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Time, Stress and Fun:
Why work overtime and what harm does it do?[1]

1 Introduction and research questions

Working overtime and its consequences for employee well-being are recently under debate in Europe. Labor unions in particular plead to curb overtime hours because it is supposed to harm the well-being of employees. The incidence of overtime and its negative consequences is high even in the Netherlands where, in comparison to other European countries, the work week is short (Eurostat, 2000). A recent survey (OSA, 2003) reports that in the Netherlands, 25 percent of the Dutch labor force works paid overtime and 27 percent put in unpaid overtime. Existing research indicates that working additional hours lead to psychological problems and perceived inability to combine work and care. It has often been suggested that these harmful consequences are due to the fact that work is effort from which one needs to recover. Overtime eats into recovery time and therefore creates harmful consequences (Van der Hulst & Geurts, 2001; Jansen, 2003; Meijman & Mulder, 1998). However, little is known about the question whether this explanation is correct or whether the effects are actually produced by other factors that correlate with the motivation to work overtime, such as competition for getting promoted. There has been research on the harmful effects of some job characteristics on stress (Karasek, 1979), but it is unrelated to overtime work. There is some research that goes a step further and uses job characteristics as moderators of the effect of overtime on psychological problems (Van der Hulst & Geurts, 2001; Gareis & Barnett, 2002). When controlled for other work related factors in general, the levels of need for recovery from overtime seem to be somewhat lower in magnitude

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(*work-home interference*). Thirdly, with an eye to the recovery theory, we included *overstrain*, that is tiredness after work, mental exhaustion and lack of feeling recovered when getting out of bed.

What is it that creates these negative consequences of working overtime? There are basically two kinds of answers to this question. First, working overtime creates a deficit in recovery time. Second, it is not so much working overtime *per se that* creates problems but the work conditions that often lead to overtime work. We will briefly look at these two explanations in some more detail.

2.2 The effort-recovery theory

After a day of work employees have a need to recuperate from work-induced fatigue. Employees who work overtime put in greater effort and more time and thus have less time to recover. This leads to psychological problems. This is the main point of the so-called "effort-recovery theory" (Van der Hulst & Geurts, 2001; Meijman & Mulder, 1998). The need for recovery is increased by the intensity of work-induced fatigue, both mentally and physically, as well as by the time period required to return to a normal or pre-stressor level of functioning (Jansen, 2003). Being physically or mentally preoccupied with one's work at home also interferes with the recovery process. It follows, that the more employees work overtime, the more problems they will experience with regard to time-pressure, work-home interference and overstrain.

2.3 The influence of work characteristics

Theories of how job characteristics affect well-being positively or negatively (De Jonge & Schaufeli, 1998; Karasek, 1979; Warr, 1990; Warr, 1999) have generally not been applied to the effects of overtime but they can furnish an alternative explanation to the effort-recovery theory. For example, working under great time-pressure is stressful and often also leads to working overtime. However, the damage might be done by the stressful work, not by the overtime. Taking intrinsic features of the job into account may also influence the effects of the extra time spent at work (Frey and Stutzer, 2002; Gechman & Wiener, 1975; Piotrowski, 1978).

Unfortunately, the present theories on work characteristics in relation to negative consequences are not detailed enough to allow us to untangle these possible effects.

One aim of the paper is to test the effort recovery explanation against the idea that work characteristics are responsible for the negative consequences. To do this, we present a theory on how work characteristics could possibly affect work effort and overtime and their joint harmful consequences for the well-being of the employee. Specifically, the theory must also explain why, and under what conditions, people are willing to work overtime even though it it has negative consequences for their well-being.

2.4 Why people work overtime: the importance of how decisions are made

Negative consequences of working overtime pose something of a paradox. Assuming that people are not completely passive victims of circumstance, they must have some hand in their working overtime, some reasons for doing it. How is it possible that people voluntarily expose themselves to reduction in their well-being? An obvious explanation for some cases is that not working overtime would create extremely negative consequences and that people are thus forced to choose the lesser evil. However such situations are unlikely to hold widely in the Netherlands. First, people may have to work overtime in order to earn some threshold value necessary for a minimal existence. If they did not work overtime, they would be destitute. This situation is unlikely to occur in a European welfare state. Second, working time may be "lumpy", that is people are structurally obliged to work more than their contractual hours. If they refuse to work overtime, they might be dismissed. Again, this does not widely apply to the Netherlands and probably also not to many European countries.

Another line of explanation for working overtime and its consequences is the "rat race" mechanism. Even though it has not often been applied to overtime, the rat race *explanation* of work effort (Kasser & Ryan, 1993, 1996; Schor, 1992) might be very much to the point here. It states, that materialistic values and status competition drive people to seek more and more income and higher status, and, as a consequence drive them into activities with a fixed focus on rewards rather than

aspects of well-being. Working overtime is a logical consequence of this focus on rewards (Kasser, 2002: 82). One hypothesis based on this approach is that if people get paid for overtime and/or if they acquire more status by working overtime, they will engage more in working over time than if they don't get paid or do not acquire extra status by doing so.

An alternative explanation of why people may voluntarily expose themselves to well-being reducing activities (including overtime) comes from a "social rationality" approach. This approach is based on the idea that social circumstances heavily influence how people make decisions, what they pay attention to, what they include in their decision making and what they fail to consider (Lindenberg, 2001). The crucial question in this approach is: what is the influence of job characteristics on what people focus on in making their choices.

Contrary to the view that money makes people work more overtime, the social rationality approach leads one to expect that, when overtime is paid for, people are less likely to work overtime. The reason for this is that the payment of every extra hour will heavily influence what people attend to. When overtime is paid, people are enticed to make explicit choices about working overtime and to look at overtime mainly in terms of "money versus leisure time" (even if they also have other reasons for working overtime). The question then is "Is this extra Euro worth a reduction of my free time?" This is as labor economists would expect the decision to be made (Smith, 1994). In this deliberation, free time (including recovery time, stress-free time, etc) gets a prominent place and therefore negative consequences of overtime are likely to have been an important factor in the decision. For that very reason, we expect employees to be quite reluctant to give up free time for an extra Euro.

The situation is very different when overtime is not paid. If people work overtime at all under these circumstances, it is likely that they have been drawn into overtime without payment and without explicit attention to the hours of overtime. Thus, they also will not weigh the benefits of overtime against the costs in free time. In such a case, overtime is likely to be a cumulative effect of small decisions, each of which is unrelated to overtime. This process creates *cumulation goods*, i.e. goods (or bads) about which one never made a decision and which still are the product of one's decisions. It has been described in Lindenberg (1986) (see

also Kahn, 1966). The general prediction from this approach is that certain conditions will make people ignore important negative consequences of their choices. The specific predictions then identify both the conditions and the negative consequences, and it is this to which we turn next.

2.5 Modern organizations and social rationality effects

How likely is it that in modern organizations, work characteristics have these social rationality effects; that they encourage people to engage in extra effort and overtime work and lead them to ignore the possible negative consequences of extra effort and overtime? We will argue that it is very likely. Organizations in which overtime is not paid (at least not for a great portion of the employees) are likely to have features that are relevant for both encouraging extra effort and overtime and ignoring the negative effects of overtime. When we look at how work is organized, then we see that in modern organizations two interrelated features govern work more than in traditional organizations: tasks/projects and autonomy (Baron & Kreps, 1999). It is these features that are likely to make modern organizations "time greedy", both by endemic crises and by effort-related criteria of commitment. Let us briefly look at both.

In many of these organizations, *crises* are endemic (Lindenberg, 2003), especially when flexibility and customer friendliness is required and the organization has to deal with many unexpected events (Perlow, 1999). In this type of organization, helping out colleagues and finding solutions for difficult problems are considered commendable behavior. Unexpected events make it difficult to plan the work, work according to schedule and to finish tasks and project on time, which tempts employees to focus on tasks and projects rather than on effort and time, and, as a result, to put in extra effort and work overtime. Perlow (1999) describes how employees who help overcome a crisis in such organizations become highly valued ("heroes"). Major and minor heroes are chronically engaged in getting overdue tasks and projects done. As a consequence, they will focus on getting these tasks or projects completed, ignoring the negative consequences of putting in the extra effort and time. Thus, this kind of unpredictability produces a high work pressure.

In addition to requiring solving crisis situations, modern organizations often also require a show of commitment. More than before, employees are judged and rewarded by their shown commitment and/or by their bringing tasks and projects (about which they have individually or as teams considerable autonomy in execution) to a good end (see Baron and Kreps 1999).. The decisions by employees to put in effort are thus mainly based on showing commitment and on finishing tasks and projects rather than on effort and time considerations. When work is less structured (i.e. more autonomous), self-regulation and visible commitment to one's tasks and projects become important signals that one is using the autonomy to a good end. Tasks in such organizations are often designed in such a way that a high productivity in that job requires that one is completely task and project oriented and not let effort and time considerations determine the work effort. Thus, not paying attention to healthy effort levels and contractual time is likely to be used by the management as an indicator for commitment and capability (Landers, Rebitzer, & Taylor, 1996). Career mobility in and possibly also between such organizations becomes dependent on a record of having shown commitment in this way. In the long run this can lead to a situation in which working hard and overtime becomes the rule and in which employees who restrict their effort and stick to their contractual hours actually perform substandard (Schor, 1992; Frank & Cook, 1995). This means that showing commitment by working hard and working overtime is likely to become also relevant for lower echelon workers. When competition is bad, the only reward for overtime may be not losing one's job. This kind of competitive environment is also likely to increase negative effects by putting much pressure on one's performance.

More autonomy in work often also gives rise to more intrinsic rewards from work (Osterloh & Frey, 2000). This effect is even made stronger by the fact that work plays an important role in people's lives as a meaningful and enjoyable activity (Adelman, 1987). The effort-recovery theory would maintain that fun at work will not compensate the effect of reduced recovery from overtime *per se*. It is to be expected that in most (modern) jobs working overtime remains an effort that asks for recovery even for those who greatly enjoy their work. This prediction derives from the fact that in modern organizations, autonomy on the job feeds both intrinsic motivation and stressful work conditions. For example, the fact that I

greatly enjoy my work does not do away with deadlines. The social rationality prediction in this case is that employees who greatly enjoy their work and are totally caught up in it will also not explicitly consider the time they spend at work and will thus also fail to consider the possible negative consequences of working overtime. Thus, even if overtime harms well-being, enjoyment will lead people to put in the extra hours.

Despite this neglect, intrinsic motivation is likely to have some positive effect. It has been found that intrinsic motivated activity does contribute positively to well-being and reduces distress (Kasser & Ryan, 1996). Thus, whereas intrinsically motivated work will not do away with the need for mental and physical recovery, one might expect it to enhance the general level of well-being of employees, it will diminish the harmful consequences of overtime.

2.6 Hypotheses

The considerations lead us to formulate three set of hypotheses. The *first set of hypotheses* concerns the question whether work related factors can explain the relationship between overtime and the negative consequences this entails. (a) If the effort-recovery model is right, then the hours of overtime will correlate with negative consequences of overtime work even if work characteristics are controlled for. (b) Due to the social rationality effect of selective attention, chronic crises and commitment competition create both the high effort level and working overtime. The harm done thus comes from both the high effort level and the overtime hours. Thus, even if people did not work overtime, stressful work conditions would lead to negative effects on well-being. If this alternative explanation is right, then the pure time effect will greatly diminish or even vanish once we control for by stressful work conditions.

The *second set of hypotheses* pits the rat race prediction (discussed above) against the social rationality prediction on the effects of paid overtime. The two predictions actually clash with regard to the effect *paid* overtime has on the hours of overtime, and the consideration of negative consequences of overtime. With regard to overtime, the rat race prediction (hypothesis 2a) is that to pay for overtime will lead to more hours worked in overtime, whereas the social

rationality prediction is the opposite (hypothesis 2b). With regard to negative consequences, the rat race prediction is that paid overtime correlates positively with the negative consequences (hypothesis 2c). The social rationality prediction is exactly the opposite (hypothesis 2d).

The *third set of hypotheses* concerns the consequences of intrinsically motivated overtime work. Hypothesis 3a: The pure intrinsic motivation prediction is that "fun" overtime work has no negative consequences. Hypothesis 3b: The hypothesis derived jointly from effort-recovery and social rationality is that intrinsically motivated work will not diminish the negative effect of overtime (because recovery remains necessary), but it increases people's general well-being and therefore will lessen the amount of negative wellbeing (compared to people without fun at work).

3 Methods

Sample and Procedure

For the purpose of this study the Time Competition Survey 2003 is used. This data set contains information about 1114 Dutch employees and their partners, from 30 work organizations in the Netherlands. The data are gathered with oral and written questionnaires. Only the employees who work 32 contractual hours or more have been selected for the analyses. This selection permits not only a sufficiently large sample but also forms a more or less homogeneous group with respect to contractual hours. The selection contains 885 employees, of whom 62 percent are men and 38 percent are women. Moreover, for analyzing the effects on work-home interference, only employees with a household of more than one person have been selected (n = 664). In the analyses, the number of cases differs according to the available information on the dependent and independent variables.

Because of the hierarchical structure of the data, we performed a multi-level analysis. However, since the variance at the first level (organizations) and the second level (occupational groups) appeared to be practically negligible (less than 6 percent in total for all three dependent variables), the results of the analyses with

or without control for the hierarchical structure are the same and it was sufficient to report the results of the regression analysis.

Measures

We focus on three possible negative effects of working overtime on well-being that can be found in de literature. *Time-pressure* was measured with 7 items of the 'Zeitwohlstand Summenindex' (Garhammer, 2002). Sample items are 'I cannot sleep properly' and 'I cannot recover from illness due to a lack of time'. Items were measured on a 5-point Likert scale (1 = never, 5 = always) (Cronbach's alpha .80).

Work-home interference was measured by adopting four items of the SWING-scale (Wagena & Geurts, 2000). Sample items were 'how often do you have difficulties in fulfilling your obligations at home, because your mind is still on your work', 'How often do you fail to enjoy the company of your partner, family and friends because you ruminate about your work?' and 'How difficult is it for you to combine work, family, household and leisure time?' (Cronbach's alpha .65).

Overstrain is measured by using three items of the 'Utrechtse burnout scale' (Schaufeli, 1995). The respondent was asked how often the following statements apply: 'I feel mentally exhausted due to my work', 'At the end of a working day I feel empty', 'I feel tired when I get out of bed in the morning knowing that I have a working day ahead of me' (1 = never, 7 = every day). Cronbach's alpha of the scale is .86.

The amount of *overtime* can be deduced from the number of contractual hours an employee has and the reported number of hours he actually works per week (traveling time excluded). No distinction has been made between the (few cases of) employees who work less than their contractual hours and the employees who do not work overtime (in both cases, overtime is 0).

Paid overtime is measured by asking the respondent whether it is possible to do paid overtime (0 = no, 1 = yes).

Two concepts are used to measure the effect of *crisis*, namely work-pressure and the unpredictability of the work. *Work-pressure* is based on the questionnaire regarding experience and judgment of work (Veldhoven & Meijman, 1994) and contains the following three items: 'do you have to work fast?', 'do you

have a lot of work?', 'how often does it happen that you have to work extra hard to be able to finish something?' (1 = never, 5 = always). Cronbach's alpha of the scale is .73. To measure the *unpredictability* of the work, we developed a scale of six times two opposite propositions. The respondent has to indicate on a five-point scale which propositions are most accurate in his situation. Examples are: 'People often disturb me when I am working' versus 'I can work without being interrupted', and 'Unexpected events make it nearly impossible for me to work according to a plan' versus 'It is easy to plan my working day'. A high score on this scale indicates that an employee often has to deal with unexpected events that make it difficult for him to plan his activities in advance. Cronbach's alpha of the scale is .69.

To measure *commitment-competition* we developed a scale of five items which measures to what extent time spent working enhances career opportunities and increases the possibility to develop greater skills. Examples of items are: 'part-time workers have fewer chances to get a promotion', 'in my job there is a strong competition between employees', 'colleagues who put in more hours stand a better chance of getting a promotion'. Cronbach's alpha of this scale is .67.

To measure the amount of *intrinsic rewards from work*, we used a scale of 14 items for 'enthusiasm' (Scheeres & Bakker, 2003). The respondent was asked to what degree he agrees with statements like: 'My work makes me feel good', 'My work entrances me' and 'When I'm working I forget everything else' (1 = never, 7 = always).

Table 5.1 Overview of the variables for the reasons to work overtime

	Variable	Number of items	Min.	Max.	Mean	St. Dev.
Paid overtime		1	0	1	.38	.48
Intrinsic rewards	Enthusiasm	14	2.3	7	4.4	.81
Crises	Work-pressure	3	1	5	3.1	.85
	Unpredictability of the work	6 x 2	1.2	5	3.5	.63
Commitment competition	Working overtime increases career opportunities	5	1	5	2.6	.71

Some *control variables* have been introduced in the model, namely gender (0 = male, 1 = female) and age. Furthermore, we expect that the household situation of the respondent could influence both overtime and well-being and we therefore controlled for the marital status of the respondent (1 = single, 2 = living together/married) and for having children under the age of 12 (0 = no, 1 = yes).

4 Results

Approximately 55 percent of the employees who have participated in the Time Competition Survey work overtime in an average working week (Table 5.2). Employees who work overtime put in on average 6.2 extra hours a week. The average number of additional hours for all employees (employees who do not work overtime included) is 3.5 hours. Among the employees with 32 or more contractual hours, the percentage of overtime is slightly higher (60 percent). This corresponds with results from other studies, which have shown that the amount of overtime increases with the number of contractual hours (Van Echtelt & Smulders, 2003).

Table 5.2 Percentage of employees who work overtime

	Percentage of employees (n= 885)
No overtime	44.1
1-8 hours overtime	41.6
9-19 hours overtime	12.9
20 hours overtime or more	1.3

For the test of the hypotheses, we refer to Tables 5.3 and 5.4. Table 5.3 shows the correlation-matrix of the three dependent variables, working overtime and the indicators of the various work characteristics. Table 5.4 shows the regression-model of time-pressure, work-home interference and overstrain on overtime and the work characteristics, with control variables.

Table 5.3 Correlations between dependent and independent variables (n = ± 840)

	1	2	3	4	5	6	7	8	9
1. Hours overtime	1	.21 **	.24 **	.10 **	-.27 **	.22 **	.25 **	.14 **	.22 **
2. Time-pressure		1	.60 **	.58 **	-.13**	-.10 **	.51 **	.22 **	.28 **
3. Work-home interference			1	.43 **	-.08*	-.11 **	.32 **	.14 **	.23 **
4. Overstrain				1	-.12 **	-.23 **	.33 **	.16 **	.19 **
5. Paid overtime					1	-.02	-.08 *	-.02	-.18 **
6. Enthusiasm						1	.05	.08 *	-.06
7. Crisis: Work-pressure							1	.29 **	.17 **
8. Crisis: Unpredictability								1	.03
9. Commitment competition: Overtime increases career opportunities									1

** = p < .01 * = p < .05

Table 5.4 Regression with time-pressure, work-home interference and overstrain as dependent variables and overtime hours and the reasons for working overtime as the independent variables (standardized coefficients)

	Time-pressure			Work-home interference			Overstrain		
Hours overtime	.24**	.08*	.10**	.26**	.16**	.21**	.13**	.01	.06
Crisis: Work-pressure		.42**	.42**		.22**	.21**		.28**	.27**
Crisis: Unpredictability		.09**	.10**		.06	.07		.07*	.09**
Commitment Competition: Overtime increases career opportunities		.19**	.18**		.15**	.14**		.16**	.13**
Paid overtime			-.04			.01			-.07*
Enthusiasm			-.14**			-.15**			-.25**
Gender (0 male 1 female)	.17**	.12**	.13**	.08*	.06	.09*	.08*	.05	.07*
Age in years	-.04	.02	.04	-.07	-.04	-.02	-.08*	-.04	-.00
Married/living together (0 no 1 yes)	-.02	-.04	-.05	-.00	.00	.00	-.03	-.05	-.05
children < 12 years (0 no 1 yes)	.15**	.12**	.12**	.12**	.11**	.12**	-.01	-.03	-.03
R2	.08	.32	.34	.08	.16	.18	.02	.14	.20
N	826	826	826	629	629	629	824	824	824

** = p < .01 * = p < .05

First set of hypotheses. The first question was whether the negative consequences of overtime work are due to reduced leisure time for recovery (effort-recovery theory, hypothesis 1a) or due mainly to work characteristics (hypothesis 1b). Which hypothesis is right? From Table 5.3 we learn that working overtime positively correlates with time-pressure, work-home interference and overstrain. This holds even when we enter the control variables (first column for each kind of harm in Table 5.4). This is as we expect it from the effort-recovery model. However, does it also hold when we control for the work conditions? Table 5.3 gives an indication of how work related factors play out in terms of the amount of overtime. Crisis in terms of unpredictability and of time pressure and commitment competition drive up the number of hours worked in overtime. The second model of Table 5.4 includes the indicators of crisis and commitment competition, which are expected to have a positive effect on both overtime and the dependent variables. The table shows that chronic crisis (work-pressure and unpredictability of the work) and commitment competition (working overtime increases career opportunities) have a positive effect on time-pressure, work-home interference and overstrain. The difference in the main effect of overtime hours in the second model in comparison to the first model reveals to what extent the effect of overtime can be explained by the work characteristics of chronic crisis- and commitment competition. Compared to the first model, the effect of overtime hours on the three dependent variables is clearly reduced when these two mechanisms are included in the analyses. Overtime harms the well-being of the employee, but this is not only caused by the additional hours, but by the fact that people also work under stressful conditions (i.e. are pushed to high effort levels). For work-home interference, however, the main effect of hours of overtime in the second model in comparison to the first model remains quite substantial, which indicates that in this case the pure time-aspect of overtime, regardless of work conditions are relatively important (supporting hypothesis 1a for this case). When overtime is excluded from the model (not in the table) we observed that the effects of chronic crisis and commitment competition do not differ substantially from the model in which overtime is included. This also indicates that the additional hours employees work are not the main cause of the harmful effects of the 'time-greedy' organization. Even when an employee in this kind of organization would decide

not to make the additional hours, chronic crisis and commitment competition mechanism create negative consequences for well-being and this supports mainly hypothesis 1b.

Second set of hypotheses. The next step is to look at the first hypothesis of our second research question. Here we pit the rat race prediction versus the social rationality prediction on overtime and the effects of paid overtime. With regard to hours of overtime, the rate race prediction is that to pay for overtime will lead to more hours worked in overtime, whereas the social rationality prediction is the opposite. From Table 5.3, we see that when overtime is paid for, people work *fewer* hours of overtime (negative correlation). This corroborates the social rationality prediction (hypothesis 2b). With regard to negative consequences of overtime work, Table 5.3 shows us that paid overtime correlates significantly and negative with all three negative consequences. In Table 5.4, with all controls, this effect is much weaker (negative but not significant for time pressure, practically zero for work-home interference, and negative and significant for overstrain). Still, in both Tables 5.3 and 5.4, the data favor the social rationality prediction (hypothesis 2d) over the rate race prediction. Thus, the idea is corroborated that, when it is paid, people consider the negative consequences of overtime work and weigh them against the extra Euro. In a Welfare state, they are therefore quite reluctant to work overtime (even under pressuring work conditions) when they consider the negative consequences. There are two caveats, however. One is that the amount of paid overtime might be restricted by the employer to some degree. The other is that paid overtime might occur especially for jobs that are not so much exposed to chronic crisis or commitment competition. This can be gleaned from the negative correlations between paid overtime and work-pressure, and paid overtime and commitment competition.

Third set of hypotheses. Turning to the effect of intrinsic rewards, we see from the third model in Table 5.4, which includes all factors, that people who enjoy their work report significantly less time-pressure, work-home interference and overstrain. However, as predicted by the combined recovery and social rationality approach (hypothesis 3b), intrinsic rewards do not nullify or reverse the negative effects of working overtime. What intrinsic rewards do is to push up the general level of wellbeing and therefore also reduce the negative aspects of well-being.

This conclusion was strengthened by the fact that we tested for a possible interaction effect of sheer overtime and intrinsic rewards in order to see whether intrinsic rewards reduce the effect of sheer loss of recover time on the various forms of strain. None of the interaction terms appeared to be significant (figures not shown).

5 Discussion

This article confirms the results of former research that working overtime harms the well-being of the employee. However, when including the factors or reasons for employees to work overtime, it appears that a good deal of the negative effects of additional working hours can be explained by the stressful working conditions that lead to extra effort and to working overtime. Not just the extra time spent at work causes strain, but the intensity of work from employees who feel the need to work overtime. Secondly, we tried to answer the question whether the negative effects of overtime are smaller or are even reversed for employees who enjoy their work. We observed that enthusiasm for work does not diminish the effect of additional hours on well-being, let alone that overtime could enhance well-being. However, employees who enjoy work have in general a higher level of well-being which forms a buffer against some of the negative consequences of overtime. Nevertheless, even in the case of workaholic employees who claim that work is their hobby, one should be aware that for them too putting in additional hours will lead to time-pressure, work-home interference and overstrain.

An additional contribution of this paper is a theory of why employees who can choose the work hours work overtime when this has such negative consequences. The answer to this question was sought on the basis of a "social rationality" approach in which working conditions affect the way people make decisions, what they consider and what they fail to include in their deliberations. For example, when people are judged and rewarded by the satisfactory completion of tasks and projects, they are predicted not to consider a healthy effort level and hours of work when they decide finish a task or project. Overtime is then the cumulative result of many of such small "extra effort" decisions. Employees thus never "choose" this over time, nor did they weigh the negative consequences of

overtime against the benefits of extra work. The same mechanism holds for working overtime because work offers so many intrinsic rewards. The irony if such process is that what economists assume employees to do is likely to happen only when overtime work is paid. Then they are likely to weigh an extra Euro earned against free time. Paid overtime work will thus not lead to psychological problems, and this expectation is confirmed in our study.

The data we used to test the hypotheses were designed to address the question of why people work overtime and, to our knowledge, there have not been many such large, theory-driven data collections with all relevant information. However, there are also limitations. The most important limitation of this study is its cross-sectional nature, which implies that causal statements have to be treated with great caution. A longitudinal design would be preferable for uncovering the causal effects of overtime and its possible harmful consequences. Furthermore, to strengthen the causality between working additional hours and well-being, the concept of 'need for recovery' as mediating variable would warrant closer attention than it has received in this paper. The next step therefore would be to measure the concept of need for recovery explicitly and include it in the analyses (see Jansen, 2003).

Despite its limitations, this study has shown that working overtime is an important issue that needs to be studied because it entails negative consequences for employees. One of the important messages of this paper is that work conditions, more than working overtime per se, create the pressures that result in harmful consequences, even when the work itself is fun. Thus, from a policy point of view, it would be better to address the work conditions directly than restrict the possibility to work overtime.

6 References

Adelman, P. K. (1987). Occupational complexity, control, and personal income: Their relation to psychological well-being in men and women. *Journal of Applied Psychology*, 72, 529-537.

Baron, J. N. & Kreps, D. M. (1999). *Strategic human resources: frameworks for general managers.* New York: Wiley.

Echtelt, P. Van & Smulders, P. (2003). Waarom werknemers overuren maken: drie mechanismen getoetst. *Tijdschrift voor Arbeidsvraagstukken*, 19, 272-285.

Eurostat (2000). *Europäische Sozialstatistik Ergebnisse der Arbeitskräfte erhebung 1999*. Luxembourg: Europäische Gemeinschaften.

Frank, R. H. & Cook, P. J. (1995). *The winner-take-all society*. New York: the Free Press.

Frey, B. & Stutzer, A. (2002). *Happiness and economics: how the economy and institutions affect well-being.* Princeton: Princeton University Press.

Gechman, A. S. & Wiener, Y. (1975). Job involvement and satisfaction as related to mental health and personal time devoted to work. *Journal of Applied Psychology*, 60, 521-523.

Garhammer, J. P. (2002). Zeitwohlstand und Lebensqualität - ein interkultureller Vergleich. In J. P. Rinderspacher (Eds.), *Zeitwohlstand. Ein Konzept für einen anderen Wohlstand der Nation* (pp. 165-205). Berlin: Edition Sigma.

Gareis, K. C. & Barnett, R.C. (2002). Under what conditions do long work hours affect psychological distress. A study of full-time and reduced-hours female doctors. *Work and Occupations*, 29 (4), 483-497.

Hochschild, A. R. (1997). *The time bind. When work becomes home and home becomes work*. New York: Metropolitan Books.

Hulst, M. van der & Geurts, S. (2001). Associations between overtime and psychological health in high and low reward jobs. *Work & Stress*, 15, 3, 227-240.

Jansen, N. W. H. (2003). *Working time arrangements, work-family conflict, and fatigue*. Maastricht: Universiteit Maastricht.

Jonge, J. de & Schaufeli, W. B. (1998). Job characteristics and employee well-being: A test of Warr's Vitamin Model in health-care workers using structural equation modeling. *Journal of Organizational Behavior*, 19, 387-407.

Kahn, A. (1966). The tyranny of small decisions, *Kyklos*, 23-46.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: implications for job redesign. *Administrative Science Quarterly*, 24, 285-308.

Kasser, T. (2002). *The high price of materialism.* Cambridge: MIT Press.

Kasser, T. & Ryan, R. M. (1993). A dark side of the American Dream: Differential correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410-422.

Kasser, T. & Ryan, R. M. (1996). Further examining the American Dream: Differential correlates of intrinsic and extrinsic goals. *Journal of Personality and Social Psychology Bulletin*, 22, 280-287.

Landers, R. M., Rebitzer, J. B., & Taylor, L. J. (1996). Rat race redux: adverse selection in the determination of work hours in law firms. *American Economic Review*, 86, 329-349.

Lindenberg, S. (1986). The paradox of privatization in consumption. In A. Diekmann & P. Mitter (Eds.), *Paradoxical Effects of Social Behavior. Essays in Honor of Anatol Rapoport* (pp. 297-310). Heidelberg/Wien: Physica-Verlag.

Lindenberg, S. (2001). Social Rationality Versus Rational Egoism. In J. Turner (Eds.), *Handbook of Sociological Theory* (pp. 635-668). New York: Kluwer Academic/Plenum.

Lindenberg, S. (2003). Myopia's price: inefficiencies in organizations. In A. Diekmann & T. Voss (Eds.), *Rational-Choice-Theorie in den Sozialwissenschaften* (pp. 217-229). München: Oldenbourg (Reihe Scientia Nova).

Meijman, T. F. & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth, H. Thierry, & C. J. de Wolff (Eds.). *Handbook of Work and Organizational Psychology, vol. 2: Work Psychology* (pp.5-33). Hove, Uk: Psychology Press.

OSA (2003). *OSA-arbeidsaanbod panel 1985-2000.* Retrieved from http://pi0736.kub.nl.

Osterloh, M. & Frey, B. S. (2000). Motivation, Knowledge Transfer, and Organizational Form. *Organization Science*, 11, 538-550.

Perlow, L. A. (1999). The time famine: towards a sociology of work time. *Administrative Science Quarterly*, 44, 57-81.

Piotrkwoski, C. S. (1978). *Work and the family system*. New York: Free Press.

Schaufeli, W. (1995). *Utrechtse Overwerktheid Schaal (UBOS): handleiding*. Utrecht: Universiteit Utrecht.

Scheeres, K. & Bakker, A. B. (2003). Flow bij muziekdocenten en hun leerlingen: De aanstekelijkheid van piekervaringen. *Gedrag en Organisatie*, 16, 23-38.

Schor, J. B. (1992). *The overworked American. The unexpected decline of leisure*. New York: Basic Books.

Smith, S. W. (1994). *Labour economics*. London: Routledge.

Veldhoven, M. van & Meijman, T. F. (1994). *Vragenlijst Beleving en Beoordeling van de Arbeid*. Amsterdam: SKB.

Wagena, E. & Geurts, S. (2000). SWING: ontwikkeling van de 'Survey Werk-thuis Interferentie Nijmegen'. *Gedrag & Gezondheid*, 28, 138-158.

Warr, P. B. (1990). Decision latitude, job demands, and employee well-being. *Work and Stress*, 4, 285-294.

Warr, P. B. (1999). Well-being and the workplace. In K. Kahneman, E. Diener, & N. Schwarz (Eds.). *Well-being. The foundations of hedonic psychology* (pp. 392-412). New York: Russell Sage.