Review Article

The Future of Work Hours—the European View

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Abstract: In Europe the way work hours are handled varies between different countries. However, there are some issues that dominate the discussion in Europe and seem representative for what is happening. One such is the reduction of working hours—which was attempted in several countries but which now seems to be backfiring—probably related to the competition from countries outside Europe. Another area is compressed work hours—the drive towards maximizing the hours per work day in order to increase the number of days off. The health effects are debated—some find clear positive effects. A third area is company oriented flexible work hours, permitting the employer to make moderate changes in work hours when needed. The health impacts have not been evaluated but the loss of individual influence at work is obvious. In some parts of Europe self-determined work hours have been tried with very positive effects. The EU work hour directive is intended to provide uniformity but permits a counterproductive “opting out”, creating problems of imbalance.

Key words: Shift work, Long hours, Short hours, Regulation, Influence

Introduction

To provide a European view of the future developments with regard to work hours is not an easy task. The first question is of course whether there exists such a thing as a European view—the treatment of work hours differs quite a bit across countries. The cultural differences are still considerable. However, one way of approaching the task is to consider the hot issues and project from them. With that approach one finds topics such as the duration of work hours, the individual’s influence on the duration and placement of work hours, compressed work hours, breaks, very early morning work, night work in new occupations, and others. Some of these points are discussed below—in the light of our own biases, of course.

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situation in Europe. It will also increase the interest in research into long work hours. As indicated, this interest has been very low in most European countries. One reason for this lack of interest in a country like Sweden, for example, is that since the retreat from the 56 h week in the beginning of the century and from the 48 h week in the middle of the century, government representatives consider the question of health hazards of work hours to have been resolved. A contributing factor may be the fact that the issue of the length of the working week has been “owned” by labor unions and companies together and constitutes an important topic for negotiations between the two. Partly because of this, research has not really been encouraged since it might jeopardize the power position inherent in owning this important question.

The health effects of long work hours are not clear. Some studies show clear effects whereas others fail to find any\(^2\,^3\). One reason behind the unclear results may be confounding by work at home. Parents of small children, and women in general, seem to have very high weekly total work hours (around 80 h)\(^5\).

The issue of home work hours may also be a factor in the large increase in burnout in industrialized societies in the recent years, particularly in northern Europe\(^6\). Women have shown a clear over-risk for this development and it seems a realistic risk that a combination of work stress (that is the main factor behind burnout\(^7\)), long work hours, and work at home may be a key factor in the post-industrial health problems in Europe. In any case, this development needs to be followed carefully.

**Compressed Work Hours**

Compressed work hours has seen a major development in Europe, particularly as 12 h shifts\(^7\). The reason is that long shifts will give more days away from work, leaving time for relaxation, personal interests. It will also reduce the costs and stress of commuting. The flip side is the fatigue effects of long shifts. A number of studies have been carried out but the results are unclear. The expected fatigue effects are often absent, perhaps because of the frequent rest days\(^8\). Still, there is a natural limit to the duration of a shift—when it starts to encroach on sleep hours, the effects may become severe. The 12 h shift also requires that breaks are taken and it is quite conceivable that 12 h shifts are inappropriate when the work task is heavy in terms of stress or physical demands.

There are also other varieties of long shifts. We have ourselves studied 16 h shifts, finding considerable fatigue\(^9\). One may also include backwards rotation of shifts, that is, the next shifts starts sooner than after the normal 16 h between shifts. One may, for example, work an evening shift, have 8 h off and then work a morning shift. Needless to say, this causes a severe sleep deficit. The latter approach has been used at an even more severe level where the schedule involves a morning shift, 8 h off, a night shift, 8 h off, an evening shift, 36 h off—with 6 further repetitions before a week off. Again, this causes severe sleepiness\(^10\,^11\).

It should be emphasized that the long shifts only rarely are introduced by management. They are usually requested by the employees—for the reasons given initially. In fact, these shifts may be the strongest force behind work hour changes in European industry today—almost everyone prefers “bad” (compressed) work hours (to obtain larger chunks of leisure time uncontaminated by work). It will be a strong driving force in the reshaping of working life in Europe—and we know far too little about their effects.

**Company Influence Over Work Hours (Flexible Work Hours)**

The original connotation of the concept “flexible work hours” was the right of the individual to adjust the start and end of the work day to one’s own liking, but retaining a core of mandatory presence\(^12\). During the last decade, however, there has been a trend among employers to obtain the right to increase or decrease work hours with short notice in order to meet increases or decreases in demands\(^13\). Previously, this need could be met through introduction of overtime or lay-offs. However, both these approaches are costly and by introducing flexibility for the employer overtime costs disappear, but, presumably, also the risk of lay-offs. Usually, agreements between the social partners on company flex involve some compensation to the employees, often as an increase in pay or as a reduction of work hours.

The health consequences of company flex have not been properly evaluated, but work by Costa et al suggests that frequent changes of work hours combined with little individual influence seems to be associated with ill health\(^14\). Since much of ones life demands come in the form of time frames (hour of work, hours of child care, hours of studying) it seems a reasonable assumption that frequent changes in demands on hours of presence at work would function as a stressor.

Considering the advantage of company flex to the company one may assume that this practice will spread and there is considerable need for research on the consequences to health and social factors.
Individual Influence Over Work Hours

As was discussed above, individual flexitime was introduced around the late 60-ies and became quite a bit of success. It was also associated with better health\(^{14}\). Individual flexibility has of course also been practiced as swapping shifts between colleagues.

A recent development has been self-determined work hours. This involves a pool of shifts that the employees can choose from for the upcoming months\(^{15}\). The “bidding” process may be handled manually but is more frequently handled by a computer into which the employee enters his/her preferred selection of shifts. The number of work hours needs of course to be put in, at least over a period of a year. Often, unpopular shifts (night, week-ends) are given increased value (in money or work hour reduction) in order to attract choices. If any shifts are unmanned after the bidding the computer may offer them to the employees with the lowest number of credits.

The health effects have not been evaluated to any great extent but the few studies existing seem to indicate an increased quality of life\(^{14,15}\). Again, it seems reasonable that being able to adjust work hours to one’s other commitments in life should have the capacity to reduce stress. The self-selection system may be important in the future, but there are disadvantages since it may be difficult to apply to small companies since a large pool of employees is needed—and people need to be relatively easily exchangeable. Other problems may be the temptation of the employer to reduce the number of employees since the computerized system makes it possible to fit the size of the staff very closely to the demands, leaving very little slack in the system. The latter may increase stress levels. One might also question the fact that work teams may change from day to day-on the other hand, it might be an advantage since one gets to know more colleagues and idiosyncratic shift team behaviors may be prevented.

A third, more extreme, version of self-selected work hours is so called “trust hours”. With this system the individual does not have to be at work according to a schedule but works when he/she prefers. This is of course only possible for tasks that do not require team work. In one study of union representatives (only published in Swedish so far\(^{16}\)) we found very positive effects. However, anecdotal reports also suggest having “trust hours” and high work demands may tempt/coerce adoption of extremely long working weeks and high stress. This remains to be demonstrated, however.

On the whole, systems for individualization of work schedules will grow in importance in Europe. However, they will only be applicable to parts of the working force.

Early Morning Work

Early morning work is another new trend. It has started to appear in media as part of the normal news coverage. They may also be introduced as a way of circumventing rules against night work—very late evening shifts and very early morning shifts combine to cover the night. It is also attractive in areas where commuting is overcrowded, particularly by groups who enjoy flexibility of work hours.

The effects of morning work mainly concern reduced sleep before the early morning shift\(^{17}\). Quite a few drivers on the highways during day time suffer from sleep loss due to early starts\(^{18,19}\). It seems a reasonable assumption that with increasing road congestion we will see an increase in early driving, with an increase in the probability of accidents. One might also predict long time health effects from the effects on sleep restriction.

Night Work

Night work is an established form of work time organization that has negative consequences on health as indicated by European research in the middle of the last century\(^{20}\). Today we know in more detail that sleep and alertness\(^{21}\) and the amount of night work is related to long term disease, such as cardiovascular disease\(^{22}\). It is also related to fatal work accidents\(^{23}\) and road accidents\(^{24}\).

The new European development in this area is the adoption of night work by occupational groups that have not used it earlier. Such areas are banking, trading, technical development, customer support—all in global corporations with units that serve the world from one geographical site. The effects of this, over and beyond that of old types of shift work groups, may be the lack of tradition of shift work in these occupations. This will probably result in a greater recruitment of individuals unsuited to shift work than what used to be the case; those who looked for work in industry usually were aware of the fact that it meant irregular work hours and they had probably tried it as extras during their youth. Instead, we now see programmers, economists, engineers and similar groups entering shift work systems, having no tradition to fall back upon. This may well have more severe health effects than what has been seen previously. But, it remains to be demonstrated empirically.
**Breaks**

An interesting development during the last years is the demand among employees to remove breaks in order to gain more free time—eight lost one hour breaks means that the worker has gained an extra day off. On the other hand breaks seem to be instrumental in preventing build-up of accident risk, presumably because of prevention of fatigue\(^\text{25}\). Future research will have to determine the effects on safety and health of the elimination of breaks.

**Regulation**

A final note concerns the regulatory efforts of work hours as evidenced in the European Union Work hour directive, which is the legal basis for the work hour legislation of member countries. Very briefly, this provides for a maximum of 48 h of work per week, including overtime (averaged across several months), a limitation of the length of a night shift to 8 h (on the average—this actually permits 12 h night shifts since 4 such shifts fit into the 48 h week), a rest period of at least 11 h between work shifts, a minimum of 35 h of weekly rest, and a break after a maximum of 11 h.

From a shift work researcher’s point of view the provisions in the directive are helpful in protecting health and safety. But, one should note the obvious omissions, one of which is the lack of compensation for night work. The limitation to 8 h on the average is mainly window dressing—12 h shifts have become the rule in many countries. Another omission is the lack of regulation of the duration of shifts—they can extend to 13 h without violating daily rest rules. A third problem is “the possibility of opting out”, meaning that agreements between the social partners may circumvent the directive. This has been the case in many countries of which Sweden may be a premiere example. 24 h work shifts are in use also outside the health care sector. As are 8 h daily rest periods in industry. Recently, however, Sweden has been threatened by legal action by the EU.

A present day sensitive topic is the treatment of on call duty of the medical profession which has been exempt from the 11 h rule. Recently, however, it was determined that on call work should be classified as night work, causing an upheaval in many healthcare organizations—the costs would have become tremendous. Even more recently courts ruled that sleeping while on call was not work.

Work hours for pilots (“flight time limitations”) have lacked a common European legal ground and national regulations have differed considerably. However, both the European commission and The European Parliament have so far (after 15 yr) failed to produce a common European regulatory system for work hours in the air. The results is a risk of unfair competitive advantages because of lenient local regulatory authorities—by some parties labeled “social dumping”. This may, theoretically result in increased accident risks in the long run.

**Concluding comments**

Work hours are clearly changing in Europe—much of it as a result of competition from within or outside the union. Most of the changes seem negative and there is a great need for research into the consequences of these major changes in European life.

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