



Working around the clock? – The time and location of paid work in Finland 1979-2010

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Abstract

This article draws on Finnish time use data spanning the past three decades (1979–2010) with a focus on the prevalence of wage and salary earners' work at different locations, namely at the employer's facilities, at home, outside the home or the main place of work, and on the move. The diary data (N = 13,277) depicts respondents' time budgets in ten minute intervals around the clock. According to the results, work practices have remained surprisingly conventional. Although the absolute time spent at the respondents' main place of work has been decreasing, the vast majority of employees still work at their employer's facilities during normal business hours, lending no support to the 24/7 working society thesis. However, during a standard working week, alternating between different business facilities has become more common than before, pointing to the growing importance of distributed work arrangements. The data also shows that the share of employees working on days off has not increased, but this kind of activity has lengthened over the years by those who do it, implying that the burden of working time is divided more unevenly than before.

JEL-Codes: D10, J20, J22

Keywords: Distributed work, flexible work, home-based work, mobile work, telework, time use diary data, working from home, working time

1 From an industrial to a post-industrial working time regime?

This article investigates when and where employees work during a typical day, with an emphasis on the changes occurring between 1979 and 2010. The analysis draws on the time use diary data collected by Statistics Finland (N = 13,277). Earlier research on the spatial and temporal dispersion of work has mainly relied on conventional survey and case study materials (Andriessen and Vartiainen, 2006; Fealstead and Jewson, 2000; Hinds and Kiesler, 2002; Huws, 2003; Sibis, 2003). Although highly important in their own right, these kinds of studies lack the detail of time use diaries and rarely provide the opportunity to investigate long-term changes.

The data of this study provides an interesting platform for comparison. In the late 1970s, Finland was on its way to becoming a post-industrial information society, but in many respects, it still lagged behind its European rivals (Pyöriä et al., 2005). By the turn of the millennium, however, Finland had been fully modernized and even labelled an exemplar of the new information economy (Andersson, 2008; Castells and Himanen, 2002; Schienstock, 2007). Today, Finland does indeed have a high level of education and R&D intensive industries, and a high penetration of ICT use among employees and other citizens, perhaps pointing the way to the future.

In research literature pertaining to post-industrialization, it has been suggested that the time and location of paid work are losing their relevance (Pyöriä, 2009; 2011). Rapid technological development, stiffening global competition, de-standardization of employment contracts as well as collaboration and networking across organizational boundaries are factors behind the spatial and temporal dispersion of work, allegedly leading us towards a 24/7 society characterized by non stop activity in the spheres of work, communication, consumption, and profit creation (Hassan and Purser, 2007; Presser, 2003). Examples of new forms of flexible work organizations include the deployment of management teams in different countries, call centre services across different time zones, and mobile work.

According to the proponents of post-industrialization, changes in the social division of labour have also contributed to reducing the dependence of work on time and place. An integral part of this development is the growth of knowledge work, i.e. jobs requiring a high level of formal education, symbolic skills, and the use of ICT (Blom et al., 2002; Pyöriä, 2005; Pyöriä et al., 2005). In particular, people in expert jobs often take their work home or on the road, and they are accustomed to staying connected with their colleagues and customers beyond normal business hours (Hislop and Axtell, 2007). Other typical environments for knowledge work include meetings, training seminars, and customer consultations. It should, however, be kept in mind that many traditional jobs also involve mobility.

In the wake of these changes, it has been theorized that people are becoming accustomed to living in a constant present, with the clock time of industrialism being replaced by network time as work and organizational processes have grown in complexity and communication has

become ubiquitous (Hassan, 2003; Hochschild, 1997; Rosa, 2003; Westenholtz, 2006). According to this line of argument, the industrial time regime was founded on the clear demarcation between paid work and non-market activities such as home production and leisure. Today, this order has not ceased to be, but the once clear-cut boundaries of work have become blurred.

In contemporary organizations, there indeed are increasing numbers of jobs that could – at least in principle – be organized independently of time and place. In addition to traditional home-based telework, typical examples of flexible work include alternating between different business facilities and mobile work in private vehicles and public transportation (Davison et al., 2006; Hislop and Axtell, 2007). The need to answer customer inquiries promptly, a trend towards inter-organizational collaboration, and the rapid development of laptop computers and smart phones all facilitate the further growth of distributed work (Kuldeep et al., 2009; Schönauer et al., 2013). This is the image that is often conveyed to us.

Time use research provides an interesting point of departure for theoretical discussions. In contrast to the popular discourse describing the growth of boundaryless and flexible work, time use research shows that the majority of paid work is still done at conventional times on the employer's premises. Time use research also shows that the amount of free time has not decreased; in fact, it has actually increased in many parts of the developed world since the mid-twentieth century (Callister and Dixon, 2001; Fisher and Layte, 2004; Gershuny, 2000; Robinson and Martin, 2009). Only Anglophone neoliberal market economies seem to diverge from this, as evidence points towards a slight increase in the total hours devoted to paid work in the UK, US, Canada, and Australia (Gershuny, 2011, p. 208; see also Chatzitheochari and Arber, 2009; Hamermesh and Stancanelli, 2015).

In this study, we concentrate on employees' time use as an 'objective' and quantifiable phenomenon. We are aware of the fact that the social nature of time has been debated at length in previous studies going back over a century, but here our orientation is empirical. Subjective perceptions of time are beyond the scope of the present discussion. The time frame (1979–2010) of the study allows us to compare the temporal rhythms of the industrial and post-industrial phases of societal development in Finland and to see what kinds of changes (if any) can be detected. We focus on paid work and especially on upper-level white-collar workers, whose jobs are typically considered suitable for spatial and temporal dispersion (Hislop and Axtell, 2007; Peters et al., 2004). Entrepreneurs and the economically inactive are excluded from the analysis.

We first set the scene by briefly introducing the case of Finland. Then, we break down the results of the Finnish time use data by time and place of paid work, both of which have seldom been addressed by time use researchers (see, however, Callister and Dixon, 2001; Glerieux et al., 2008, 2009; Jacobs and Gerson, 2004; Merz et al., 2009; Minnen et al., 2015; Williams, 2004). The majority of existing time use studies have focused on unpaid work (household chores, volunteering) and spare time activities, or alternatively on paid and unpaid work combined, while survey research on the temporal and spatial dispersion of paid work has mostly been based on questionnaire data.

Our aim is to contribute to the debates on the arrival of the 24/7 society and the growing flexibility of work patterns from the point of view of the spatial and temporal dispersion of work. It is impossible to take into account all possible forms of spatially flexible work in a single study, so our analysis focuses on three forms: home based work, working somewhere other than at home or on the employer's premises, and mobile work. On the temporal dimension, we analyse the exact time of day that employees work. Flexibility dictated by the type of employment contract (e.g. shift work and on-call jobs) is beyond the present analysis.

2 Flexible working in the light of questionnaire data

The idea of working free from temporal and spatial restrictions is far from novel (Hinds and Kiesler, 2002). In its current meaning – work done independently of time and place with the help of ICT – it has attracted interest since at least the 1970s, when research on telework began to gain ground (Nilles, 1998). In this discussion, distributed work has increasingly often been used as an umbrella concept to encompass various alternatives to working at the traditional office, including, for example, flexible working time arrangements, mobile work, and telework (Bélangier and Collins, 1998).

In this respect, Finland – where working times are highly flexible – is a case in point: approximately every fifth employee in Finland teleworks. When an employee has agreed with his/her employer to work from home some of the time and uses information technology to do so, we may use the term teleworking. Defined in these terms, official statistics indicate that teleworking by Finnish wage and salary earners has grown tenfold – from 2% to 20% – between 1990 and 2013 (Sutela and Lehto, 2014).

Although telework seems to have increased substantially, few employees rely on it alone. In 2013, a mere 1% of Finnish employees reported working from home full-time (Sutela and Lehto, 2014). Finnish studies also indicate that working from home is often informal in nature. It supplements and continues duties already done on the employer's premises, and as such, it seldom substitutes formal daytime working hours; rather, it actually lengthens them at the expense of free time (Nätti et al., 2011; Ojala, 2011; Ojala et al., 2014). This may have adverse consequences for some individuals, although Finland does not have a culture of excessively long working hours (Anttila et al., 2009; Lee et al., 2007).

A similar pattern has been observed in the US. In his analysis based on the Current Population Survey (CPS), Song (2009) found that only 3.4% of US employees worked from home with pay, whereas 12.5% of homeworking employees had no formal agreement with their employer. In another representative US study, Noonan and Glass (2012) reported that teleworkers had longer working weeks than non-teleworkers. These extra hours essentially occurred as overtime work, leading Noonan and Glass to conclude that 'the ability of employees to work

at home may actually allow employers to raise expectations for work availability during evenings and weekends and foster longer workdays and workweeks' (ibid., p. 45).

In addition to telework, other flexible work arrangements are commonly accepted practices in Finland. According to the 2005 European Working Conditions Survey (EWCS), an average of 8% of European employees reported working at least a quarter of their working time from home with a computer (Parent-Thirion et al., 2007). In Finland, the corresponding figure was 13%. Two thirds (67%) of wage earners in the countries surveyed had fixed starting and finishing times in their work. Such fixed working times were most uncommon in Finland (51%). It was also found that working times in Finland vary on a daily and weekly basis more than in most other European countries.

Furthermore, Finland differs from its European counterparts in the amount of work that is done outside the employees' main place of work (Broughton, 2007; Lehto and Sutela, 2009). In the 2005 EWCS, the respondents were asked how much of their working time was spend somewhere other than at home or on their company's/organization's premises. In this aspect of working life, Finland is ahead of its European neighbours: 58% of wage and salary earners do at least some of their work outside the home or the main workplace. The EU27 average is clearly lower than this at 40%.

Finland also stands out in the 2013 European Company Survey (ECS), which covers more than 24,000 public and private sector establishments with ten or more employees (Eurofound, 2015). According to this study, the proportion of European establishments offering employees the option of choosing the time they begin and finish their working day varies between 30% and 90%, with Finland being the top performer. Nine out of ten establishments practice a flexitime scheme in Finland, with Denmark (88%) and Sweden (82%) following closely behind. More than 90% of Finnish establishments also allow some or all employees the opportunity to accumulate overtime to be used as time off.

Finally, working on the move is common in Finland. This is understandable because Finland is a geographically large and sparsely populated country with fewer than 5.5 million inhabitants. Two thirds of Finnish wage and salary earners travel beyond their main workplace at least occasionally (Sutela and Lehto, 2014).

3 Measuring the time and place of work

As the brief outline above indicates, various forms of distributed and flexible work arrangements are more common in Finland than in most other European countries. In this respect, however, Finland is not totally unique. It quite closely resembles the other Nordic countries (see Eurofound, 2012; 2015).

Conventional survey studies have their limits though. Typical survey questions are easy to answer, but the simplicity of the survey items comes at a price. The EWCS, for example, does not reveal how often employees switch between different work locations or how much time

they allocate to telework or working in secondary locations. Due to such restrictions inherent in questionnaires, including high quality surveys like the EWCS, our knowledge of the prevalence of the temporal and spatial dispersion of work remains incomplete.

Measuring time use in particular is problematic (Offerbach and Souza-Poza, 2010; Schulz and Grunow, 2012; Sonnenberg et al., 2012). Surveys rely on memory of historical events and often deploy subjective categories such as ‘sometimes’, ‘often’ or ‘never’ when referring to the time and place of work, rather than the employee’s actual work time in various locations (Breedveld, 1998). People may remember the hours worked incorrectly or they may report more or less work than they actually do (perhaps due to social desirability), in both cases creating systematic errors (Bonke, 2005). If we want to take a closer look at employees’ time budgets, the time use survey (TUS) based on diaries not only provides more accurate information than a retrospective questionnaire-based approach, but it is also a highly useful tool when evaluating societal changes over time (Hamermesh, 1999; Robinson and Bostrom, 1994; Robinson et al., 2011).

In time use survey studies, the respondents keep an accurate diary of their daily activities. With diary data, it is possible to study the rhythm and sequencing of daily activities, the occurrence of multiple simultaneous activities, the duration of specific activities, and the social context of the activities (see, e.g. Gershuny and Sullivan, 1998). Although highly suitable for collecting comprehensive information on individuals’ daily activities, they are infrequently produced due to the high costs involved and the burden the completion of the diaries creates for participants. On the plus side, they provide information that is more detailed and in certain respects more reliable than ‘the estimate approach’ based on standard survey questions that rely on subjective categories and the respondent’s memory (Hamermesh, 1999; Kan and Pudney, 2008; Niemi, 1993; Robinson et al., 2011). Since time use diaries always add up to 24 hours per day and the information is collected ‘in the moment’, they are much less prone to over- and underestimations (van Tienoven et al., 2014, p. 238).

Time use studies have been criticized for usually collecting individual information for a very short period. They are often limited to one day (e.g. the yesterday recall method in the US) or two days (e.g. European HETUS guidelines suggest one weekday and one weekend day) (Minnen et al., 2015). It has been implied, for example, that people who work non-standard hours on their diary days may or may not do the same on other days of the week, or vice versa (Callister and Dixon, 2001: 17). It is indeed true that time is not a constant in the sense that each hour, day, and week is different from one another (Lesnard, 2004, p. 62). In this respect, all survey instruments have their limits. However, in comparison to questionnaire-based studies, the short time-span of the diary method should not pose a problem when the data is properly weighted and the analysis is confined to the aggregate level.

Time use diaries have also been criticized for being ‘poor sources of information on time spent on economic work’ (Budlender, 2007, p. 5; italics in original), since they generally regard this time as a ‘black box’ (Mata Greenwood and Hoffman, 2003, p. 4) where respondents are requested to state only whether they were at work or not, and to specify breaks from work. In this respect, time use evidence is limited (e.g. respondents are not required to distinguish

between the different activities carried out at their workplace), but it nevertheless allows us to analyse the exact timing of work throughout the day and where this work takes place. This information can be derived from diary data with greater precision than would be possible with standard questionnaires.

4 The Finnish Time Use Survey 1979-2010

Following international conventions, the Finnish TUS, collected by Statistics Finland, examines working time; the time used on domestic work, sleeping, and eating; leisure time activities; the time spent together with other people; and the place of activity. It also examines where the respondent is and with whom. The activities are classified into specific categories based on diaries completed for two 24-hour periods at ten-minute intervals (Anttila et al., 2009; Liikkanen and Pääkkönen, 2004; Pääkkönen and Hanifi, 2012).

The Finnish TUS is updated every ten years, and so far, it has been collected four times: in 1979 (around 12,000 diary days), 1987/1988 (around 15,000 diary days), 1999/2000 (around 10,500 diary days) and 2009/2010 (around 7,500 diary days). This makes it particularly suitable for the investigation of social changes and trends.

Since 1999/2000, the Finnish TUS has been part of the Harmonized European Time Use Survey (HETUS), and it represents the entire population. The Finnish TUS is based on a household sample, the survey units of which are households and persons aged 10 or over at the time of the survey (Pääkkönen and Liikkanen, 2012). The first two Finnish surveys were individual-based, but they are nevertheless comparable with later data.

The first two surveys were based on a stratified random sample, whereas in the two consecutive studies a single-stage cluster sampling procedure was deployed (Liikkanen and Pääkkönen, 2004; OSF, 2014; Pääkkönen and Hanifi, 2012). The response rate was 41% in 2009/2010 and 52% in 1999/2000. The individual-based surveys from earlier years had significantly higher response rates (82% in 1979 and 74% in 1987/1988). In 1999/2000 and 2009/2010, the proportion of accepted diaries was lower due to the household-based nature of the data. However, the response rates from the last two surveys are close to the rates obtained in similar studies in the other Nordic countries (Bonke, 2005), and are somewhat better than that commonly achieved in time use surveys (Chatzitheochari and Arber, 2009).

The first TUS in Finland took place in autumn 1979 (September–November), whereas the three consecutive surveys were collected over the entire year (Liikkanen and Pääkkönen, 2004; OSF, 2014; Pääkkönen and Hanifi, 2012). In 1979 and 1987/1988, the respondents kept a diary for two consecutive days, the first of which was drawn by lot. The surveys conducted in 1999/2000 and 2009/2010 included one weekday and one weekend day. The major drawback of this method is that not all weekdays are recorded for every respondent.

Because the Finnish TUS is based on diaries kept for two days – in line with HETUS guidelines – diary days constitute the unit of analysis, and the analysis must be confined to the ag-

gregate level. Proper weighing of the data has been provided by Statistics Finland to guarantee that the whole population is adequately represented (OSF, 2014; Pääkkönen and Hanifi, 2012).

In addition to the data at our disposal, Statistics Finland has collected week-long diaries. Those at work kept a weekly record of the time they spent on gainful employment over seven days (Pääkkönen and Hanifi, 2012). These diaries, however, do not have information on the location of work and therefore could not be included in the present analysis (see also Minnen et al., 2015).

5 Research setting

In this study, we separated the following locations of work in order to analyse the employees' allocation of their daily working time:

1. The main place of work (employer's facilities; excluding commuting);
2. Home (or other private locations);
3. Other places outside the main workplace or home (e.g. restaurants, cafés, customers' premises, seminars and meetings);
4. On the move (e.g. vehicles or public transport).

In the survey diary, the respondent is instructed to write down his/her main and secondary activity in ten-minute sequences over the course of the day. However, the respondent is not instructed to specify the location of his/her main activity: this information is derived from the context of the diary. The coding of location and necessary imputations have been the responsibility of Statistics Finland. In the two earliest data sets, ten location categories were included. The wider categories included in the 1999/2000 and 2009/2010 data were reduced to match the earlier categories. The location information we use in our analysis is missing from less than 1% of the diaries. On this basis, we could calculate how many minutes the respondents spent working at the exact time of the day and where this activity took place.

Our research questions were:

1. According to the Finnish TUS, where do employees work? (RQ1)
2. How has the allocation of working time in different locations changed between 1979 and 2010? (RQ2)
3. Has working on days off increased between 1979 and 2010? (RQ3)

Working days throughout the week (weekdays and weekend days) were analysed (RQ1 & RQ2); they serve as the analytic units instead of typical quantitative units, such as employed vs unemployed persons, women vs men, etc. Only those diaries where the respondents indicated that they were engaged in paid work were selected for the analysis. By definition, paid work is an activity that comprises working time in main and secondary jobs, including work

done at all locations and overtime hours. Unpaid breaks or commuting do not count as working time. If the employee has marked doing paid work at home in the evening (and this has been marked to be a working day), this information has been included in the analysis.

In the analysis, blue-collar workers are separated from lower and upper-level white-collar employees in assessing the overall change of participation rates in paid work and the minutes spent in different places of work. The analysis then continues with a graphical description of employees' daily time use with a focus on upper-level white collar workers – the group whose jobs are supposed to be the least bounded by time or place (Hislop and Axtell, 2007; Peters et al., 2004).

In the final part of the analysis, working on days off is assessed (RQ3). Working in one's own time is indicative of the 24/7 economy where the boundaries between work and free time are supposed to be eroding (Noonan and Glass, 2012). Unfortunately, it was not possible to break down the results by weekdays and weekend days due to the small number of diary days (N = 979).

The total amount of diary days (N) spent in paid work by year and socio-economic status is shown in Table 1. The low frequencies of diary days for weekend work pertain to upper-level white-collar workers, which leads us to mainly focus on weekdays in the analysis (RQ1 & RQ2). The diary data quite accurately reflects the change in the social division of labour observed in official labour force statistics and other surveys (Lehto and Sutela, 2009). In the Finnish TUS, the share of upper-level white-collar employees increased from 12% in 1979 to 30% in 2010, with a concurrent decline in blue-collar work (52% in 1979 and 31% in 2010). The share of lower-level white-collar workers remained rather stable (36% in 1979 and 39% in 2010).

6 Change and continuity

In the light of the Finnish TUS, the basic characteristics of people's time use have remained quite unchanged over the past three decades. Research conducted in other OECD countries points to the same conclusion: aggregate working time patterns seem to change relatively slowly (Callister and Dixon, 2001, p. 11; Gershuny and Fisher, 2014). In Finland, the clearest change between 1979 and 2010 is the decrease in time spent in gainful employment due to the recent economic downturn; in addition, at the same time, free time has increased (OSF, 2011). This result also reflects the trend of the working-age population in Finland declining more sharply than elsewhere in Europe (Laine and Maiväli, 2010).

Table 1
Frequencies (N) of diary workdays by socio-economic status and week/weekend days, 1979-2010

		1979		1987/1988		1999/2000		2009/2010		Total
		Weekdays	Weekends	Weekdays	Weekends	Weekdays	Weekends	Weekdays	Weekends	
RQ1 & RQ2	Blue collars	2024	197	1973	186	855	87	484	46	5852
	Lower level white collars	1413	124	1569	106	956	73	594	56	4891
	Upper level white collars	522	20	780	15	628	34	520	15	2534
	N = 13,277	3959	341	4322	307	2439	194	1598	117	13277
		All days		All days		All days		All days		Total
RQ3	Blue collars	115		138		62		36		351
	Lower level white collars	79		115		73		50		317
	Upper level white collars	56		106		89		60		311
	N = 979	250		359		224		146		979

Source: Finnish Time Use Survey (TUS), Statistics Finland, own calculations.

In Table 2, the duration of Finnish wage and salary earners' paid work is calculated in minutes by working day, and Table 3 presents the participation rate of employees working in different locations. When comparing Tables 2 and 3, it is important to keep in mind that the former depicts the absolute amount of time spent working in different locations, while the latter depicts the proportion of respondents by location in a workday. In Tables 2 and 3, the results concerning weekend work by upper-level white-collar workers should be interpreted with caution due to the small number of diary days.

Between 1979 and 2010, the total time spent on paid work slightly decreased among all employees during normal weekdays (-9 min.) but increased during weekends (+13 min.). The most significant change concerns working on the employer's premises. Less time is spent on the employer's premises (-38 min. during weekdays), whereas working elsewhere outside the main workplace (or home) has increased (+11 min. during weekdays). In practice, this means alternating between different business facilities (e.g. customers' premises, seminars, and meetings). A possible explanation for this trend lies in the current tendency to encourage teamwork and inter-organizational collaboration. As of 2005, about two thirds of the wage earning population in the EU-27 reported working in teams. In Finland, the corresponding figure was 74% (Lehto and Sutela, 2009). This is important because teamwork seems to be positively related to the practice of distributed work. Teamwork structures may allow employees to overcome fears of social isolation that might result from working outside the regular workplace (Suomi et al., 1998).

In contrast to our expectations, the total number of hours spent working from home has not increased, but in line with previous studies (Pyöriä, 2003), telework remains the realm of employees with a high socio-economic status. In our data, the share of home-based work is clearly highest among upper-level white-collar employees. Working on the move has not increased either, with the exception of blue-collar workers, who work more often in vehicles than before (+12 min. during weekdays). This is an important reminder that research on distributed work should take into consideration traditional occupations and not only concentrate on knowledge workers. In this respect, there is a clear bias in the literature. The definition of mobile work has often been narrowed down to include knowledge professionals and those working on the road and/or on customers' premises with the aid of ICTs (Daniels et al., 2001). However, this excludes many traditional jobs that may involve significant amounts of mobility.

Table 2
Duration of paid work by location and socio-economic status, 1979-2010 (hh:mm per workday)

			1979	1987/ 1988	1999/ 2000	2009/ 2010	Change 1979-2010
All paid work (all locations)	Weekday	Blue-collar	7:45**	8:03***	7:57***	7:36ns	-9***
		Lower-level white-collar	7:34	7:40	7:34	7:27	-7*
		Upper-level white-collar	7:31	7:52	7:51	7:30	-2***
		Total	7:40	7:53	7:46	7:30	-9***
	Weekend day	Blue-collar	6:01ns	7:10*	6:57*	6:20ns	+19**
		Lower-level white-collar	5:53	6:12	6:39	6:10	+16ns
		Upper level white-collar*	6:11	6:11	5:08	5:59	n.a.
		Total	5:59	6:47	6:32	6:12	+13**
Working at the work- place	Weekday	Blue-collar	7:29***	7:48***	7:13*	7:08***	-21***
		Lower-level white-collar	7:27	7:07	6:59	6:54	-32***
		Upper-level white-collar	7:01	7:07	6:51	6:17	-45***
		Total	7:25	7:26	7:02	6:46	-38***
	Weekend day	Blue-collar	5:33ns	4:01*	5:36*	5:49ns	+16**
		Lower-level white-collar	5:44	3:55	5:53	5:55	+11ns
		Upper-level white-collar*	6:08	4:22	3:43	3:45	n.a.
		Total	5:39	6:18	5:22	5:36	-4**
Working from home	Weekday	Blue-collar	0:14***	0:07***	0:07***	0:03***	-10***
		Lower-level white-collar	0:06	0:21	0:13	0:15	+9***
		Upper-level white-collar	0:25	0:21	0:26	0:24	-1ns
		Total	0:12	0:15	0:14	0:14	+2ns
	Weekend day	Blue-collar	0:24**	0:18*	0:10*	0:07***	-17ns
		Lower-level white-collar	0:03	0:14	0:08	0:04	-1ns
		Upper-level white-collar*	0:03	0:55	0:35	1:14	n.a.
		Total	0:15	0:19	0:14	0:14	-1ns

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Table 2 (Cont.)

			1979	1987/ 1988	1999/ 2000	2009/ 2010	Change 1979-2010
Working outside home / workplace	Weekday	Blue-collar	0:02*	0:01***	0:06***	0:04***	+2***
		Lower-level white-collar	0:01	0:03	0:09	0:12	+11***
		Upper-level white-collar	0:05	0:05	0:20	0:21	+16***
		Total	0:02	0:02	0:10	0:13	+11***
	Weekend day	Blue-collar	0:04ns	0:00ns	0:12ns	0:03*	0ns
		Lower-level white-collar	0:07	0:00	0:15	0:06	-1ns
		Upper-level white-collar*	0:00	0:00	0:29	0:58	n.a.
		Total	0:05	0:00	0:16	0:12	+7***
Working on the move	Weekday	Blue-collar	n.a.	0:08***	0:29***	0:20**	+12***
		Lower-level white-collar	n.a.	0:08	0:12	0:05	-3***
		Upper-level white-collar	n.a.	0:19	0:13	0:18	-1***
		Total	n.a.	0:10	0:18	0:14	+4***
	Weekend day	Blue-collar	n.a.	0:11*	0:59ns	0:15ns	+4***
		Lower-level white-collar	n.a.	0:03	0:24	0:04	+1**
		Upper-level white-collar*	n.a.	0:54	0:20	0:02	n.a.
		Total	n.a.	0:10	0:39	0:08	-2**

p ≤ 0.001 ***, p ≤ 0.01 **, p ≤ 0.05 *, ns = non significant, n.a. = not applicable,
Source: Finnish Time Use Survey (TUS), Statistics Finland, own calculations

Table 3
Participation rate in paid work (at least ten minutes working in a day)
by location and socio-economic status, 1979-2010 (%)

			1979	1987/ 1988	1999/ 2000	2009/ 2010	Change 1979-2010
Working at the workplace	Weekday	Blue-collar	97**	99***	94ns	97**	0***
		Lower-level white-collar	99	96	96	95	-4***
		Upper-level white-collar	98	97	96	92	-6***
		Total	98	97	95	95	-3***
	Weekend day	Blue-collar	82ns	94*	84ns	91**	9**
		Lower-level white-collar	89	88	88	89	0ns
		Upper-level white-collar#	95	80	74	60	n.a.
		Total	85	91	84	86	1ns
Working from home	Weekday	Blue-collar	9***	6***	5***	3***	-6***
		Lower-level white-collar	8	11	9	6	-2***
		Upper-level white-collar	29	24	23	18	-11***
		Total	11	11	11	9	-2*
	Weekend day	Blue-collar	18**	11**	8***	4***	-14*
		Lower-level white-collar	6	10	5	7	1ns
		Upper-level white-collar#	10	40	32	47	n.a.
		Total	13	12	11	11	-2ns

Table 3 (Cont.)

			1979	1987/ 1988	1999/ 2000	2009/ 2010	Change 1979-2010
Working outside home / workplace	Weekday	Blue-collar	2***	2***	3***	3***	1ns
		Lower-level white-collar	1	2	5	6	5***
		Upper-level white-collar	4	5	11	10	6***
		Total	2	2	6	6	4***
	Weekend day	Blue-collar	3ns	1ns	6ns	0*	-3*
		Lower-level white-collar	2	2	8	2	0ns
		Upper-level white-collar#	0	0	15	13	n.a.
		Total	2	1	8	3	1***
Working on the move	Weekday	Blue-collar	n.a.	6***	8ns	9***	3*
		Lower-level white-collar	n.a.	9	8	5	-4*
		Upper-level white-collar	n.a.	16	11	12	-4**
		Total	n.a.	9	8	9	0ns
	Weekend day	Blue-collar	n.a.	6ns	15ns	2ns	-4*
		Lower-level white-collar	n.a.	4	12	2	-2*
		Upper-level white-collar#	n.a.	13	12	7	n.a.
		Total	n.a.	6	13	3	-3***

= Low N = 15–34, $p \leq 0.001$ ***, $p \leq 0.01$ **, $p \leq 0.05$ *, ns = non significant, n.a. = not applicable,
Source: Finnish Time Use Survey (TUS), Statistics Finland, own calculations.

Figures 1–4 illustrate the proportion of upper-level white-collar employees working at different locations by the time of day. During the daytime, the share of white-collar employees working at their main place of work has decreased since 1979, while working outside the home or employer's premises has increased, the highest peak occurring between 10 and 11 a.m., which is a natural time for business meetings.

Although collaboration among upper-level white-collar workers outside their own organization has increased at the expense of time at the workplace, the change remains modest. The vast majority of employees still rely on conventional work arrangements: at 10 a.m. and 2 p.m., around 75% of all employees and an even higher proportion of upper-level white-collar employees report working on their employer's premises. This implies that the workplace as a social community has not lost its relevance.

Similar findings on working time have been reported in New Zealand and Belgium. In their analysis of the New Zealand TUS (1998/1999), Callister and Dixon (2001, p. 8) found that approximately three-quarters of all paid working hours were carried out in traditional business hours between 8 a.m. and 6 p.m. from Monday to Friday. In Belgium, Glorieux et al. (2009, p. 178) observed that work performed during non-standard working times decreased from 19.6% in 1966 to 13.8% in 1999 due to the reduction in Saturday work. At the turn of the millennium, 86% of total working time in Belgium occurred between 6 a.m. and 7 p.m. during weekdays. In both studies, it was unequivocally stated that the 24/7 society is a myth as far as working time is concerned. Our results corroborate this interpretation.

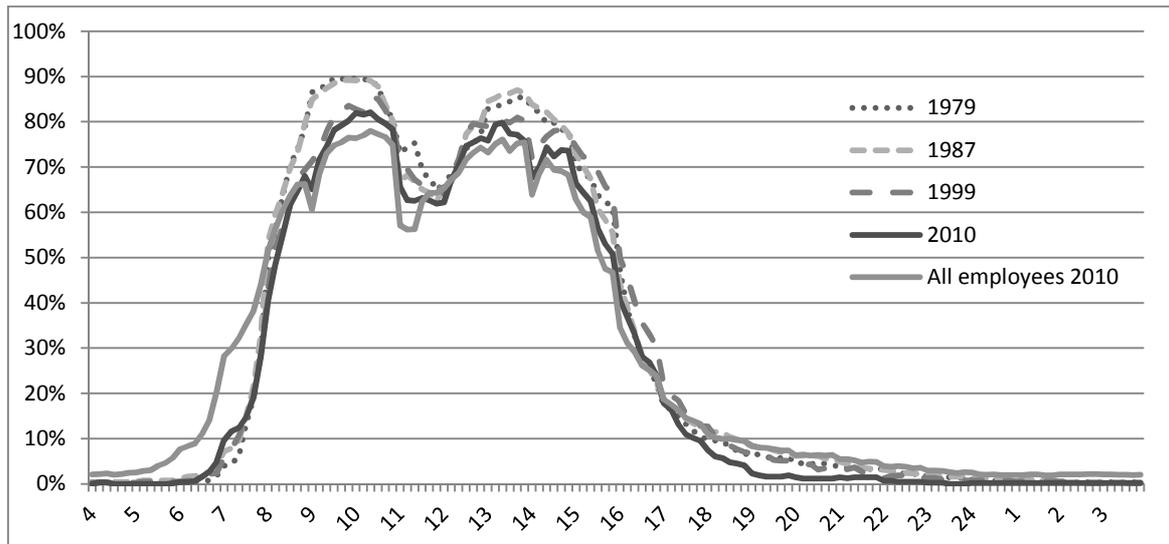
Interestingly, although we did not find any evidence of an increase in home-based work, today this kind of arrangement seems to be spread more evenly throughout the day than before. This trend is especially pronounced among upper-level white-collar workers. The recent economic downturn may explain this finding. At earlier time points (1979, 1987, 1999), the economy was growing, which may be reflected in the peak that occurred in homeworking in the evenings between 6 and 10 p.m. Due to the current economic downturn, people probably have less need to extend their working days at home.

Working on the move is also spread out rather evenly throughout normal business hours, except for a small peak in the late afternoon hours. Mobile work, however, is not the territory of white-collar workers alone. Blue-collar workers spend as much of their working time on the move as white-collar workers (see Table 2). This is explained by the fact that many blue collar workers, employed for example in construction and maintenance, routinely alternate between different worksites and/or transport goods to contractors and customers on a regular basis, whereas making business calls, checking emails or preparing memos are typical tasks for knowledge workers on the move (Green, 2002; Hislop, 2013).

Overall, the popular discourse on the rise of electronic nomads who work free from the constraints of time and space is far-fetched. In the latest EWCS report (Eurofound, 2012, p. 95), for example, one quarter of European workers were labelled e-nomads who occasionally work outside their employer's or their own business premises and habitually use computers, the Internet or email for professional purposes. In the EWCS, any work performed at a secondary

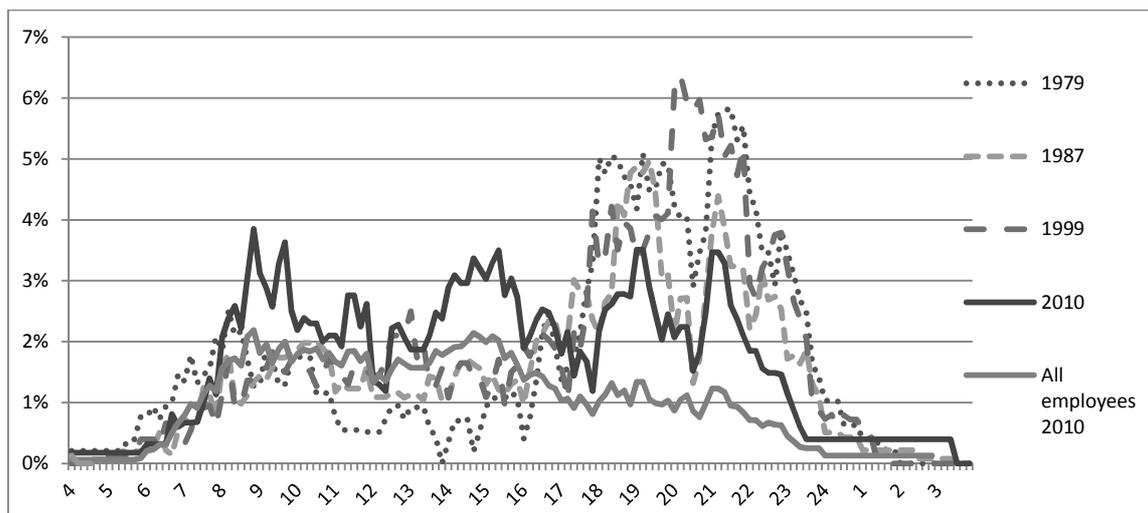
location during a three-month period prior to the survey is counted as distributed work, which is a vague definition to say the least. Time use diaries, by contrast, provide a much more accurate and realistic picture of the spatial and temporal distribution of work.

Figure 1
Working at the workplace by the time of the day on weekdays
1979-2010 (upper-level white-collar workers, %)



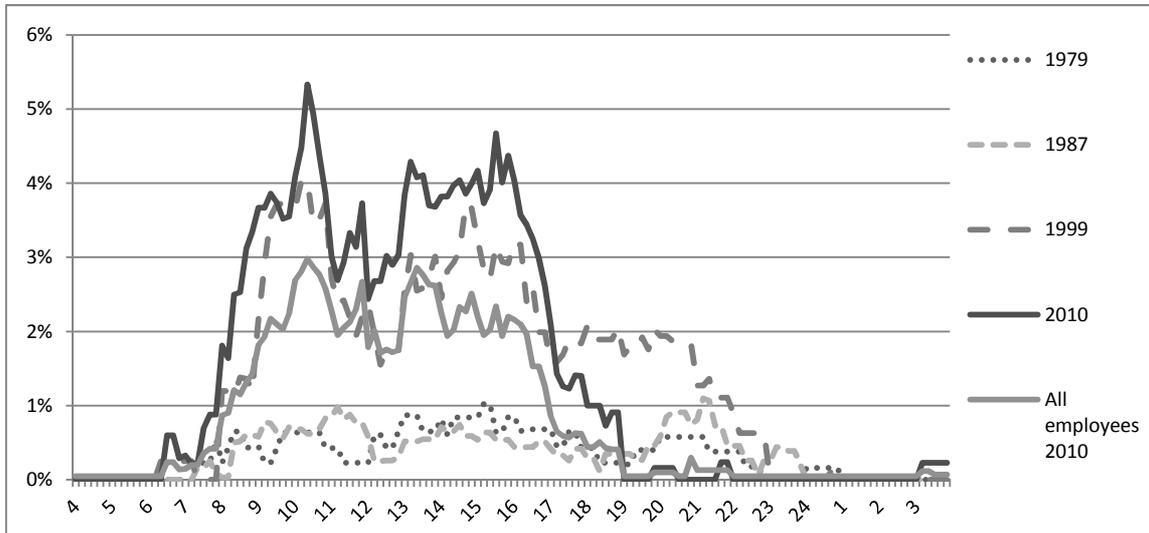
Source: Finnish Time Use Survey (TUS), Statistics Finland, own illustrations.

Figure 2
Working from home by the time of the day on weekdays
1979-2010 (upper-level white-collar workers, %)



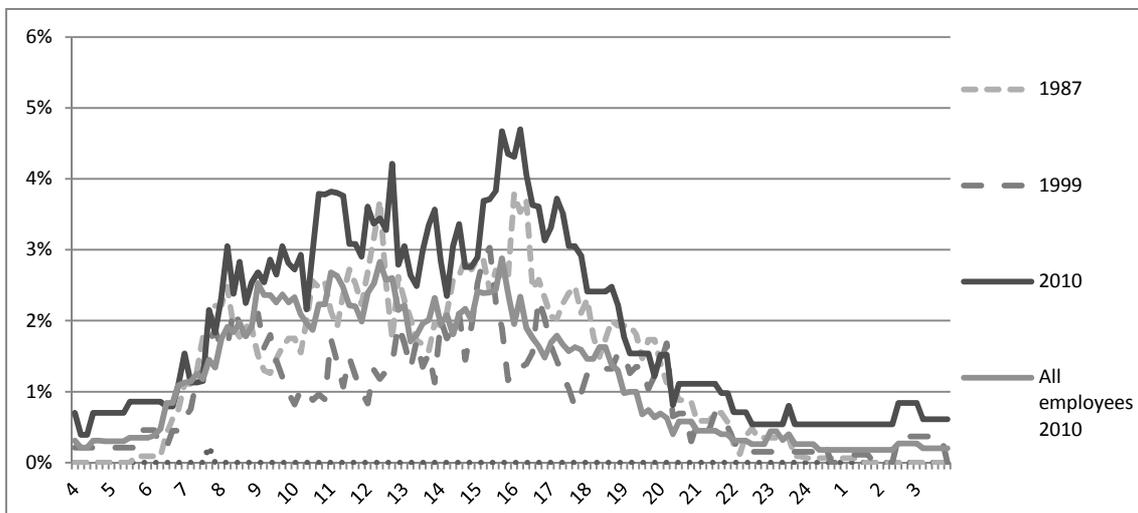
Source: Finnish Time Use Survey (TUS), Statistics Finland, own illustrations.

Figure 3
Working outside the home/workplace by the time of the day on weekdays
1979-2010 (upper-level white-collar workers, %)



Source: Finnish Time Use Survey (TUS), Statistics Finland, own illustrations.

Figure 4
Working on the move by the time of the day on weekdays
1979-2010 (upper-level white-collar workers, %)



*Data for 1979 not available.

Source: Finnish Time Use Survey (TUS), Statistics Finland, own illustrations.

7 Working on days off has not increased

Finally, we examine the hypothesis that the 24/7 economy has extended the boundaries of work at the expense of free time. It has been theorized that flexibilization of working schedules, deregulation of the operating hours in the service sector, and Sunday shopping have con-

tributed to the ‘de-synchronisation’ of daily lives in modern societies (Zuzanek, 2014, p. 6–7). This seems not to be the case in Finland.

Table 4 presents the proportion of employees who have done paid work on their own time and the absolute time spent on this kind of working. All days off – weekends and annual leave periods combined – are included in the analysis. Because of the low number of cases, working during weekends could not be separated from holidays.

Table 4
Working on days off by location and socio-economic status, 1987-2010 (%)

		Has worked on days off	Duration of work, hh:mm	Location of work, participation rate if the respondent has worked on days off			
				Workplace	Home	Other places	On the move
Upper-level white-collar	1979	7%	2:18	27%	82%	9%	n.a.
	1987	8%	2:17	36%	71%	5%	5%
	1999	8%	3:42	30%	65%	23%	16%
	2010	6%	3:20	38%	67%	5%	3%
	Change 1979-2010	-1	+1:02	+11	-15	-4	-2
Lower-level white-collar	1979	3%	4:04	49%	44%	15%	n.a.
	1987	4%	3:01	50%	49%	7%	8%
	1999	4%	2:46	47%	62%	12%	8%
	2010	4%	2:55	46%	42%	18%	14%
	Change 1979-2010	+1	-1:09	-3	-2	+3	+6
Blue-collar	1979	4%	3:39	54%	43%	11%	n.a.
	1987	4%	3:54	62%	47%	3%	0%
	1999	4%	4:50	69%	29%	10%	7%
	2010	4%	5:06	67%	29%	14%	31%
	Change 1979-2010	+/- 0	+1:27	+13	-14	+3	+31

Source: Finnish Time Use Survey (TUS), Statistics Finland, own calculations.

Surprisingly, we found little support for the assumption that paid work is taking over free time. Only 6–8% of upper-level white-collar workers and 3–4% of other employees have worked during their own time, with no change taking place between 1979 and 2010. In international comparison, Finnish working time culture is best described as healthy due to legislative limits and collective agreements (Lee et al., 2007).

It also seems that whenever work is carried out during one’s own time, the majority of employees prefer to commute to their workplaces instead of working from home. Among upper-level white-collar workers, the opposite is true, although we may observe a growing tendency towards commuting on days off. Based on a more detailed analysis (not included in Table 4), we found that the longer one needs to work on free days, the more likely it is that the work occurs on the employer’s premises. For shorter periods of work, working from home remains the preferred choice.

However, when the duration of work in free time is calculated, the lengthening of this kind of activity is remarkably clear among both upper-level white-collar and blue-collar workers. Among these groups, the length of working on days off increased by over one hour between 1979 and 2010. Even though no more employees than before work during their own time, those who choose or are obliged to do so work longer hours. This obviously implies that the burden of work and working time is not equally distributed (see also Chatzitheochari and Arber, 2009).

8 Conclusions and discussion

It is often argued that in post-industrial societies, it is increasingly difficult to define and demarcate working hours and places of work. There is some truth to this argument, as our analysis of the Finnish TUS has shown. A growing number of jobs involve spatial mobility, which is seen in the fact that during a standard working week, alternating between different business facilities has become more common than before, pointing to the growing importance of distributed work arrangements. We also found that the share of employees working on days off has not increased, but the duration of this kind of activity has lengthened over the years.

The changes we have observed are rather moderate, however. Much like getting rid of paper in offices, escaping the constraints of time and space has proven difficult even for the new knowledge workers, who may in principle work at any place and at any time by staying connected to their colleagues using wireless internet and smart phones. Our analysis clearly shows that the vast majority of employees still carry out most of their work on their employer's premises during conventional business hours, although working at other locations augments and supplements 'normal' work practices. In the light of our data, the reality nevertheless remains far removed from the theories hypothesizing the emergence of a 24/7 working society.

It is surprising to see how stable the time spent working from home has remained during the thirty year period our data covers, although, as shown by reliable questionnaire-based surveys, a growing number of employees report doing telework. It is likely that increasing numbers of people have the option of teleworking, either formally or informally, but this option is used only occasionally. This is probably explained by Finland's strict legislation on labour market regulation and working time. Weekly working hours do not typically exceed the standard 40 hours. Thus, paid work still seems to remain confined to the traditional office environment and complies with standard work schedules. This implies that post industrialization has not rendered clock time obsolete for the majority of Finnish employees.

A possible reason why visions of post-industrialization and a boundaryless 24/7 society are so appealing today is that they are essentially Anglo-American in origin. In Anglo-American countries, a general trend towards intensification of work and the extension of working hours can indeed be observed. It is clear that if taking work home or working on days off increases

the total workload too much, this is detrimental to work-life balance, health, and well-being. In Finland, unlike in neoliberal market economies, labour market regulations fortunately seem to protect employees from extensively long working weeks.

In the future, it would be interesting to see comparative time use studies assessing the rise of a 24/7 society in different cultural contexts. It would also be of great benefit to merge cross sectional diary material with register-based follow-up data to study the long-term outcomes of the temporal and spatial flexibility of work at individual and household level. Further studies should also pay attention to entrepreneurs, who are known to work the longest hours and whose work is spatially more dispersed than employees' activities.

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