experiments, number of participants and response rates to the two questionnaires in 1996- 98 (without control groups).

	First questionnaire			Second questionnaire		Panel data
	Number of participants	Responded to the first survey	Response rate (%)	Responded to the second survey	Response rate (%)	Responded to both surveys
Pietarsaari	58	33	57	39	67	22
Kemi	186	128	69	110	59	75
Karkkila	35	31	89	26	74	23
Järvenpää	42	35	83	23	55	17
Kuopio	38	34	89	31	82	28
Kuhmo	30	27	90	29	97	21
Ilmajoki	49	41	84	42	86	35
Kotka	46	41	89	37	80	34
Utajärvi	14	8	57	8	57	3
Hämeenlinna	21	19	90	17	81	16
Savonlinna	53	36	68	34	64	25
Joensuu	85	69	81	62	73	55
Kajaani	118	78	66	69	58	54
Saarijärvi	83	73	88	75	90	67
Other / total	858	653	76	602	70	475
ESF / total	116	110	95	99	85	92
All / total	974	763	78	701	72	567

Appendix 3

Characteristics of the respondents

Characteristics of the respondents	ESF-experimenters	ESF-control group	Other experimenters
- share of women (%)	95.5	92.1	92.6
- age mean (stddev) (%)	43.5 (7.0)	43.6 (8.5)	42.8 (7.3)
- at least secondary education (%)	50.4	46.5	43.3
-married or cohabiting (%)	80.9	77.0	84.2
- partner employed (%)	87.6	80.3	79.4
- children < 18 years (%)	61.5	56.0	60.6
- children < 10 years (%)	27.9	28.7	31.9
- monthly earnings (stddev) in Finnish Markka* (%)	9840 (3557)	9866 (4061)	9085 (2618)
- managerial position (%)	15.3	16.0	20.8
- fixed-term contract (%)	3.6	18.8	4.8
- weekly working hours (%)	37.5 (1.3)	37.8 (1.2)	37.3 (2.0)
- job tenure in years (%)	11.8 (7.7)	10.4 (7.6)	12.7 (7.6)
- work in the social and health care sector (%)	85.6	91.1	81.5
N (first questionnaire)	111	101	652

* 1 Euro = 5.9 Finnish Markka

Appendix 4

Number of new employees (substitutes) and response rates in the questionnaire.

	Number of new employees (substitutes)	Responded to the surveys	Response rate (%)
Jyväskylä	18	14	78
Espoo	29	21	72
Naantali	8	7	88
Saarijärvi*	28	24	86
Total	83	66	80

*Saarijärvi = the second questionnaire

Appendix 5

The effects of reduced hours on job exhaustion in the three ESF municipalities (mean values, their change and analysis of variance, panel data, n = 113).

	Experimental group			Control group			Significance				
	I	II	III	I/III	I	II	III	I/III	E/C*	B/A**	Interaction
'I feel used up at the end of the workday'	2.75	2.04	2.04	-0.71	2.45	2.19	2.36	-0.09	0.614	0.000	0.003
'I feel fatigued when I have to face another day on the job'	2.07	1.79	1.88	-0.19	1.85	1.76	1.81	-0.05	0.448	0.044	0.456
'I feel I'm working too hard at my job'	2.59	2.09	2.25	-0.33	2.17	2.15	2.22	0.05	0.285	0.016	0.022
'I feel emotionally drained'	1.95	1.51	1.60	-0.35	1.79	1.55	2.00	0.21	0.465	0.001	0.006
'My work puts too much stress on me'	1.99	1.74	1.88	-0.11	1.79	1.60	1.81	0.02	0.258	0.013	0.693
'Worrying about my job interferes with my leisure time'	2.15	1.97	1.92	-0.23	2.02	1.83	1.90	-0.12	0.520	0.070	0.751
SUM VARIABLE Job exhaustion	2.23	1.85	1.93	-0.30	1.96	1.80	1.96	0.00	0.342	0.000	0.026

*E = experimental group C = control group; **B = Before A = After.

Answer alternatives: 1 = never; 2 = now and then; 3 = quite often; 4 = often; 5 = continuous

Appendix 6

The effects of different forms of reduced hours on job exhaustion in all 17 municipalities (mean values, their change and analysis of variance, panel data, n = 516).

	6-hour day		Other forms of reduced hours		Significance				
	Before	After	Change	Before	After	Change	Group	B/A**	Interaction
'I feel used up at the end of the workday'	2.57	2.01	-0.56	2.68	2.34	-0.34	0.002	0.001	0.010
'I feel fatigued when I have to face another day on the job'	1.93	1.71	-0.22	2.04	1.89	-0.15	0.021	0.001	0.340
'I feel I'm working too hard at my job'	2.37	2.06	-0.31	2.59	2.32	-0.27	0.001	0.001	0.628
'I feel emotionally drained'	1.84	1.53	-0.31	2.00	1.73	-0.27	0.013	0.001	0.654
'My work puts too much stress on me'	2.00	1.71	-0.29	2.20	1.94	-0.26	0.002	0.001	0.818
'Worrying about my job interferes with my leisure time'	2.14	1.89	-0.25	2.18	2.10	-0.08	0.104	0.001	0.021
SUM VARIABLE Job exhaustion	2.14	1.82	-0.32	2.28	2.05	-0.23	0.001	0.001	0.120

* Group = Comparison between forms of reduced working time;

** B = Before A = After.

Answer alternatives: 1 = never; 2 = now and then; 3 = quite often; 4 = often; 5 = continuously.

Appendix 7

The effects of different forms of reduced hours on job exhaustion in all 17 municipalities at different levels of perceived exhaustion in the first questionnaire (mean values, their change and analysis of variance, panel data, n = 516).

Level of job exhaustion in the first questionnaire	6-hour shift			Other forms of reduced hours			Significance		
	1	2	Change	1	2	Change	Group	B/A**	Interaction
Low (n = 162)	1.48	1.54	0.06	1.50	1.55	0.05	0.604	0.029	0.758
Medium (n = 222)	2.08	1.79	-0.29	2.14	2.02	-0.12	0.001	0.001	0.013
High (n = 132)	3.22	2.29	-0.93	3.35	2.65	-0.70	0.014	0.001	0.080

* Group = Comparison between forms of reduced working time;

** B = Before A = After.

Answer alternatives: 1 = never; 2 = now and then; 3 = quite often; 4 = often; 5 = continuously.

Appendix 8

The effects of reduced hours on the reconciliation of work and family life in the three ESF municipalities (mean values and change, analysis of variance, panel data, n=101).

	Experimental group			Control group			Significance				
	I	II	III	Change I/III	I	II	III	Change I/III	E/C*	B/A**	Interaction
'How often does your job or career interfere with your responsibilities at home?' (a)	2.61	2.14	2.11	-0.50	2.23	2.09	2.00	-0.23	0.266	0	0.197
'How often does your job keep you from spending time you would like to spend with family?' (b)	2.84	2.38	2.38	-0.46	2.42	2.36	2.39	-0.03	0.317	0.005	0.024
'How often do you feel overloaded because of work?' (c)	3.17	2.55	2.64	-0.53	2.9	2.75	2.83	-0.07	0.77	0	0.003
SUM VARIABLE Work interferes with family life (a, b, c)	2.84	2.34	2.38	-0.46	2.53	2.39	2.45	-0.08	0.614	0	0.005
'How often does your home life interfere with your responsibilities at work?' (d)	1.98	1.75	1.79	-0.15	1.88	1.74	1.68	-0.20	0.596	0.055	0.826
'How often does your home life keep you from spending time you would like to spend with work?' (e)	1.71	1.57	1.6	-0.11	1.65	1.68	1.62	-0.03	0.852	0.642	0.555
'How often do you feel overloaded because of family or home issues?' (f)	2.59	2.32	2.29	-0.30	2.2	2.03	2.11	-0.09	0.067	0.018	0.453
SUM VARIABLE Family life interferes with work (d, e, f)	2.09	1.88	1.89	-0.20	1.91	1.8	1.79	-0.12	0.319	0.008	0.672

*E = experimental group, C = control group; Between-subjects effect

**B = Before, A = After; Within-subject effect

N=101 (in sum variable)

Answer alternatives: 1= never; 2 = rarely; 3 = sometimes; 4 = often; 5 = very often

Appendix 9

The effect of the working time reduction model on the work-family conflict (analysis of variance) (all 17 municipalities)

	6-hour day (N=206)			Other form (N=287)			Significance		
	Before	After	Change	Before	After	Change	Group	B/A*	Inter-action
'How often does your job or career interfere with your responsibilities at home?' (a)	2.34	1.99	-0.35	2.45	2.25	-0.20	.016	.000	.099
'How often does your job keep you from spending time you would like to spend with family?' (b)	2.61	2.29	-0.32	2.71	2.45	-0.26	.059	.000	.398
How often do you feel overloaded because of work (c)	3.01	2.55	-0.46	3.18	2.93	-0.25	.000	.000	.004
SUM VARIABLE: Work-family conflict (a, b, c)	2.64	2.27	-0.37	2.77	2.54	-0.23	.002	.000	.015
'How often does your home life interfere with your responsibilities at work?' (d)	1.88	1.79	-0.09	1.96	1.88	-0.08	.209	.026	.876
'How often does your home life keep you from spending time you would like to spend with work?' (e)	1.70	1.54	-0.16	1.64	1.63	-0.01	.829	.010	.032
How often do you feel overloaded because of family (f)	2.39	2.16	-0.23	2.42	2.37	-0.05	.085	.001	.018
SUM VARIABLE: Family-work conflict (d, e, f)	1.98	1.83	-0.15	2.01	1.96	-0.05	.162	.000	.053

N=493 (in sum variable)

*B = Before, A = After; Within-subject effect

Appendix 10

**QUANTITATIVE FOLLOW-UP OF MUNICIPAL
WORKING TIME EXPERIMENTS**

