Work and Rumination

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Introduction

The topic of recovery from the demands of work has received considerable attention over recent years. In fact it is now well-recognized that people need to recover from the strains of work. The relevance of 'recovery' from work has increased over the last decade, which can be largely attributed to management practices that have led to an intensification of work. In many occupations the demands are primarily of a cognitive nature (i.e. responsibility, information processing, and so on). As a consequence, approximately half of the working population complains about 'work pressure' (Paoli & Merllié, 2001).

This chapter aims to focus on the cognitive aspects of work and its relationship with recovery. It will be argued that, since the cognitive demands are dominant, 'thinking of work' is one of the main determinants for (absence of or delayed) recovery. In order to make this point we will start with a brief historic overview.

Historic perspective

Over the last centuries the organization of work has changed considerably. The starting point for this, it could be argued, was Adam Smith and his treatise '*On the Wealth of Nations*' (1776). This triggered thinking about optimizing the ordering of society, and in particular, about ways work should be divided. Around that time people worked and lived in small communities, and their work place was in and around their house. People worked as farmers/craftsman and were

mostly self supporting. Smith argued that people should specialize, and exchange goods they produce. With specialization, people would enhance their skills and become better at what they did or produced. Production would be more efficient and effective, and people could bargain a higher price for better quality, which would be beneficial for both; the individual and for society.

Another contributing factor at that time was a diminishing influence of the Roman Catholic Church and a greater influence of the 'Protestant Churches' (Lutherian, Calvinist), and with that, the emergence of a Puritan (or Protestant) work ethic. This gave work a very central place in life, as hard work was seen as a virtue. The ideas of Adam Smith changed economic life, and after a while, work was no longer centred in and around small communities. Instead people went to specific places to work; primarily factories. Working in factories meant that working times had to be installed. Installing working times can be seen as the primary *organizational principle*: it synchronizes the presence of people. This is a necessity to make people work together (at that time). The Industrial Revolution was a time in which life changed considerably for people. Working times have a profound influence on people's life; it structures the day, for instance by making a distinction between work time and non-work time. During work time people had to work, and during non-work time people had to organize other aspects of their life, amongst which was also 'to rest', or rather to 'recover from the fatigue of the working day'. Some authors therefore claim that leisure is a by-product of the industrial society (Marrus, 1974).

Leisure should, however, not be confused with non-work time (cf. Hunnicut, 1988; Iso-Ahola, 1980). Non-work time can be used for other commitments than work, for example domestic (household, childcare) and social activities. While leisure is, in essence, perceived freedom and intrinsically motivated, this is in strong contrast with most work situations, where activities are regulated and prescribed (cf. Iso-Ahola, 1980; 1997). According to various authors, leisure should be viewed as having its own merits, such as promoting mental health,

and developing one's personality, in particular when people engage in activities and seek challenges that match their skills (Csikszentmihalyi, 1990; Iso-Ahola, 1997). Alternatively, some authors believe that in our society work is dominant and leisure is seen as a derivate; solely used for recuperation of work (Hunnicut, 1988). Leisure is therefore in fact, viewed as rather trivial. This is especially true when people have a 'work-spend-work-spend' mentality (Schor, 1991), which may lead to escapism in leisure. Escapism refers to the fact that people do not seek meaningful leisure activities, but resort to passive activities to escape their everyday problems. Escapism in leisure leads to a passive lifestyle, and to boredom, which in turn may feed into apathy and depression (cf. Blauner, 1964).

The above strongly suggests that the way we spend our non-work time can have an impact on the recovery process. Non-work time consists to a large extent of sleep, but other activities are also necessary. Evidently, the amount of sleep people get and the quality of their sleep is important (Åkerstedt, & Nilsson, 2003), however, the activities people undertake in their off-job time can also have a significant impact (Fritz & Sonnentag, 2005; Rook & Zijlstra, 2006; Sonnentag, 2001; Sonnentag & Zijlstra, 2006; Westman & Eden, 1997; Zijlstra & Cropley, 2006). These studies looked particularly at what kind of activities contribute to feeling fatigued or recovered (cf. Fritz & Sonnentag, 2005; Rook & Zijlstra, 2006). They conclude that activities that require active engagement facilitate people to take their mind off their work. This is a clear indication that the cognitive components are important for the recovery process. There are further studies supporting this notion. Rau & Triemer (2004) demonstrated that working late affects people's quality of sleep, by firstly reducing the opportunities for recovery (i.e., time to unwind), and secondly, it prevents people from falling asleep. This suggests that people are still 'switched-on' to work. Also others indicate that hard and intense working during the day has a negative effect on sleep quality (Åkerstedt, Knutsson, Westerholm, Theorell, Alfredsson, & Kecklund, 2002; Meijman, Mulder, & Van Dormolen, 1992). It seems as if people bring the aspects of work home, they ponder about the problems they have been facing at work, and this

means that they are still actively involved with their work. This prevents them from resting, and in the evening from falling asleep.

While there used to be a clear boundary between work and private life in the recent past, there are various trends that have made this boundary less distinct. One of the factors is the increased use of Information and Communication technology, which allows us to work at any time and any place. As a consequence we see that many people work at home from time to time, particularly in the evening. After coming home from work and having dinner, these people will pick up their work again: answering emails, writing reports, etc. In fact, people extend their working day in this way. Whereas in the middle of the 20th Century there was a strong social movement striving to reduce the working week to a 40 hour working week, we now notice a tendency in many occupations to extend the working day again.

Working at home may have some advantages, such as not having to commute from home to work, although studies also report some negative aspects (Lundberg & Lindfors, 2002). Some people report increased conflicts between work and family life (in particular when they have young children), and also that they feel as if they are never finished. Clearly, the fact that people do not have to travel from work to home means that there is also no 'transition phase' in which people can leave work behind and then focus on other (domestic) issues. This is an indication that people need not only to travel a physical distance from work to home, but there is also a cognitive distance to be travelled. People need to cognitively switch-off from work in order to be able to recover. Jones & Fletcher (1996) found in their study on mood in married working couples, that the mood of men in the evening was primarily determined by work related issues, while women's mood appeared to be primarily determined by domestic issues.

What is recovery?

Work recovery can probably best be seen as the process that restores one's (energetic) resources. Effort investment at work consumes our resources, which makes us feel tired. These resources need to be replenished, like fuel. This is a rather simple analogy, but applies quite well, in particular to physical work. People take a short break to give their muscles some rest. However, for mental work, which involves our brain, the analogy is somewhat different. People can also get tired of 'thinking', which is mostly related to solving various problems and high levels of concentration. This is generally referred to as 'mental fatigue', and is more similar to feeling 'used-up' at the end of the working day. The solution here is either to take a rest break or change the activity, which implies that one is (at least temporarily) relieved of the demands that are imposed upon a person (Zijlstra & Sonnentag, 2006). Efforts during work, mental or physical, lead to psychological or physiological load reactions; these can be experienced as fatigue, or strain, and is expressed through physiological arousal. Once work has been completed, and the individual is no longer exposed to the demands of work, the individual can recover. In fact this is a reversal of the load reactions and thus prepares the individual to be ready to take on new demands. Recovery may be more precisely defined as the psycho-physiological unwinding after effort expenditure at work (Geurts & Sonnentag 2006) and adequate recovery prevents the accumulation of fatigue (Meijman & Mulder, 1998). In a more general sense, recovery is also related to the work-rest ratio (Sluiter, 1999). It is now thought that speed of recovery may be as important in the aetiology of disease and illness as the acute reactivity in response to the stress exposure (Linden, Earle, Gerin, & Christenfeld, 1997; Lundberg, 2003; Pavlides, Nivon, & McEwen, 2002).

Work-related rumination

The recovery process appears to be largely influenced by the extent to which people manage to disengage (or disconnect) from their work demands and related thoughts (Cropley, Dijk, &

Stanley, 2006; Sonnentag, Mojza, Binnewies, & Scholl, 2008; Sonnentag & Zijlstra, 2006; Rook & Zijlstra, 2006). Thus, a mechanism suggested to impair successful unwinding is rumination (Roger & Jamieson 1988; Cropley, *et al.* 2006). Martin and Tesser (1996) conceptualize rumination as "a class of conscious thoughts that revolve around a common instrumental theme and that recur in the absence of immediate environmental demands requiring the thoughts" (Martin, & Tesser, 1996, p7). Potentially there are many life issues or themes people may ruminate about, however only relatively recently have researchers started to examine how individuals mentally unwind from work. This is surprising as work, and work related activities — getting to and from work — consumes over a third of our waking time. Work therefore is important for people, and therefore it is not surprising that it occupies our mind, even when not at work. Work-related rumination may be considered as a thought or thoughts directed to issues relating to work, that is/are repetitive in nature. There are various factors that may influence whether or not people are thinking about their work. Many people think and ponder about work related issues when not at work and they do this when they are confronted with problems at work; but also when they have been working very intensively. There are also many individuals who find they are unable to escape from their work, and thinking or ruminating about work issues, when not at work, dominates much of their free time.

It is very difficult to put a precise figure on the percentage of workers who find it difficult to mentally 'switch-off' from work as there is no set measure, and a number of different items have been used within the literature. Nonetheless, estimates suggest that a high proportion of workers do experience problems mentally unwinding. For example, The Employment of Britain Survey (1992) interviewed over 3000 workers and revealed that 70% of them reported that they find it difficult to unwind after work (Gallie, White, Cheng, & Tomlinson, 1998). The survey also revealed that 72% of individuals at sometime worry about their job after work, with 22% describing themselves as regular worriers. Moreover, 11% stated they worry about their job after work much of the time (Gallie, *et al.* 1998). Research also suggests that the proportion of

workers who find it difficult to unwind after work and worry about their job after work increased over a 10 year period (Felstead, Gallie, & Green, 2002). This finding matches with the observation that work has become more intense and cognitively demanding. Unfortunately, we do not know the exact percentage of workers who have difficulty 'switching-off' from work related thoughts at present and surveys are needed to monitor this issue over time. It is likely that economic factors also plays a role; workers who are employed in organisations that are in the process of restructuring, or downsizing are exposed to the additional stressor of the threat of being unemployed. Some workers may feel they have to take on extra work. Although it is not known how recessions have an impact on worker's ability to unwind, the added stress of possible redundancy will inevitably exacerbate work related worries.

Do levels of work-related rumination differ by occupation?

It is intuitive to infer that certain, particularly the more mentally or emotionally demanding jobs or occupations will be associated with high levels of work-related rumination. The medical and teaching professions for example, are seen as being particularly demanding environments in which to work, and indeed studies have shown that a high proportion of workers in these types of occupations find it difficult to mentally unwind post work (Aronsson, Svensson, & Gustafsson, 2003; Cropley & Millward Purvis, 2003; Cropley, *et al*. 2006; Gorter, 2005). For example, teaching is recognised as a highly demanding occupation in which to work and school teachers do report high levels of rumination. Moreover teachers who report high job strain do take a considerable longer time to unwind post work relative to their low strain colleagues (Cropley & Millwards, 2003).

Another way to examine the role of occupation and work-related rumination is to consider workers in terms of their socio demographic makeup. Figure 1 shows the results of data taken from a survey of 5047 adult workers (mean age 51.2 years, SD, 18.6) drawn from The

Adult Psychiatric Morbidity Survey 2007 (APMS 2007) (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2009). A proxy measure of work-related rumination was computed from the overcommitment items (e.g., 'When I get home, I can easily relax and switch-off from work'; 'Work rarely lets me go, it is still on my mind when I go to bed'), of the Effort-Reward Imbalance questionnaire (Siegrist, Starke, Chandola, Godin, Marmot, *et al.* 2004). As can be seen, there is a clear, almost linear pattern with Professional workers (those in socio demographic makeup I), reporting the highest level of work-related rumination. Not unsurprisingly, Unskilled Workers, (those in socio demographic makeup V) report the lowest level of work-related rumination. Gender was not significantly associated with rumination.

INSERT FIGURE 1 ABOUT HERE

It is tempting to conclude therefore, that it is the nature of the work, rather than the individual that contributes to the unwinding process. Nonetheless, even within similar occupations there is a great deal of variation. For example, a study examining coping mechanisms of surgical nurses — clearly a demanding occupation — found that the majority of them reported no difficulty switching-off post work (Mackintosh, 2007). Although the research didn't identify the exact reason for this, perhaps the ability to switch-off was due to the fact that they were able to 'pass things on to other people' at the end of their shift, and therefore be less inclined to think about work once their shift was over. We believe however, that it is not necessarily the occupations people work in, that <u>cause</u> people to ruminate, but people start ruminating (or worrying) when work (or aspects of work) become problematic. For instance when the workload is too high, and people fear that they cannot manage to get their work done in time, or when they have problems with colleagues, or their supervisor. Modern management practices tend to focus on 'targets' and 'outputs', which makes employees responsible for their own performance. This can cause problems for employees when there are aspects beyond their control, yet within their

responsibility, that make it difficult to achieve their goal/s. Consequently, when the conditions or level of support is not optimal this may cause them to worry about their work. And evidently some individuals have a general tendency to ruminate (Watkins, 2008), while others do not.

How to measure work-related rumination

A number of different and diverse measures have been used to assess how workers mentally unwind from work. For example, Warr (1990) developed, as part of a larger instrument to measure well-being and mental health, a four item sub scale of work strain, e.g., 'After I leave my work, I keep worrying about job problems'. This measure has also been assessed as single items in survey research (e.g., Gallie, *et al*. 1998). Cropley & Millward Purvis (2003) constructed a three item measure to assess how workers 'cognitively switch-off' after work, and reported that high job strain teachers take longer to unwind, and ruminated more over a work day evening, relative to their low job strain colleagues. Sonnentag and Fritz (2007) devised a more all-encompassing theoretical account of the recovery process and introduced 'The Recovery Experience Questionnaire'. These authors conceptualised four aspects of recovery: psychological detachment from work, relaxation, mastery, and control. The approach makes use of concepts that seem to be related to Csikszentmihalyi's concept of 'flow' (1990). The psychological detachment factor contained four items (i.e., 'I forget about work, I don't think about work at all, I distance myself from my work, I get a break from the demands of work), that is concerned with how individuals mentally switch-off from work.

The aforementioned measures have generated some important and interesting research in the area of recovery from work, and have contributed to the advancement of the literature. One shortcoming is perhaps, that they all imply that thinking about work is necessarily harmful. We do not share this view, and suggest that people do not always think *negatively* or *worry* about

work in their free time. Thinking about work is indeed not compatible with detachment, and therefore will hinder recovery from work. However, thinking and reflecting about work issues can also have beneficial effects and can be associated with positive connotations. Incorporating this notion, we propose a three factor conceptualisation of work-related rumination, and label these as *Affective rumination*, *Problem-solving pondering*, and *Detachment*.

Affective rumination

We describe 'Affective rumination' as a cognitive state characterised by the appearance of intrusive, pervasive, recurrent thoughts, about work, which are negative in affective terms (Pravettoni, *et al*. 2007). If left unchecked, perseverative thinking about work related issues will become cognitively and emotionally intrusive during leisure time. Following a demanding or stress provoking experience some people may try to avoid thinking about work related matters during their free time. Previous work, suggests however, that by trying to push unwanted thoughts out of consciousness, i.e., thought suppression, people may actually make the thought more accessible (Erber & Wegner, 1996; Wegner, Schneider, Carter & White, 1987). It is likely that in such circumstances individuals would experience negative emotional reactions which manifest themselves in the form of tension, and annoyance for instance. This clearly has a negative effect on the recovery process.

Problem-solving pondering

As stated above, much research concerning rumination has focused on the negative aspects, in the sense that when people think about their work in the evening this means that they are still cognitively 'switched-on', and this prevents them from recovering in the evening or weekends. The negative aspects imply that people ponder about issues they cannot solve, or that may (have) become a threat (cf. Walkowiak, Hulsheger, Zijlstra, 2010). This clearly has a negative impact on the recovery process. However, when people think about a problem at work this does

not necessarily have negative implications; there maybe positive sides as well. Being 'switched-on' to work may have a positive effect on peoples' well-being when they are able to think of a solution for their problem. There are studies that suggest that thinking about work might have a positive impact on 'innovation' and 'creativity' (Baas, De Dreu, & Nijstad, 2008; Spoor, De Jonge, & Hamers, 2010). Based on a meta-analysis of studies on mood and creativity Baas et al. (2008) concluded that activating mood states with a positive focus (i.e. happiness) would lead to more creativity, whereas mood states that are prevention-oriented (i.e. fear and anxiety) were negatively related to creativity. The effects of positive mood were particularly noticeable when the task was seen as enjoyable and intrinsically rewarding.

Thus, problem-solving pondering is a form of thinking that may be characterized by prolonged mental scrutiny of a particular problem or an evaluation of previous work in order to see how it can be improved, but it does not involve the emotional process that sustains arousal as in affective rumination. People may ponder about work related problems because they find the act of thinking about work issues interesting. In more general terms this suggests that when people keep thinking about their work because they enjoy their work, and it helps them to solve issues that they are faced with, there is no problem with being 'switched-on'. It does not involve the emotional process that sustains arousal as in affective rumination. Problem-solving pondering has similar characteristics to the 'reflective pondering' component of the Response Styles Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991). In a further analysis of the RSQ, Treynor and colleagues identified two factors they called 'reflective pondering' and maladaptive 'brooding' (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Reflective pondering is an adaptive cognitive problem solving strategy and is utilised by the individual to confront and alleviate depressive symptoms. In the long term, reflective pondering may lead to more effective problem solving (Treynor, *et al.* 2003). In contrast, brooding refers to the passive comparison of one's predicament against an unachieved standard. Analogous with previous conceptualizations of rumination, we consider that problem-solving pondering about work issues may be goal

directed (e.g., concerning how one can improve their performance). However unlike the reflective component identified by Treynor et al, reflective pondering about work issues does not necessarily involve the emotional element, nor is it necessarily used to regulate mood. From a regulatory perspective, individuals who ponder problems during their free time will switch-off when they deem this necessary and useful. However, for those people that perceive strain due to high demands, which is generally accompanied with anxiety, and maybe even fear, i.e. high pressure, being 'switched-on', clearly has negative implications, and this might lead to an impaired recovery process (cf. Walkowiak, *et al*, 2010).

Detachment

Ruminative thought may be cognitively and emotionally intrusive during leisure time yet some people are clearly able to switch-off and detach from work, post work. Etzion and colleagues define detachment as "the individual's sense of being away from the work situation" (Etzion, Eden, & Lapidot, 1998, p. 579). Detachment aims to assess how easily workers are able to switch-off and leave work behind. Previous research has shown detachment from work to be associated with positive well-being and low fatigue (Sonnentag, & Bayer, 2005; Sonnentag, *et al*. 2008). It is reasoned that workers who are able to switch-off from work are likely to lead a healthy work-life balance. It is conceivable that such workers also strive to control other areas of life to safeguard their health. Cropley and Millward (2009) examined the process of unwinding from work and conducted interviews with workers who habitually find it difficult to switch-off from work (i.e., high ruminators), and workers who find it easy to switch-off from work (i.e., low ruminators). Interestingly, both groups readily acknowledged the benefits of leading a healthy lifestyle, yet only those who were able to detach themselves from work, i.e., the low ruminators, were able to do so. The interface between work, home and unwinding are clearly linked (Nylen, Melin, & Laflamme, 2007). A poor work-life balance has been associated with poor health (Nylen, *et al*. 2007; Winter, Roos, Rahkonen, Martikainen, & Lahelma, 2006),

which is mediated in part, by health related behaviours, e.g., lack of physical activity, increased alcohol consumption and poor dietary choices (Roos, Lahelma, & Rahkonen, 2006; Roos, Sarlio-Lahteenkorva, Lallukka, & Lahelma, 2007).

Using the above conceptual framework Cropley and colleagues (Cropley, Michalianou, & Pravettoni, 2009) developed a new 15 item measure to assess how people think about work called the Work-Related Rumination measure. Respondents are asked to rate on a 5-point scale (1 = very seldom or never, 2 = seldom, 3 = sometimes, 4 = often, 5 = very often or always), the relative frequency they engage in each of three different types of perseverative or ruminative thinking: affective rumination (e.g., 'do you become tense when you think about work-related issues during your free time?; Are you annoyed by thinking about work-related issues when not at work?'), problem-solving pondering (e.g., 'In my free time I find myself re-evaluating something I have done at work; 'I find solutions to work-related problems in my free time'), and detachment (e.g., 'Do you find it easy to unwind after work; Do you leave work issues behind when you leave work?').

Work-related rumination and health

It does not really matter if people think and ruminate about work issues when not at work, and indeed many people do this because they find it rewarding and stimulating. There may also be benefits to thinking about work when not at work (see above). Rumination only becomes an issue when it affects health and well-being. There is nonetheless, an emerging body of evidence to suggest that work-related rumination is associated with a range of health problems, including cardiovascular disease (Kivimaki, Leino-Arjas, Kaila-Kangas, Luukkonen, Vahtera, *et al*. 2006; Suadicani, Hein, & Gyntelberg, 1993), negative mood (Pravettoni, *et al*. 2007), saliva cortisol secretion (Rydstedt, Cropley, Devereux, & Michalianou, 2009), and sleep disturbance (´kerstedt, *et al*. 2002; Berset, Elfering, Luthy, Luthi, & Semmer, *in press*; Cropley, *et al*. 2006;

Groeger, Zijlstra, & Dijk, 2004; Nylen, *et al*. 2007). For instance, a prospective study found that men who reported an inability to relax after work, had an approximately threefold increased risk of heart disease (Suadicani, *et al*. 1993). Another study showed people who experience 'persistent thoughts about work' were three times more likely to report sleep disturbance, compared to those that did not (´kerstedt, *et al.* 2002).

Utilizing the survey APMS (2007) (McManus, *et al*. 2009) data above, it is possible to examine the association between work-related rumination and psychiatric morbidity. Neurotic psychopathology was assessed using The Revised Clinical Interview Schedule (CIS-R); an interview measure comprising of fourteen sections, each covering a specific neurotic symptom (e.g., anxiety, depression, fatigue, sleep) (Lewis & Pelosi, 1990). Participating workers were divided into high and low ruminators. The result of our analysis is presented in Table 1. As can be seen, 13 of the 14 neurotic symptoms were significantly more prevalent in high relative to low ruminators. The most prevalent symptom being concentration issues, with the high ruminators (identified as being in the top quartile) being 6.4 times more likely to have screened positive for this symptom compared to the low ruminators (those in the lower quartile). Other highly prevalent symptoms in the high ruminators were somatic symptoms (OR = 5.0), anxiety (OR = 5.4), and worry (OR = 4.9). Thus failing to unwind post work is clearly associated with increased psychiatric morbidity.

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Mechanisms

The exact mechanism underlying the association between unwinding and health is not clear, however two distinct pathways may be involved: the *physiological* and the *behavioural*. Although not fully understood, two involuntary branches of the autonomic nervous system are

thought to be closely involved in the progression from stress to illness/disease: the sympathetic nervous system, and the parasympathetic nervous system. When the body is under threat or stressed, sympathetic activity (or parasympathetic withdrawal) mobilises the organism for action by initiating physiological arousal, such as increasing blood pressure, heart-rate, catecholamine, and corticosteroid secretion. In the absence of threat or perceived stress, the parasympathetic system counteracts the effects of sympathetic activity and restores homeostasis. These two mechanisms serve to protect the organism in the short-term, but can have damaging effects if stress is prolonged.

The effect of the stressor may be long felt even when the object causing the strain response is no longer present. For instance, a person who has a quarrel with a colleague at work may continue to think and ruminate about the encounter post work. In doing so, they may also experience the same physiological arousal that originally accompanied the stressor. A demonstration of this was shown in an interesting laboratory study by Glynn and colleagues (Glynn, Christenfeld, & Gerin, 2007). In this study, participants were asked to perform a mentally demanding task, and in addition were harassed while doing so. After 20 minutes following the completion of the task, they returned to the laboratory where they were asked to recall the experience. In doing so, the participants showed elevated cardiovascular responses, with increased blood pressure and heart-rate. Moreover, this effect was still present when they were tested one week later. This suggests that reactions to stress can be sustained over a long period of time, particularly in individuals who perseverate about the stressor (Brosschot, Gerin, & Thayer, 2006). Furthermore, persistent failure to unwind following periods of arousal is thought to be detrimental to health because it wears down the body's physiological restorative system (McEwen, 2007). Mentally unwinding following a stressful working day is therefore necessary in order to prevent further wear on the physical organism and aid reparative function during the night.

How do individuals switch-off from work?

At the moment it is not known what the optimal technique for switching-off from work is. As reported above, it appears that how one uses leisure time is important (Cropley & Millward, 2009; Rook & Zijlstra, 2006; Sonnentag, 2001). Individuals are likely to ruminate when on their own compared to being with family or friends. A study of school teachers showed that those with high job strain will think and ruminate about work activities even when watching television or socialising (Cropley & Millward, 2003). Unfortunately there is not one leisure activity that appears more beneficial for unwinding than others; what seems more important is how an individual engages with a particular activity (Rook & Zijlstra, 2006; Sonnentag & Fritz, 2007). There is also some evidence to suggest that high and low ruminators use their leisure time in different ways and have different attitudes towards leisure. High ruminators express a 'live to work' philosophy, whereas for low ruminators they report a 'work to live' mentality. This is an aspect of commitment to the job. These differing attitudes to life are reflected in how they use their leisure time. For example, high ruminators appear to use their non paid work time as an extension to work, thus they will work in their leisure time. They will use their PDA's during their 'free time' to monitor and respond to emails, and to make business phone calls, whereas low ruminators will use the same devices to listen to music, chat with friends or to play games, etc (Cropley & Millward, 2009).

Recovery is therefore thought to be an active or proactive process that can be understood in terms of self-regulation (Kellman, 2002). Self-regulation primarily involves the control of thinking, attention, concentration and emotion. All these aspects play an important role in unwinding and recovering from work. Pursuing artistic and cultural activities, socialising, and spiritual/religious life can potentially enhance life satisfaction, and investing in these type of activities are likely to help one switch-off and mentally unwind from work. Mentally unwinding

is thus an action-oriented process, and suggests that an individual needs to develop and apply self-initiated activities in order to recover from work.

Future areas of research

As stated above, the topic of recovery from work has attracted a great deal of attention over the last few years and there is growing evidence to support the assumption that it is not necessarily work demands per se that cause health problems; it is the ability of the worker to recover from work that appears to be a crucial factor in the stress illness relationship. Although there has been a number of interesting and important findings reported in the literature, there are still key areas where we lack specific information and future work is required:

i. more longitudinal studies are needed. At the moment the research is for the most part cross-sectional and it is important to examine how unwinding or lack of it, effects long-term health and well-being.

ii. much of the research reported above has been based on self-report, a greater examination of the effects of work-related rumination on physiological and biological measures are required.

iii. more research is needed to determine what effects the 24/7 economy has on recovery. It has been noted that the pressure on the working population have increased over the past decades, this is partly due to economic developments and management practices (increased demand for efficiency in organisations), and partly due to social and cultural developments. The development towards a 24/7 society may be unavoidable and lead to an improvement in the quality of life for some, but it

also has its downsides as traditional patterns of work and rest have been gradually eroded. As a result, the opportunities to escape or to recover from the demands that are imposed upon us seem to diminish. The 24/7 economy poses more threats in terms of opportunities for recovery as the extended working day reduces the opportunity for daily recovery. When people resume working at home in the evening this results in no time for other activities, which may be important for health and well-being (c.f. Sonnentag, Binnewies, & Mojza, 2010; Zijlstra & Sonnentag, 2006), and more research is needed here.

iv. in this chapter we have discussed rumination in terms of how people unwind and switch-off from work, but it is also apparent that workers start to think and anticipate work before they actually go to work. A recent exploratory study has revealed anticipation of work to be associated with increased saliva cortisol secretion particularly in those reporting high job demands (Devereux, Rydstedt & Cropley, *in press*), and more research is needed to assess the effects of anticipation on health and well-being. This is an important area to investigate as many organisations have scheduled meetings early on Monday morning to recap the previous week and to plan and set goals for the week. It is evident that planning such meetings for Monday mornings may not be the most effective procedure as this could result in high rumination over the weekend.

v. due to the nature of emerging technology it has allowed more and more people to work remotely or from home. At the moment there is a lack of information on the how self-employed or people who work from home switch-off from work. Home workers may find it particularly difficult to switch-off from work especially if they have to work in their every day living environment (i.e., kitchen, living room,

bedroom), as they are continually reminded about their work (Dart, 2006; Olson-Buchanan & Boswell, 2006).

vi. finally, there is a distinct lack of studies that have put forward interventions to help people switch-off, unwind and recover post work. Evidence based intervention strategies need to be developed. These could then be implemented into traditional training programmes to teach people to develop self-regulatory techniques to control their thinking, attention, concentration and emotion.

Summary

The adverse effects of work demands on health and well-being are well documented in the literature. Accumulated stress has repeatedly been associated with physical and psychological health problems. Attention is now being directed to understanding the role 'recovery from work' plays on health, as it is now becoming more apparent that workers need to recover, not only physically, but mentally, from the effects of work demands in order to prevent long term health consequences. We started this chapter by presenting a brief historical account of the changing nature of work and how work and leisure appear intertwined. Today the boundary between work and leisure appears to be gradually eroding and this seems primarily due to the advancement of remote working. Ruminating about work appears more prevalent in people who work in cognitive types of work, however we have argued that it is not necessarily the job that causes people to ruminate post work as there are clearly individual differences in how people unwind during their leisure time.

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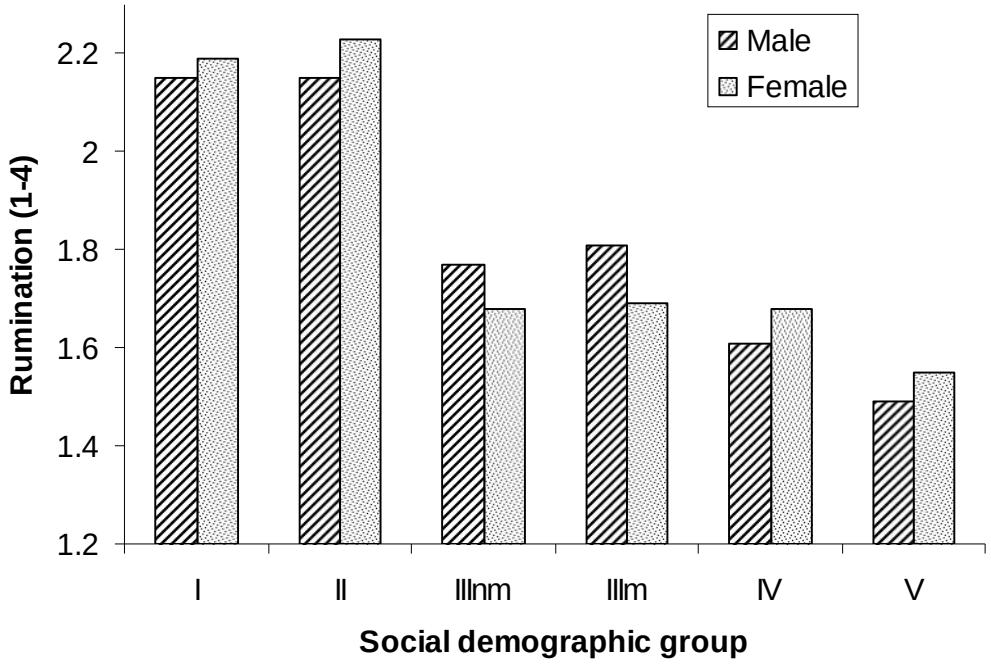
Figure 1. Work-related rumination by socio demographic makeup



Work-related rumination was based on the mean of the following items ('As soon as I get up in the morning I start thinking about work problems'; 'When I get home, I can easily relax and switch-off from work'(reversed), and 'Work rarely lets me go, it is still on my mind when I go to bed'). Ratings 4= strongly agree, 3 = slightly agree, 2 = slightly disagree, 1 = strongly disagree. The internal consistency (Cronbach α) of the computed unwinding factor was .80.

Table 1 Adjusted Odds Ratios for age and sex, (95% confidence intervals) of high versus low ruminators scoring two or more on each of the 14 neurotic symptoms from the CIS-R

	Odds ratios	95% CIs
Fatigue	4.31	(3.29 – 5.65)
Sleep problems	3.54	(2.72 – 4.60)
Irritability	4.47	(3.26 – 6.12)
Worry	4.93	(3.62 – 6.71)
Depression	3.26	(2.16 – 4.93)
Depressive ideas	4.31	(2.70 – 6.90)
Anxiety	5.37	(3.28 – 8.67)
Obsessions	3.56	(1.96 – 6.46)
Concentration	6.40	(3.95 – 10.39)
Somatic symptoms	5.00	(2.76 – 9.33)
Compulsions	1.57	(0.89 – 2.71)
Phobias	3.24	(1.78 – 5.91)
Panic attacks	3.51	(1.28 – 9.63)
Worry about physical health	2.14	(1.27 – 3.60)