

# UNDERSTANDING WORKAHOLISM

*About the role of affect and cognitions*

Corine van Wijhe

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**UNDERSTANDING WORKAHOLISM:  
About the role of affect and cognitions**

**NAAR EEN BETER BEGRIP VAN WERKVERSLAVING:  
Over de rol van affect en cognities**

(met een samenvatting in het Nederlands)

**Proefschrift**

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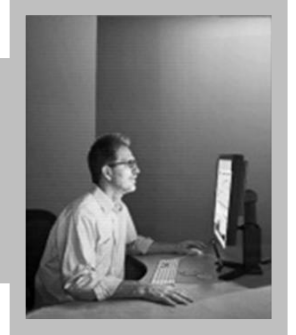
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# CHAPTER 1



## **General introduction**





*"I am doomed to an eternity of compulsive work. No set goal achieved satisfies. Success only breeds new goals. The golden apple devoured has seeds. It is endless."*

Bette Davis (1962), *The lonely life: An autobiography*

### 1.1. Introduction

Many people invest a great amount of time and effort in their work. For instance, in the US, 25 percent of men and 11 percent of woman work more than 50 hours per week (Jacobs & Gerson, 2004). It seems that European workers work somewhat less hard; 18 percent of men and 8 percent of women work more than 48 hours per week (European Foundation for the Improvement of Living and Working Conditions, 2010), whereas Japanese work even harder; 28 percent of the Japanese workforce works more than 50 hours per week and 12 percent even more than 60 hours (Iwasaki, Takahashi, & Nakata, 2006). Some people who work extremely long hours might do this just for the fun of it. Such engaged employees work with passion and take great pleasure in their work, and consequently they work longer hours than prescribed (Schaufeli, Taris, & Van Rhenen, 2008). However, working extreme hours may also be a sign of work addiction: an uncontrollable tendency to work excessively.

Although at first glance work-addicted employees may seem to be an asset for the organization in terms of their commitment and effort, they typically make their work more complicated than necessary (Machlowitz, 1980). For instance, they refuse to delegate work and they often have problematic relationships with their co-workers (Kanai & Wakabayashi, 2001; Spence & Robbins, 1992). In addition, workaholics are characterized by orderliness, rigidity, and a high need for achievement (Mudrack, 2004), as well as by inflexibility and perfectionism (Killinger, 2006). Taken together, this description does not fit with that of an efficient and productive employee. In fact, workaholic tendencies constitute a high potential for stress among co-workers, considering that workaholics perceive their co-workers as being of lesser value than themselves and their co-workers' work as being of a lower quality than their own (Porter, 2001). But it is not only the organization that might suffer from workaholic tendencies; the workaholic himself might also experience adverse consequences, such as psychological distress, poor emotional well-being, and psychosomatic complaints (Burke, 1999b; Schaufeli, Taris, & Van Rhenen, 2008). Moreover, because workaholics work extremely long hours, their families suffer (Bakker, Demerouti, & Burke, 2009) and their social life outside work atrophies (Bonebright, Clay, & Ankenmann, 2000).

In recent years, scientific interest in workaholism is growing. According to Taris and Schaufeli (2007) the publication rate has doubled every 5 years since 1990. At the time of writing, we identified 183 articles on workaholism through a

literature search using PsychInfo. Nevertheless, the existing empirical studies generally use simple, descriptive, correlational designs that do not reveal much about its underlying psychological mechanisms (McMillan, O'Driscoll, & Burke, 2003). On the other hand, there is much speculation about such mechanisms and a solid empirical or theoretical basis is lacking. In this thesis, we therefore try to examine the underlying psychological mechanisms of workaholism using a predefined theoretical framework. The precise role that these psychological factors, such as affect and cognitions, play in workaholism is still to be clearly delineated. Therefore, our central question is: "What psychological factors contribute to workaholism?". More particularly, we focus on the affective and cognitive factors that are involved in workaholism as compared to work engagement. Furthermore, although researchers have identified several harmful factors associated with workaholism, little is known about the actual consequences of workaholism and there is limited insight into the recovery processes among workaholics. Therefore, we aim to gain a deeper understanding of the influence of cognitions and affect on workaholism using a comprehensive theoretical paradigm. Considering the possible negative consequences of working compulsively hard, we aim to use a framework that offers practical possibilities for reducing it.

## **1.2. How to define workaholism?**

The most obvious characteristic of workaholics is that they work far beyond what is required. Consequently, they devote an excessive amount of time and energy to their work, thereby neglecting other spheres of life (Mudrack & Naughton, 2001). However, conceiving workaholism exclusively in terms of the number of working hours would be incomplete because it would overlook its addictive nature. After all, people may work long hours for all kinds of reasons without being addicted to work. Rather than being motivated by external factors such as financial problems, a poor marriage, social pressure or career advancement, a typical work addict is motivated by an obsessive internal drive that (s)he cannot resist. Hence, we define workaholism as an irresistible inner drive to work excessively hard (Schaufeli, Taris & Bakker, 2008). So, in our view, workaholism includes two elements: (1) a strong inner drive to work; and (2) working excessively hard. This two-dimensional conceptualization of workaholism corresponds with the original meaning of the term as it was coined by Oates, who described workaholism as "...the compulsion or the uncontrollable need to work incessantly" (1971, p. 11). In addition, various overviews confirm that both dimensions appear in most definitions of workaholism. For instance, Scott, Moore, and Miceli (1997) observed that virtually all definitions assume that workaholics:

- spend a great deal of time on work activities when given the discretion to do so;

they are excessively hard workers;

- are reluctant to disengage from work, and persistently and frequently think about work when they are not at work; they are obsessed workers;
- work beyond what is reasonably expected from them to meet organizational or economic requirements.

The latter is in fact a specification of the first and second characteristics, because it deals with the motivation to spend an excessive amount of time working. Hence, Scott et al.'s (1997) conceptual analyses revealed that workaholics work harder than is required out of an obsessive inner drive, and not because of external factors. In a similar vein, in seven of the nine workaholism definitions listed by McMillan and O'Driscoll (2006), working excessively hard, and being propelled by an obsessive inner drive, are mentioned as core characteristics. Finally, in an analysis of scholarly definitions, Ng, Sorensen, and Feldman (2007) conclude that hard work at the expense of other important life roles and an obsessive internal drive to work are the two core aspects of workaholism.

Taken together, there seems to be agreement about the two core elements of workaholism, whereby working excessively hard represents the behavioral component that indicates that workaholics tend to allocate an exceptional amount of their time and energy to their work and that they work beyond what is reasonably expected to meet organizational or economic requirements. Working compulsively represents the cognitive component of workaholism, and indicates that workaholics are obsessed with their work and persistently and frequently think about work, even when not at work.

### 1.3. Workaholism versus work engagement

Excessive working could not only be indicative of workaholism, but could also be an indication of work enjoyment. Spence and Robbins (1992) called this *work enthusiasm* but nonetheless they considered it a form of workaholism. In a more recent review, Ng et al. (2007) described workaholics as those who enjoy the *act* of working, rather than the work itself. However, although workaholics may or may not enjoy their work or the act of working, it seems inappropriate to treat enjoyment as an inherent part of work addiction (Mudrack, 2006). In fact, there are indications that "positive workaholism" actually comprises a different psychological state, which is known as work engagement (Schaufeli, Taris, & Bakker, 2006; Schaufeli, Taris, & Van Rhenen, 2008). Work engagement is considered a state of work-related wellbeing that is characterized by vigor, dedication and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). More specifically, "vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence, even in the face of

difficulties. Dedication refers to being strongly involved in one's work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby the time passes quickly and one has difficulties detaching oneself from work" (Schaufeli et al., 2002, p. 74). No difference has been found in the number of work hours of workaholics and engaged employees; they work basically similarly long (Schaufeli, Taris, & Bakker, 2008; Shimazu & Schaufeli, 2009; Van Beek, Taris, & Schaufeli, 2011). So, workaholism and engagement do apparently not differ in terms of working hours; both concepts are associated with overwork. We posit, however, that workaholism can be distinguished from work engagement in terms of the underlying motivation to work hard. It has been suggested that workaholics work hard because of a negative inner drive, whereas work engaged work hard because work is fun for them (Shimazu & Schaufeli, 2009). Workaholics seem pushed to work hard, whereas engaged employees seem pulled to work hard. It would be interesting to learn whether such a difference actually exists. In this thesis, we are specifically interested in the role of affect and cognitions in explaining workaholism and its consequences, and its distinction with work engagement. Before discussing this matter further, we shortly address theoretical perspectives that may be used for understanding workaholism.

#### **1.4. Perspectives on workaholism**

McMillan et al. (2003) distinguish five traditional perspectives on workaholism. First, derived from the common view that workaholism is an addiction to one's work (Porter, 1996), an addiction framework is distinguished. This general framework can be subdivided into a psychological perspective and a medical (or biological) perspective. The former posits that workaholics are psychologically dependent on their work because it comprises some benefits (Eysenck, 1997), whereas the latter hypothesizes that workaholics have become physically dependent on adrenaline (Fassel, 1992). However, so far, neither psychological dependency nor chemical dependency has been demonstrated in workaholics.

Second, McMillan et al. (2003) state that workaholism could be viewed from an operant learning perspective as a learned behavior that originates from continuous reinforcement: the learning theory paradigm. That is, working excessively is considered "desired" behavior, so that reinforcement is maximized. Reinforcements can take the form of praising the workaholic's work ethic and commitment, but also of more tangible rewards such as promotions, bonuses, fringe benefits, or salary increases. In a somewhat similar vein, the social learning paradigm assumes that workaholism results from role modeling: workaholism

stems from imitating influential others, for instance one's father, superiors, or colleagues. Although the learning theory paradigm and role modeling are quite popular in explaining workaholism, so far no research has been carried out to verify their assumptions.

Third, trait theory can be subdivided into a trait-specific and a more broad personality approach. The former equates workaholism with specific trait-like behavioral manifestations, such as perfectionism, strong need for achievement, obstinacy, orderliness, compulsiveness, and rigidity (Mudrack, 2004). The latter consists of generic explanations of human behavior, for instance, higher-order personality traits like conscientiousness (Clark, Livesley, Schroeder, & Irish, 1996) and neuroticism (Burke, Matthiesen, & Pallesen, 2006). Meanwhile, there is compelling empirical support for the relationship of certain personality traits with workaholism, such as obsessive-compulsive personality, narcissism and perfectionism (cf. Andreassen, Hetland, & Pallesen, 2010; Clark, Lelchook, & Taylor, 2010; Mudrack, 2004; Spence & Robbins, 1992). However, trait-like explanations imply a rather negative view on treatment, as personality is stable and resistant to change (McMillan et al., 2003).

A fourth perspective on workaholism stems from family systems theory. According to this approach, workaholism is considered a result from dysfunctional family relationships, whereby family's rules, beliefs, and behavior patterns are crucial to the understanding of workaholism. Basically, this perspective views workaholic behavior as a reaction to a maladaptive family functioning (Robinson, 1998b). According to Robinson, addictive behaviors are passed on from one generation to the next, through a family's rules, beliefs and behavior patterns. However, the literature about this perspective consists mainly of anecdotal case reports.

Finally, the cognitive paradigm may provide a framework for understanding workaholism. Cognitive behavioral theories propose that some individuals may possess a cognitive vulnerability that increases their risk for dysfunctional behaviors and feelings (Beck, 1967; Ellis, 1994). According to Beck's cognitive theory (1995), negative emotional experiences and maladaptive responses can be attributed to an individual's distorted view of himself<sup>1</sup> and the world. These distorted idiosyncratic beliefs (e.g., "I am a failure") may have their origin in maladaptive cognitive structures (schemata) that people have acquired in childhood. Ellis (1994), who was more of a cognitive therapist than a theorist, similarly elucidates the influence of particular modes of thinking (i.e., irrational

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<sup>1</sup> Of course, where "himself", "his" or "he" and so on is used in the text, "herself", "her" or "she" can be read as well.

beliefs) on behavior and emotions. On the basis of this rationale, he developed Rational Therapy (Ellis, 1958), which was later renamed Rational Emotive Behavioral Therapy (REBT; Ellis, 1993). One of the principles of REBT is that individuals' dysfunctional behaviors and emotions are not triggered by adverse events as such, but rather by how they perceive the situation. Although cognitive behavioral approaches, such as REBT, lack a clearly hypothesized theory of change (David & Szentagotai, 2006), the widespread use and effectiveness of cognitive (-behavioral) techniques for a wide range of problems (cf. Butler, Chapman, Forman, & Beck, 2006; Engels, Garnefsky, & Diekstra, 1993; Lyons & Woods, 1991) emphasize their practical utility and theoretical relevance. According to McMillan and O'Driscoll (2008), it is likely that distorted cognitions play a key role in workaholism in a way that workaholic behaviors result from and are maintained by biased cognitions. Nonetheless, the study of workaholics' irrational beliefs is still in its infancy.

Although intuitively appealing, none of these perspectives deal with the crucial question of when and why workaholics actually stop or continue working. This is quite remarkable because the answer to this question seems to be critical, not only for understanding workaholism but also for designing interventions to combat it. Therefore, in this thesis, we introduce a new, alternative perspective on workaholism that originates from clinical psychology and explains why people stop or continue with particular compulsive behaviors, that is, the Mood-as-Input (MAI) model (Martin, Ward, Achee, & Wyer, 1993). This model represents an extension to the Feelings as Information Model, which postulates that moods and emotions denote whether or not individuals have performed satisfactorily (Schwarz & Clore, 1983, 1988). A basic tenet of the MAI model is that individuals use so-called "stop rules" to determine when and why to quit with an open-ended task. In order to evaluate their progress toward a work goal, individuals may ask themselves "Have I done enough?" (*the enough stop rule*), or likewise they might evaluate their enjoyment of performing the work task by asking themselves "Am I still enjoying the task?" (*the enjoyment stop rule*). The essential question is: on what grounds do people answer questions like "Have I done enough?" or "Am I still enjoying the task?" As the name of the MAI model suggests, people use their current mood as a source of information (or input) for answering these questions. That is, when an individual asks himself the question "Have I done enough?", a positive mood signals that he is satisfied with his progress toward the goal, whereas a negative mood signals that he is not satisfied with his progress. In the latter case, he is likely to persist. When an individual asks himself "Am I still enjoying the task?", a negative mood signals that he is no longer enjoying the task, whereas a positive mood signals that he is actually taking pleasure from the task, and in the latter case

he will therefore continue. The MAI model (Martin et al., 1993) has successfully been applied in clinical psychology to explain repetitive cognitions and behaviors such as compulsive checking (MacDonald & Davey, 2005) and might be relevant to workaholism as well.

Although all five perspectives as mentioned by McMillan et al. (2003) are useful for organizing our knowledge of workaholism, in their overview, these authors explicitly suggest that the cognitive paradigm is a promising avenue for future research and has the most important implications for interventions. We propose that also the MAI model provides a useful framework for understanding the psychological process underlying workaholism. Considering the theoretical innovativeness and practical relevance of the MAI model as well as the cognitive paradigm, in this thesis, we will employ both as explanatory frameworks for understanding workaholism. Firstly, using the MAI model, we consider the role of mood and of stop rules in workaholism.

### **1.5. Previous research and this thesis' research questions**

#### *Mood and stop rules*

In evaluating progress toward their work goals, workaholics seem to rely heavily on how much they have done ("Have I done enough?") rather than on how much fun they are experiencing by doing their task ("Am I still enjoying the task?"). And what is more, work addicts feel that they have never done enough; they tend to have unrealistic and endless lists of things to do. In other words, "... they are faced with trying to meet a performance goal that is a moving target" (Porter, 1996, p.77). This ties in with the observation that workaholics are preoccupied with what they "ought" to do, which Mudrack (2004) labeled in terms of a strong superego. On the contrary, and as mentioned earlier, work engaged employees seem to focus on the enjoyment of their work (Van Beek, Hu, Schaufeli, Taris, & Schreurs, 2011). For them, working is synonymous with having fun.

In further support of the MAI model, mood seems to play an important role in workaholic behavior patterns. Workaholics report, on average, high levels of negative affect (Burke & Matthiesen, 2004; Clark et al., 2010), which agrees with the prediction of the MAI model that a combination of a negative mood and using the enough stop rule would foster work persistence. In contrast, positive mood seems to be a predecessor of work engagement (Salanova, Llorens, & Schaufeli, 2011; Ouwenel, Le Blanc, Schaufeli, & Van Wijhe, 2012). Positive mood coupled with intrinsic motivation may explain engagement in work and distinguishes work engaged employees from workaholic employees.

In this thesis, we will use the concept "affect" to refer to a broad range of feelings (Gray & Watson, 2001) including (1) emotions, (2) moods and (3)

temperaments. Emotions are momentary, short-term affective experiences, focused on a particular target or cause. Moods are prolonged, less intensive and more general affective experiences. Temperaments are more stable, underlying tendencies to experience positive and negative moods and emotions across situations. Obviously, emotions, moods and temperaments are interrelated, but differ in duration, focus and intensity. The above considerations lead us to formulate the following question:

*Research question 1: How are mood and stop rules related to workaholism and work engagement?*

### *Cognitions*

Drawing on the cognitive paradigm, we examine the relevance of work-related cognitions for workaholism. According to McMillan and O'Driscoll (2008), workaholism can be considered as originating from distorted beliefs about the self and the world, derived from early experiences and significant others. Burke (1999a, 2001) showed indeed that workaholism is related to cognitions referring to striving against others (e.g., "I feel like I must constantly prove myself"), lack of fair procedures (e.g., "I think that nice guys finish last") and proving yourself (e.g., "Being second best is practically worthless"). Furthermore, it has been frequently suggested that workaholics derive their self-esteem from their performance (e.g., "Without my performance, I am worthless") (Schaufeli, Taris, & Bakker, 2006; Gorgievski & Bakker, 2010; Maxwell & Bachkirova, 2010). This may result in a constant pursuit for better and for more. Moreover, workaholics seem to nourish irrational thoughts with regard to themselves as is reflected by their high levels of perfectionism (Spence & Robbins, 1992; Taris, Van Beek & Schaufeli, 2010). That is, workaholics pursue unrealistically high standards (e.g., "I have to do everything perfectly"), as Oates (1971, p. 77) wrote "...a non-compulsive professional will be able to settle for a less than perfect result. The workaholic has to get 100 percent results." All in all, a cognitive paradigm may provide a useful framework for understanding workaholism. Furthermore, the cognitive approach based on REBT (Ellis, 1994) holds a positive view on the changeability of workaholism; it postulates that workaholism can be reduced via changing and replacing dysfunctional thoughts by using appropriate intervention techniques. Therefore, we put forth the following research question:

*Research question 2: What types of work-related cognitions are associated with workaholism?*



*Work persistence and the role of recovery*

Workaholics seem to end up in a vicious cycle of hard work and too little recovery. Therefore, we set out to uncover the mechanism underlying their compulsive work behavior. Several studies have shown that long work hours may negatively influence employees' health over time (Taris, Beckers, Dahlgren, Geurts, & Tucker, 2007; Van der Hulst, 2003). More specifically, these studies show that working long hours may deteriorate employees' lifestyle, level of physical activity, and sleep quality. Other important consequences linked to working long hours are work-life imbalance (Geurts & Demerouti, 2003) and feelings of exhaustion (Büssing & Glaser, 2000). This reflects that, as employees spend a lot of time working, relatively little time is left for other things. However, it seems that overwork by itself does not have to pose a serious problem. Overwork only impacts health under high work pressure (Van der Hulst). Furthermore, Beckers et al. (2007) found that employees who worked no more than five extra hours per week did not report negative health consequences. It has been suggested that taking time to recover from work is essential for one's health (Meijman & Mulder, 1998). A growing body of empirical research confirms this notion (e.g., Binnewies, Sonnentag, & Mojza, 2009; Sonnentag, 2003). Sonnentag and Fritz (2007) put forward four different subjective off-job experiences that facilitate the recovery process, namely feelings of psychological detachment from work, relaxation, mastery, and control. Empirical studies confirmed that these experiences are negatively related to indicators of ill-being, such as need for recovery, exhaustion and health complaints (Fritz, Sonnentag, Spector, & McInroe, 2010; Siltaloppi, Kinnunen, & Feldt, 2009; Sonnentag & Fritz, 2007).

Workaholics typically find it hard to take time to recover. As they invest much time into their work and continually think about work when not working, little time is left to replenish their affective and regulatory resources through recovery experiences. Burke and El-Kot (2009) indeed showed that workaholic job behaviors are negatively related to the use of both psychological detachment and relaxation. Little is known about the process that hampers the daily recovery of workaholics. Although there are indications that a lack of recovery leads to a depletion of one's affective resources, so far the role of negative emotions in the process of recovery has not been investigated. Considering the association of negative emotions with workaholism (Burke & Matthiesen, 2004), it is plausible that these are not only a sign of impaired recovery, but also may impact the recovery process itself. Therefore, the following research question is examined:

*Research question 3: How are emotions related to recovery experiences and work hours and is this different for workaholics and non-workaholics?*

### *Interventions for workaholism*

Given the adverse effects on the organization, the workaholic himself, his family and his social life, there seems to be a great need to prevent or treat work addiction. It seems essential that employees who are susceptible to developing workaholic behaviors are provided with prevention and counseling programs that help them to reduce their compulsive work drive and maintain a healthy work life balance. Despite the fact that workaholism is increasingly acknowledged as a problem, to date, there are no evidence-based interventions available to prevent or to cure work addiction. However, ever since the term “workaholism” was coined by Oates (1968), many suggestions, which are often based on common sense, have been made on how to prevent or combat it. Some researchers have discussed how workaholism can be addressed by organizations (e.g., Porter, 1996). Others have incidentally recommended how to address workaholism in clinical settings (Burwell & Chen, 2002; Chen, 2006; Killinger, 1991; Robinson, 1998a). For instance, Robinson (1998b) formulates treatment recommendations for spouses of workaholics and Chen (2006) describes a protocol for the treatment of workaholism on the basis of REBT. Despite these anecdotic writings, a comprehensive overview of the literature on potential effective interventions for workaholism is lacking. Based on these considerations, we formulate the following research question:

*Research question 4: What types of interventions described in the literature are most appropriate for reducing workaholism?*

### **1.6. Outline of the thesis**

In *Chapters 2 and 3*, it is examined whether workaholism and work engagement can be discriminated on the basis of mood and stop rules (or persistence rules) (research question 1). Workaholism is expected to be positively related to a combination of negative mood and the enough stop rule, whereas work engagement is expected to be related to a combination of positive mood and the enjoyment stop rule. *Chapter 2* describes the results of an exploratory survey study and employs short descriptions of stop rules for measuring stop rule use among employees. In *Chapter 3*, a work-related persistence rules checklist is developed and validated among employees. The hypotheses are tested in a study among another sample of employees of a Dutch consultancy company.

In *Chapters 4 and 5*, the associations between work-related cognitions and workaholism are examined (research question 2). *Chapter 4* explores the associations among work-related irrational beliefs, negative emotions and workaholism in a cross sectional study among a convenience sample. We addressed these associations by developing a new measure of work-related irrational beliefs. *Chapter 5* presents the results of a two-wave full panel study on the relationships among performance-

based self-esteem, the enough continuation rule, workaholism and emotional exhaustion. The study is carried out among employees of a Dutch university.

In *Chapter 6*, the day-to-day recovery experiences of workaholics are examined (research question 3). It explores the influence of emotions on recovery experiences for workaholics versus non-workaholics. For this study, a sample of university employees and a convenience sample participated in a 5-day diary study.

In *Chapter 7*, possible interventions for workaholism are described and critically discussed (research question 4). This chapter presents an overview of the literature on interventions for workaholism and describes the development of an online training for reducing workaholism.

In *Chapter 8*, conclusions are drawn from the study results and theoretical implications are outlined. Furthermore, recommendations for future research and practical implications are discussed.



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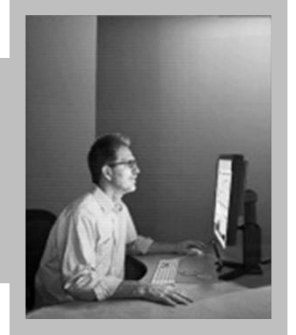
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# CHAPTER 2



## **Understanding workaholism and work engagement**

*The role of mood and stop rules*

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## 2.1. Introduction

Nowadays, many employees work long hours (Drago, 2000). It seems that the pressures of the global economy and the concomitant increased competition prompt organizations to reward employees who are willing to work hard for a career (Blair-Loy & Jacobs, 2003; Schabracq & Cooper, 2000). In addition, high speed data connections make it possible for employees to work at any time, in any place. These recent developments may stimulate employees to work long hours.

In the early seventies, Oates (1971) suggested that working beyond the limits of sufficiency may resemble an addiction to work, a phenomenon which he coined "workaholism". That is to say, particular features of work addiction are similar to other addictions, for instance displaying excessive behaviors and disregarding other significant domains in life (Porter, 1996). Ever since Oates introduced the term workaholism, several scholars have undertaken the quest for a better understanding of this career side effect (e.g., Mudrack, 2004; Ng, Sorensen, & Feldman, 2007). This has led some to consider workaholism as a merely harmful occurrence (Oates, 1971; Porter, 1996; Taris, Schaufeli, & Verhoeven, 2005), whereas others regard it as mainly positive (Peiperl & Jones, 2001). Still others consider workaholism as both positive and negative (Ng et al., 2007; Spence & Robbins, 1992). Based on a thorough review of the literature, Scott Moore, and Miceli (1997) distinguish three constituting features of workaholism. Firstly, workaholics put a lot of hours in their work when they get the opportunity to do so. Secondly, workaholics are unwilling to disengage from work and they persistently think about work when they are not working. Thirdly, workaholics work beyond what is reasonably expected from them to meet organizational or economic requirements. From that, we derive that workaholism consists of a behavioral dimension (investing an excessive amount of time and energy into work, much more than is reasonably expected) and a cognitive dimension (having an irresistible drive to be involved in work related matters) (Schaufeli, Taris, & Bakker, 2008). The behavioral feature is necessary (Snir & Harpaz, 2006), but not sufficient to define workaholism. It is the combination of the behavioral and cognitive elements that is held to be crucial for work addiction (Schaufeli Bakker, Van der Heijden, & Prins, 2009).

However, rather than out of an inner compulsion, employees may also work unusually hard for other reasons. Excessive working may also reflect enjoyment and vitality, which is often labeled as work enthusiasm (Spence & Robbins, 1992) or work engagement (Maslach, Schaufeli, & Leiter, 2001). Work engagement is considered a persistent affective-cognitive state of well-being that is rather pervasive (Schaufeli, Bakker, & Van Rhenen, 2009) and not related to any specific objects or events, and is expressed through vigor, dedication and absorption in work (Schaufeli, Salanova, González-Romá, & Bakker, 2002). More

specifically, “vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence, even in the face of difficulties. Dedication refers to being strongly involved in one’s work, and experience a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption is characterized by being fully concentrated and happily engrossed in one’s work, whereby the time passes quickly and one has difficulties detaching oneself from work” (Schaufeli et al., 2002, p. 74). Of these three dimensions, vigor and dedication are regarded as the core features of work engagement (Schaufeli & Bakker, 2004).

Up to date, only a few studies have examined the differences between the career outcomes of workaholism and work engagement. Nevertheless, the existing studies provide evidence for the discriminant validity between the two concepts (e.g., Schaufeli, Schaufeli, Taris, & Bakker, 2006; Schaufeli, Shimazu, & Taris, 2009). For instance, Schaufeli, Taris, and Van Rhenen (2008) found in a study among Dutch managers that, in contrast to work engagement, workaholism is related to adverse outcomes, such as negative reactions of others, impaired social functioning and poor health. The study of Shimazu and Schaufeli (2009) confirmed the finding that workaholism is related to ill-being, whereas work engagement is related to well-being. While workaholics and engaged employees may not be differentiated by long work hours (Schaufeli, Taris, & Bakker, 2008; Smulders, 2006), we assume that differences in motivation are involved. Therefore, the current study aims at disentangling the different underlying motivation that drives workaholic and engaged employees to work excessively hard.

### *The Mood-as-Input approach*

The Mood-as-Input (MAI) model (Martin & Davies, 1998) might provide an explanation for the different motivational mechanisms underlying workaholism and work engagement. The MAI model assumes that people tend to interpret their mood states as relevant input for evaluating the progression towards their goals. However, how positive or negative affect will be interpreted, depends upon the goals that accompany those feelings (Martin & Stoner, 1996), or more specifically upon the “stop rules” people use (Martin, Ward, Achee, & Wyer, 1993). Individuals may decide to stop with an activity because they do not enjoy the activity any longer, which is referred to as an *enjoyment* (“feel like continuing”) *stop rule*. Alternatively, individuals could also decide to stop with an activity because they believe that they have done enough, which is in the present study referred to as the *enough* (“as many as can”) *stop rule*. The MAI hypothesis (Martin, 2001) posits that if an enough stop rule is used, individuals who are in a positive mood are likely to interpret their positive feelings as a signal that they have done enough. In other

words, they achieved their goal, which leads individuals to discontinue an activity. Correspondingly, those in a negative mood may interpret their feelings as a signal that they are not yet satisfied with the result, thus fostering persistence. If an enjoyment stop rule is applied, individuals in a negative mood are expected to interpret their negative feelings as a signal that they do not enjoy the activity any longer, and consequently may quit the activity. However, those in a cheerful mood using the same stop rule may likewise interpret their positive feelings as a signal that they are still enjoying the activity, and consequently persist with the activity.

In the field of clinical psychology the MAI model has successfully been applied to explain compulsive behaviors such as rumination (Watkins & Mason, 2002) and worrying (Davey, Startup, MacDonald, Jenkins, & Patterson, 2005). In addition, in an experiment on obsessive-compulsive (OC) checking, MacDonald and Davey (2005) manipulated mood (negative vs. positive) and stop rules (enough vs. enjoyment) of healthy volunteers. As predicted by the MAI model, the most significant persistence on a checking task was found for the combination of negative mood and an enough stop rule, which is most similar to the characteristics of the compulsive checking in obsessive compulsive disorder (OCD). Outside the field clinical psychology, studies on the MAI model are still scarce (cf. George & Zhou, 2002 for an exception). In fact, the current study is the first to apply the MAI model to compulsive career behavior (i.e., workaholism).

#### *The MAI model and the motivation to work persistently*

The aim of the current study is to use the MAI model to help distinguish between work engagement and workaholism. More specifically, we seek to answer the question: Does the interaction between mood and stop rules predict workaholism and work engagement? After all, the MAI model is a *general* model that attempts to explain all sorts of perseverance, and therefore can potentially be applied to other persisting behaviors such as workaholism. Available evidence on workaholism and work engagement suggests that the MAI model may be useful to explain differences in work persistence. For instance, Burke and Matthiesen (2004) found that workaholic employees ("work addicts") showed less positive and more negative affect than work engaged employees ("work enthusiasts"). In addition, it has been observed that positive affect is positively associated with work engagement (Schaufeli & Van Rhenen, 2006), whereas negative affect is positively related to workaholism (Clark, Lelchook, & Taylor, 2010). Finally, Porter (1996) suggests that workaholics work excessively in order to avoid the negative emotions they experience when not working, suggesting that negative emotions might precede excessive work behavior. Based on these considerations, we predict that negative affect is positively related to workaholism (Hypothesis 1). Additionally, it is

hypothesized that positive affect is positively related to work engagement (Hypothesis 2).

In some occupations, such as in managerial, professional, and entrepreneurial jobs, work keeps piling up, so that the person's job is never done (Blair-Loy & Jacobs, 2003). The combination of a demanding career and the opportunity to work anytime, anywhere and anyplace underline the importance of self-control. That is, instead of relying on external agents, the employee him- or herself has to decide when to stop working. Since workaholics by definition work far beyond their job descriptions, it is obviously difficult for them to reach a point where they feel they may have done enough. Workaholics are characterized "by an unwillingness to disengage from work" (McMillan & O'Driscoll, 2006, *p.* 89) and by a strong need for achievement (Ng et al., 2007). They may therefore not be able to set boundaries because they never feel that they put enough effort into their work, due to an underlying enough stop rule. Work engaged employees, on the other hand, work long hours because the work gives them satisfaction and provides a sense of meaning (Schaufeli et al., 2002), potentially pointing to the hedonic enjoyment stop rule those employees use. Work is fun for work engaged employees, but when it is no longer fun, they quit working. Therefore, it is expected that the enough stop rule is positively related to workaholism (Hypothesis 3) and that the enjoyment stop rule is positively related to work engagement (Hypothesis 4).

Finally, in line with the basic premises of the MAI model it can be speculated that the interpretation of negative and positive mood by workaholic and engaged employees, based on their stop rule, may similarly foster their persistence in working. For that reason, we examined whether the combination of an enough stop rule with a negative mood is particularly characteristic of work addiction. That is, does negative mood moderate associations between the enough rule and workaholism? We expected that when using an enough rule to decide when to stop working, employees who experience high levels of negative affect tend to have higher levels of workaholism than those who display low levels of negative affect (Hypothesis 5). We also examined whether a combination of an enjoyment stop rule with a positive mood is typical for work engagement. That is, does positive mood moderate associations between the enjoyment rule and work engagement? We expected that when using an enjoyment rule to decide when to stop working, employees who experience high levels of positive affect tend to have higher levels of work engagement than those who display low levels of positive affect (Hypothesis 6).



## 2.2. Methods

### *Participants and procedure*

A convenience sample of 340 employees was approached to take part in the study. Ultimately, 173 participants consented, yielding a response rate of 51%. The sample comprised 83 men and 90 women with a mean age of 38.4 years ( $SD = 11.8$ ). According to their contract, employees worked on average 35.0 ( $SD = 6.1$ ,  $range = 16.0 - 60.0$ ) hours a week. Their actual working hours were on average 38.9 ( $SD = 9.0$ ,  $range = 16.2 - 68.0$ ). A substantial part of the sample (27%) worked in health care, a comparable part (26%) worked for public agencies, 9% worked in business services and 6% worked in industry, whereas the remaining 32% were employed in various types of occupations. Almost one quarter (23%) of the sample reported to be involved in a management role. Overall, the sample was highly educated with 65% holding at least a bachelors degree. Participants were asked to fill out a number of questionnaires. In addition, they were asked to read two short scenarios of a hypothetical character who decided to quit working for different reasons and answer a series of questions about each scenario.

### *Measures and materials*

*Workaholism* was measured with two scales of the Dutch Work Addiction Scale (Schaufeli, Taris, & Bakker, 2008). The first scale was Working Excessively (seven items, an example item is "I overly commit myself by biting off more than I can chew"). The alternate scale is Working Compulsively (nine items, an example item is "I feel obliged to work hard, even when it's not enjoyable"). The internal consistencies of both scales are .70 and .84, respectively. Participants responded to each item on a 4-point scale (1 = "never", 4 = "always").

*Work engagement* was measured with the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006). Two scales of the UWES were used to measure the core dimensions of work engagement; Vigor (three items,  $\alpha = .82$ , an example item is "At my work, I feel bursting with energy") and Dedication (three items,  $\alpha = .86$ , an example item is "I am proud of the work that I do"). The items of the engagement scales were scored using a 7-point response format (0 = "never", 6 = "every day").

As our main objective was to explore the use of the enough and enjoyment stop rules in the work context and since no validated questionnaire is yet available to assess stop rules in the work situation, *stop rule scenarios* (i.e., brief descriptions of a hypothetical person using a stop rule in deciding when to stop working) were used to explore the enough and enjoyment stop rules as applied to work situations. The *enough scenario* was as follows: "Albert is doing his job. As long as he can do more, he continues working. Only when he is confident that he has done as much as he can, he

*decides to stop working*". The *enjoyment scenario* was as follows: "*Bert is doing his job. As long as he enjoys his activities, he continues working. Only when he feels that he no longer enjoys what he is doing, he decides to stop working*". The names in the scenarios were adapted according to the participants' gender. In order to measure the degree to which the participants used both stop rules in their workplace, and to examine the consistency of the stop rule use across time, each scenario was followed by the same three questions: a) "To what extent do you identify with <name> in general?"; b) "To what extent do you identify with <name> the last few work days?"; c) "To what extent do you identify with <name> at the present moment?". These three questions were all scored on a 10-pointscale (1 = "not at all", 10 = "completely"). Cronbach's alpha for the enough scenario scale was .92 and for the enjoyment scenario scale .91.

*Mood states* were measured with the Dutch version (Peeters, Ponds, & Vermeeren, 1996) of the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988), a 20-item self-report measure of mood. Participants indicated how they felt "right now" on a 5- point scale. In the current study, Cronbach's alpha for *positive affect* (10 items, e.g., "active", "enthusiastic", "inspired") was .86<sup>2</sup> and for *negative affect* (10 items, e.g., "nervous", "irritable", "distressed") .88.

*Control variables.* Gender (0 = male, 1 = female) and age were used as control variables. Furthermore, considering that autonomy in working hours is a prerequisite for using stop rules, a measure of autonomy was used as a control variable, assessed with one item (i.e., "To what extent do you have the autonomy to decide when to stop working on a workday?") on a 4-point Likert scale (1= "not at all", 4 = "to a large extent").

### *Data analysis*

Structural equation modeling with AMOS 16 (Arbuckle, 2007) was used to examine the relationship of negative affect, the enjoyment stop rule, and their interaction with workaholism, and the relationship of positive affect, the enjoyment stop rule and their interaction with work engagement, respectively. The latent construct of

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<sup>2</sup> Given the possible overlap between work engagement and positive affect, a Confirmatory Factor Analysis (CFA) was conducted on the work engagement (UWES) items and the positive emotions (PANAS) items. A one-dimensional structure was tested against a two-dimensional structure, with engagement and positive emotions as separate dimensions. Relative to the one-factor model ( $\chi^2 = 91.53$  ( $df 5$ ),  $p < .001$ , NFI = .80, CFI = .81, GFI = .84., RSMEA = .32) the fit of the two-dimensional structure was superior ( $\chi^2 = 16.43$  ( $df 4$ ),  $p < .01$ , NFI = .96, CFI = .97, GFI = .97, RSMEA = .13),  $\Delta\chi^2 = 75.10$  ( $\Delta df 1$ ),  $p < .001$ . This result supports the distinctiveness of work engagement and positive mood states.

workaholism was measured using two indicators (working compulsively and working excessively). The latent variable work engagement was also assessed by two indicator variables (vigor and dedication). The independent variables were centered to avoid multicollinearity between the main effect variable and its interaction. The interaction terms (negative mood by enough stop rule, and positive mood by enjoyment stop rule) were created by multiplying the centered means of the relevant predictors. We examined overall model fit using the chi-square goodness-of fit statistic, Goodness of Fit Index (GFI), Root Mean Squared Error of Approximation (RMSEA), Normed Fit Index (NFI) and Comparative Fit Index (CFI). RMSEA values less than .10 are considered acceptable, whereas values equal to or less than .05 indicate good model fit (Kline, 2005). GFI, NFI and CFI values greater than .90 indicate acceptable model fit, whereas values close to .95 indicate good model fit (Hu & Bentler, 1999; Kline).

### 2.3. Results

Table 2.1 provides means, standard deviations and correlations of the study variables. An inspection of the correlation matrix suggests that the relationships among variables are in the expected direction. Strong positive correlations are observed between the enough stop rule and both components of workaholism. Significant, albeit weak, positive correlations are found between negative affect and working compulsively. In addition, there are strong correlations between positive affect and the two work engagement components, vigor and dedication. Remarkably, no significant correlations are found between the enjoyment stop rule and the components of work engagement, whereas moderate correlations are observed between the enough stop rule and the components of work engagement.

#### *Structural equation modeling*

The results of the structural equation analysis are presented in Table 2.2 and Figure 2.1. Model (M1) provides a reasonable fit to the data. After the non-significant paths were removed from the model (M1°, see Figure 2.2), the fit of the model did not significantly deteriorate,  $\Delta\chi^2 = 10.30$  ( $\Delta df$  10),  $p = ns$ . It was expected that negative affect would be positively related to workaholism (H1). As can be seen in Figure 2.2, the structural analysis reveals that negative affect contributes significantly to workaholism ( $\beta = .29$ ,  $p < .001$ ). In other words, Hypothesis 1 is confirmed. It was also predicted that positive affect was positively related to work engagement (H2). The path analysis indicates that positive affect is positively related to work engagement ( $\beta = .48$ ,  $p < .001$ ). Hence, Hypothesis 2 is confirmed. Hypothesis 3 predicted that the enough stop rule was positively related to workaholism. The path analysis shows that the enough stop rule is a strong significant predictor of workaholism.

Table 2.1. Means (M), standard deviations (SD), and zero-order correlations for variables (n = 173)

	M	SD	Min	Max	1.	2.	3.	4.	5.	6.	7.	8.
1. Working Excessively	2.21	0.51	1.00	3.43	–							
2. Working Compulsively	1.80	0.52	1.00	3.11	.62***	–						
3. Vigor	4.11	1.08	1.33	6.00	.14	-.04	–					
4. Dedication	4.30	1.13	1.33	6.00	.15	-.07	.74***	–				
5. Negative affect	1.37	0.52	1.00	4.80	.14	.30***	-.22**	-.11	–			
6. Positive affect	3.14	0.64	1.40	4.60	.01	.03	.49***	.40***	-.10	–		
7. Enough stop rule	5.19	2.56	1.00	10.00	.45***	.41***	.25**	.19*	-.02	.22**	–	
8. Enjoyment stop rule	4.83	2.54	1.00	10.00	.09	-.05	.09	.10	.04	.01	.09	–

Note. Means for workaholism reflect the 4 points of the Likert scale; means for work engagement reflect the 7 points of the Likert scale; means for affect reflect the 5 points of the Likert scale; stop rule scores ranged from 0 to 10. \*  $p < .05$ , \*\*  $p < .01$  \*\*\*  $p < .001$

Table 2.2. Fit indices of the structural path model

Model	$\chi^2$	df	p	GFI	RMSEA	NFI	CFI
M1	47.32	25	.004	.96	.07	.89	.94
M1°	37.02	15	.001	.96	.09	.91	.94

Note. Model = type of model based on number and configuration of factors; M1 = Hypothesized path model; M1° = Trimmed path model

holism ( $\beta = .56, p < .001$ ). This finding supports Hypothesis 3. Furthermore, it was expected that the enjoyment stop rule was positively related to work engagement (H4). The path analysis shows that the enjoyment stop rule is not a significant predictor of work engagement. Therefore, Hypothesis 4 is not supported.

Furthermore, we tested whether the interaction of negative affect with the enough stop rule contributes to the prediction of workaholism (H5) and whether the interaction of positive affect with the enjoyment stop rule predicts work engagement (H6). Contrary to expectations, the analyses did neither show a significant interaction term of negative affect and the enough stop rule on workaholism nor a significant interaction term of positive affect and the enjoyment stop rule on work engagement. Hence, no evidence is found to support Hypothesis 5, or Hypothesis 6.

With respect to the control variables, it was found that age is positively related to work engagement ( $\beta = .15, p < .05$ ), whereas it is negatively related to workaholism ( $\beta = -.15, p < .05$ ). Autonomy is positively related to work engagement ( $\beta = .17, p < .05$ ).

## 2.4. Discussion

### *Main findings and theoretical implications*

The main purpose of the present study was to explore the applicability of the MAI model (Martin et al., 1993) to work behavior. So far, very few studies applied the MAI model to other domains than the clinical field. We evaluated the usefulness of the model for explaining the difference in underlying motivation to work hard between workaholic and engaged employees. Our findings that negative affect is associated with workaholism (H1), and that positive affect is associated with work engagement, (H2) are in line with previous research (e.g., Burke & Matthiesen, 2004; Schaufeli & Van Rhenen, 2006, respectively). Since one of the characteristics of an addiction is that people execute a specific behavior to alter a mood state (Griffiths, 2005a), our findings may imply that working frantically may be an attempt to modify (Griffiths, 2005b) or to avoid one's negative mood state (Porter, 1996). Positive affect, on the other hand, stimulates approach behavior, which motivates individuals to engage in particular activities (Carver & Scheier, 1990), and leads to work engagement (Salanova, Llorens, & Schaufeli, 2011).

A novel finding, based upon employees' responses to short descriptions of a hypothetical employee, is that workaholics are likely to continue working when they can do more and only stop when they feel that they have done enough (H3). This is in line with the common perspective on workaholism, namely that workaholics compulsively work beyond their job descriptions (Schaufeli, Taris et al., 2006; Schaufeli, Taris, & Van Rhenen, 2008). The finding sheds light on the moti-

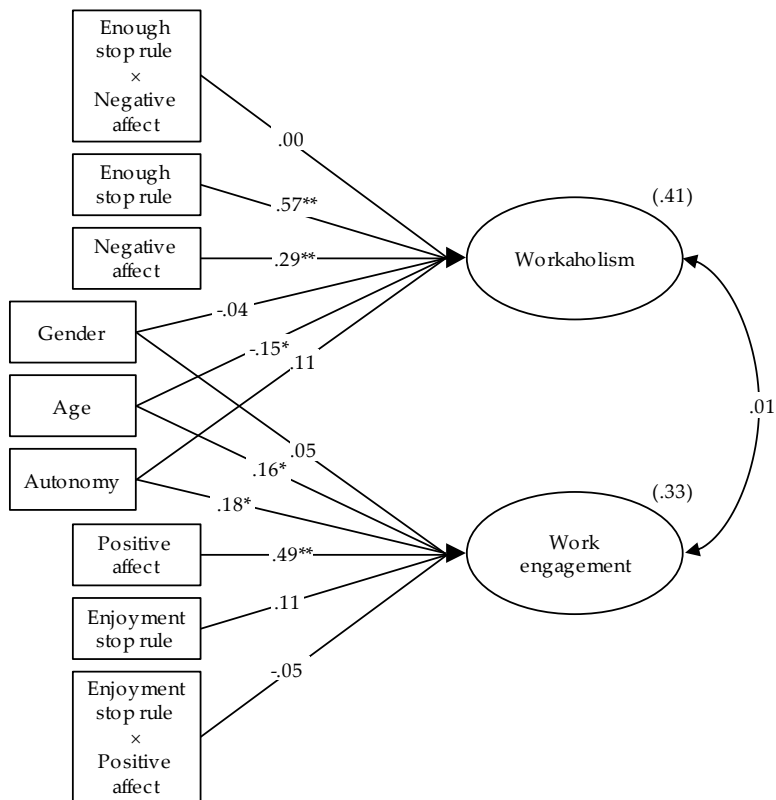


Figure 2.1. Standardized path coefficients of negative affect, the enough stop rule, and their interaction term on workaholism, and of positive affect, the enjoyment stop rule and their interaction term on work engagement (controlling for gender, autonomy and age); \*  $p < .05$ , \*\*  $p < .001$ .

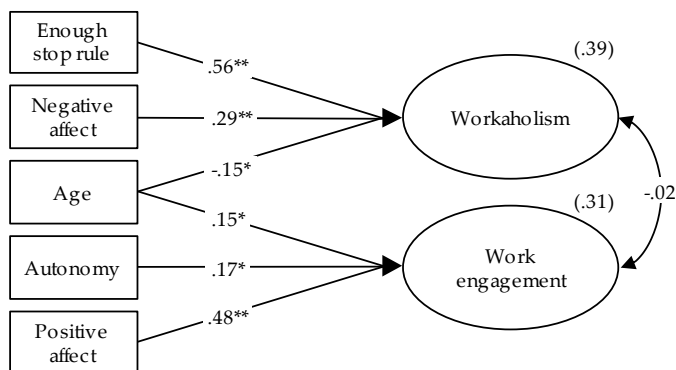


Figure 2.2. Standardized path coefficients of negative affect and the enough stop rule on workaholism, and of positive affect on work engagement after elimination of the non-significant paths (controlling for autonomy and age); \*  $p < .05$ , \*\*  $p < .001$ .

vation of these employees to work longer hours than they have to. It seems to imply that workaholic tendencies may be energized by high personal standards and self-imposed goals, and not by enjoyment of work. When workaholics fail to meet their own expectations they may feel incompetent. In order to boost their feelings of low self-worth, workaholics may work even harder to attain their career goals (Porter, 1996). In contrast, no relationship existed between the enjoyment stop rule on the one hand and work engagement on the other hand (H4). A possible explanation for this lack of the relationship might lie in the way the scenarios are formulated. The enjoyment stop rule scenario describes a person who quits when he or she no longer enjoys his or her activities. However, in hindsight this might be ambiguous considering that most people have a job that they, at least to some degree, enjoy doing. On second thoughts it would have been better to use a description of a person who quits working when noticing that for the moment he or she enjoys the task *to a lesser degree*. Furthermore, one also might argue that the lacking relationship might indicate that engaged employees use different criteria to quit than enjoyment stop rules.

The expected interactions between the enough stop rule and negative mood on workaholism in general (H5) and between the enjoyment stop rule and positive affect on work engagement (H6) were not established. This possibly indicates that employees do not use their current mood as input to their stop rules. However, it is also possible that the lacking interaction between mood and stop rules could be a result of reduced statistical power; that is the difficulty of identifying moderation in nonexperimental research (McClelland & Judd, 1993). Finally, it seems that work engagement slightly increases with age, whereas workaholism rather declines with age. Furthermore, it appears that work engagement increases with the freedom to decide when to stop working. However, these relationships are rather weak, and therefore the importance of these findings is questionable.

### *Limitations*

A shortcoming of the survey study is that it is unknown to what extent the convenience sample represents the characteristics of the general population. However, rather than generalizable to the working population, the current study is exploratory in nature because it applies the MAI model to the work context for the first time. Still, the occupational heterogeneity of the present sample might have influenced the results on the use of stop rules. That is, the level of autonomy to decide when to stop and continue working is different for every employee, depending upon the type of job involved. We tried to solve this issue by controlling for self-reported autonomy. However, a more reliable approach would be to study a

homogeneous population, well-known for its working time autonomy. Although using short scenerios in exploratory research has some advantages, a drawback of such an approach to assessing stop rules is the issue whether the hypothetical situations used relate to real life. Despite the limitations of this approach in terms of representativeness, we believe that the scenarios provided valuable insights into the participants' perspective on reasons to stop working.

In addition, the MAI model does not provide a framework for distinguishing other potentially relevant stop rules. Obviously, there are plenty of other reasons why people quit working on a workday. However, the focus of the current study was on distinguishing internal stop rules of work engaged and workaholic employees. Our findings may serve as a basis for more extensive research on stop rules. Furthermore, according to Podsakoff and Organ (1986) the use of self-reports may bias the results due to common method variance which artificially inflates the relationships between such variables (e.g., response styles). However, Spector (2006) has argued that the impact of common method variance has been largely overrated and is not specific for self-report measures. Finally, one might argue that work engagement and positive affect are conceptually closely related. Nonetheless, we are confident that this conceptual overlap does not bias the findings of our study. Firstly, work engagement is cognitive-affective concept (i.e., a state of mind), whereas positive affect is an affective concept (i.e., state of feelings). To illustrate, an employee might feel general enthusiasm regarding his job, but in the meantime he might also experience other specific fluctuating emotions at work. Hence, work engagement is a generally chronic state, whereas positive emotions are momentary experiences. Secondly, a Confirmatory Factor Analysis showed that work engagement and positive affect formed two reasonably distinct factors.

### *Future research*

In contrast to the present study, George and Zhou (2002) used a more objective dependent measure (creative performance as rated by a supervisor). It would be interesting to examine whether measuring the objective persistence of workaholics and work engaged employees (by means of observation) is a useful approach to capturing the mood/stop rule interaction than their subjective experience only. Furthermore, it is likely that in a career context other types of subjective experiences, other than mood, will affect stop rules. Vaughn Malik, Schwartz, Petkova, & Trudeau, (2006), for instance, found that people may use regulatory fit as input to their stop rules. Regulatory fit is the extent to which one's goal-pursuit strategies corresponds to one's goal orientation (promotion versus prevention) (Higgins, 1997, 1998). Briefly, prevention-focused individuals concentrate on avoiding the presence of negative outcomes, whereas promotion-focused



individuals concentrate on avoiding the absence of positive outcomes. Evidence shows that experiencing regulatory fit produces feelings of rightness, whereas regulatory nonfit causes feelings of wrongness (Camacho, Higgins, & Luger, 2003). Further examination of other types of subjective experiences in the context of stop rules offers an interesting avenue for further investigation.

Furthermore, since autonomy as a control variable contributed significantly to work engagement, it might be illuminating to add a more comprehensive measure of autonomy. By means of this measure it could be further elaborated whether worker's hours flexibility or whether the nature of the work itself (e.g., should a task essentially be completed at the end of the day) influences work engagement and workaholism. It is possible that after including these aspects of autonomy the enough rule is still related to workaholism, since workaholics may be unable to detach from work, regardless of the level of autonomy. For instance, Russo and Waters (2006) found that workaholism did not moderate the relationship between access to weekly flexible scheduling and work family conflict.

In addition, the mood-as-input process may be difficult to capture in a survey design, as mood and stop rule use may fluctuate on a day to day level. We suggest that future research could examine the day to day interplay of stop rules and mood by means of ambulatory monitoring to gain a better understanding of the motivation to work persistently. Moreover, future research should focus on the framing of stop rules. In the model as proposed by Martin (2001) only two stop rules are included, i.e. the enough and enjoyment stop rule. Several studies proposed alternative stop rules. For instance, Jefferis, and Fazio (2008) proposed a "mastery" and "tiredness" stop rule. It is likely that some employees could also be focused on performing their daily work until they are "tired" or until they have "mastered" a certain task. It might be that in work contexts one of these stop rules, most probably the "tiredness" stop rule, substitutes the enjoyment stop rule. Considering the fact that both work engaged and workaholic employees seem to have a strong focus on continuing working, it might also be valuable to distinguish between reasons to stop and to continue working. A final question we consider a fruitful topic for future research is to what extent stop rules can be altered. If feasible, this might form a plausible foundation for intervention programmes for workaholics (Chapter 7).

### *Practical implications*

This study is potentially valuable to Human Resource (HR) managers and career counselors, as it gives insight into the difference between workaholism and work engagement. Since workaholism is associated with burnout and job satisfaction (Burke, Matthiesen, & Pallesen, 2006), it is vital for organizations to assess and

monitor workaholism. HR professionals and counselors should become aware of the fact that levels of positive and negative affect, but also the reasons of employees to work long hours, may differ. This knowledge can help professionals to specifically address the critical issue of addiction to one's work, and thereby stimulating the career development of employees (Burke & McDermid, 1999). In addition, in order to facilitate the adoption of enjoyment rules by employees, it is important for organisations to create resources that are known to cultivate enjoyment at work, such as social support and clearly defined work goals (Salanova, Bakker & Llorens, 2006).

Furthermore, since demanding careers can easily result in working too long hours and workaholism (Cooper, 2005), employees have to take their responsibility of finding or keeping a healthy way of working. Career counseling may help employees to reflect on their underlying motivations and ambitions, and to strive for a healthy balance between work and private time.

### *Conclusion*

All in all, the results of our study show that workaholics reported more negative affect, whereas work engaged employees experienced more positive affect. In line with expectations, workaholism is associated with different reasons to stop or persist working than work engagement. Workaholism is related to continuing until the employee feels that he or she put sufficient effort into work, whereas work engagement is not related to using this criterion. To our knowledge, this is the first study that used the MAI model to uncover the motivation to work persistently. For a precise account of how, where and when mood and stop rules influence workaholism and work engagement, more research needs to be conducted. Nonetheless, the present findings may serve as a starting point for further inquiry into how workaholic and engaged employees differ regarding their motivation to work persistently.

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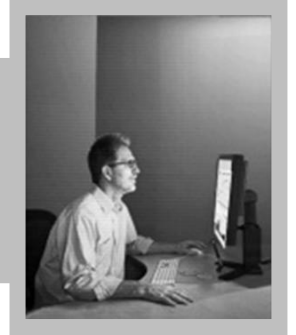
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# CHAPTER 3



## **To stop or not to stop, that's the question**

*About persistence and mood  
of workaholics and work  
engaged employees*

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### 3.1. Introduction

Nowadays, a growing number of employees, mainly knowledge workers, have control over their working hours, indicating that they have the opportunity to decide themselves when to stop working (Costa, Sartori, & Åkerstedt, 2006). Additionally, the frequent use of mobile devices such as cell phones and laptop computers makes it possible to work at alternative workplaces, such as at home (Sullivan, 2003) or in airport lounges (Forlano, 2008). At the same time, restructuring and downsizing have led workers to cope with a higher workload (Cascio, 2002; Galinsky, Kim, & Bond, 2001). Consequently, in many occupations work is never completely finished at the end of the day. While many people do not find it difficult to put their work aside after office hours, more and more employees may work longer hours than they actually have to (Golden, 2009).

It can be argued that a distinction can be made between two different types of chronically hardworking employees. One group is labeled as workaholics, whereas the others are referred to as work engaged employees (Schaufeli, Taris, & Bakker, 2006). To date, few studies have looked specifically at the difference in work motivation between workaholics and work engaged employees. It is relevant to distinguish between workaholism and work engagement, since apparently, as we will argue later, similar work behaviors lead to opposite outcomes. A better understanding of the mechanisms underlying workaholism and work engagement might facilitate the implementation of more timely and appropriate interventions for enhancing healthy work behaviors. Therefore, the current study aims to gain insight in the motivational difference between these two types of employees.

#### *Workaholism and work engagement*

Oates (1971) coined the term workaholism to refer to persistent work behavior. Ever since, scholars have started to examine workaholism, which has led to different points of view on its origin and characteristics. For instance, some hold a negative view of workaholism (Oates, 1971; Robinson, 2000), whereas others also emphasize its beneficial elements (Machlowitz, 1980; Scott, Moore, & Miceli, 1997). Similarly, some suggest that workaholism consists of a compilation of personality traits (Mudrack, 2004), whereas others think of it as learned addictive behavior (Porter, 1996). In spite of the disagreement, Scott et al. concluded that the vast majority of scholars commonly define workaholism as consisting of two elements: 1) the tendency to work long hours, whereas at the same time 2) having a strong inner drive to work. In concordance with Schaufeli, Taris, and Bakker (2008, p. 219), we therefore define workaholism as “an obsessive, irresistible inner drive to work excessively hard”.

Alternatively, an enthusiastic involvement in work, also called work enga-

gement, could also explain why some employees work persistently. According to Schaufeli, Salanova, González-Romá, and Bakker (2002) work engagement refers to a positive, fulfilling, work-related state of mind, which consists of three dimensions. These dimensions are vigor (having high levels of energy), dedication (being strongly involved in one's work) and absorption (being completely engrossed in one's work). Empirical investigation (González-Romá, Schaufeli, Bakker, & Llorens, 2006) has shown that the dimensions vigor and dedication are the opposites of the two central dimensions of burnout, exhaustion and cynicism respectively (Maslach, Schaufeli, & Leiter, 2001). Also, vigor and dedication are considered the core characteristics of work engagement (Schaufeli & Bakker, 2001, 2004). Therefore, absorption is not taken into account in the current study. In addition to job resources (e.g., Hakanen, Bakker & Schaufeli, 2006; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), individual factors such as trait competitiveness (Karatepe & Olugbade, 2009), proactive behavior (Sonnentag, 2003) and self-efficacy (Llorens, Schaufeli, Bakker, & Salanova, 2006) have been found to be significantly associated with work engagement.

It seems difficult to distinguish the concepts of workaholism and work engagement because, at first glance, the work behavior of workaholics and work engaged employees seems to be similar. However, when considering the two concepts more closely, several differences become apparent. Workaholism is related to unfavorable outcomes, such as self-perceived ill-health (Schaufeli et al., 2006) and poor emotional wellbeing (Burke, 1999), whereas engagement is related to desirable outcomes such as personal initiative (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008) and job satisfaction (Schaufeli, Taris & Van Rhenen, 2008). Hence, we do know *that* workaholics and work engaged employees differ from one another (Schaufeli et al., 2006), but we do not know *why* they are different. One plausible explanation for the distinction between workaholism and work engagement may be a different underlying motivation to work excessively. To date, no theory or model exists that addresses this assumption.

#### *Mood-as-Input model*

In the present study, we introduce an explanatory paradigm that stems from the field of clinical psychology, called the Mood-as-Input (MAI) model (Martin, Ward, Arce, & Wyer, 1993). This model has shown to be relevant in explaining persistence in the area of clinical psychology, for instance depressive rumination (Hawksley & Davey, 2010). The MAI model assumes that people use personal cognitive rules to estimate how they are doing on a given task with no clear ending. That is to say, on the one hand, individuals may evaluate their progress towards a goal by considering how much they have done and on the other hand they may

estimate their progress towards a goal by evaluating their current enjoyment in performing the task. Such rules for deciding on what basis to stop or continue are labeled "stop rules".

The MAI model also postulates that individuals use their current mood as information for how to act in response to these stop rules. For instance, when evaluating whether one has done enough (i.e., *the enough stop rule*), a positive mood is interpreted as being satisfied about one's performance, meaning that it is all right to quit the task. However, a negative mood would convey that one is not yet satisfied, implying that one has to continue in order to feel content. However, when assessing one's task enjoyment (i.e., *the enjoyment stop rule*), a negative mood would notify that one no longer enjoys the task, leading one to quit the task. On the other hand, when considering one's task enjoyment, a positive mood would be interpreted as intensely enjoying the task, resulting in persistence.

To summarize, the information that the specific mood state conveys is dependent upon the stop rule used. Martin et al. (1993) successfully conducted several experiments to test this assumption. For example, after a positive or negative mood induction, participants were instructed to read about behaviors of a target person to form an impression of that person. Half of the participants were instructed to continue reading the information until they collected enough information to form an impression of that particular person. The other half of the participants were told to continue reading the information as long as they enjoyed the task. The results showed that when given an enough stop rule instruction, participants in a negative mood continued longer as compared with participants in a positive mood. Conversely, when appointed an enjoyment stop rule instruction, participants in a positive mood continued longer than participants in a negative mood.

Building on these findings, MacDonald and Davey (2005) applied the predictions of the MAI model to explain a core characteristic of obsessive compulsive disorder (OCD), which is compulsive checking. Congruent with the MAI hypothesis, MacDonald and Davey found that either a positive or a negative mood can lead participants to stop or continue checking, depending on the interpretation of their mood. Particularly, the combination of a negative mood and the enough stop rule resulted in prolonged persistence. This finding seems to provide a plausible explanation for the compulsive behaviors of obsessive compulsive checkers.

#### *Application of the MAI model to the work context*

There are several indications that these findings may also be relevant to the study of workaholism. Firstly, workaholism has been associated with obsessive compulsive

personality traits (Mudrack, 2004). Furthermore, it seems that workaholics continue working by meeting self-imposed deadlines (Machlowitz, 1980, Porter, 1996). They have an “endless pursuit of more and more accomplishment” (Porter, 2004, p. 435). More specifically, it is suggested that compulsive behaviors such as workaholism arise when individuals commit to self-imposed and rigid personal rules (Bénabou & Tirole, 2004). Considering that they are assumed to take pride in the amount of work they have done (Oates, 1971), workaholics seem to use an enough stop rule that drives them to work persistently. It has also been established that workaholics commonly experience negative affective states. Robinson (1996) found, for instance, that workaholism is related to anxiety. Likewise, Burke and Matthiesen (2004) revealed that workers with a compulsive drive show increased negative affect, whereas Porter (1996) argued that workaholics may work to avoid their negative feelings. Building on the MAI hypothesis, we expect that workaholics use their negative mood as input for an enough stop rule, meaning that a negative mood in combination with the enough rule is related to workaholism.

The MAI model appears to be also suitable to provide an explanation for work engagement. Work engaged workers are likely to employ a different internal norm for deciding when to stop working. Schaufeli et al. (2002) argue that work engaged employees work long hours because work is satisfying to them. Because engaged employees are intrinsically motivated to work (Schaufeli, Taris, & Van Rhenen, 2008), it is likely that these employees continue working as long as they enjoy their work. How long engaged workers find their work enjoyable enough to continue working may be dependent on their level of positive mood. In accordance with this assertion, Schaufeli and Van Rhenen (2006) found that positive affect is related to work engagement. Likewise, Burke and Matthiesen (2004) observed that work engaged employees (“work enthusiasts”) showed more positive affect than workaholics (“work addicts”). We therefore expect that work engaged employees use a positive mood as input to an enjoyment stop rule, suggesting that particularly a positive mood in combination with the enjoyment rule is related to work engagement.

### *Aims of the study*

The present study was conducted in order to examine to what extent the MAI model can be fruitfully applied to investigate the motivational underpinnings of workaholism and work engagement. Since we are not aware of a scale that assesses stop rules in the work context, the goal of Study 1 was to develop and test a scale for the measurement of work stop rules. In Study 2 the factorial validity of the scale was further examined. A second aim of Study 2 was to investigate if mood, stop

rules and the interaction between mood and stop rules predict workaholism and work engagement.

### 3.2. Study 1

The previous literature review showed that a distinction can be made between two different cognitive decision rules, the enough and enjoyment rule. However, it can be argued that reasons to quit working might be different from reasons to continue working. For instance, one might decide to continue working because one did not do enough yet, but ultimately one may stop working because one does not enjoy one's work anymore. We therefore also try to distinguish between reasons to stop and to continue working. Therefore hereafter, we will use the label "continuation rules" to refer to reasons to continue working, and the label "termination rules" to indicate reasons to stop working. In addition, we will use the label "persistence rules" to refer to both continuation rules *and* termination rules. Taken together, we expect to find an underlying structure consisting of four factors: (1) *enough continuation rules*, (2) *enjoyment continuation rules*, (3) *enough termination rules*, and (4) *enjoyment termination rules*.

#### *Methods*

##### *Item development*

In order to assess various examples of persistence rules, a panel of nine experts in the field of occupational health psychology was requested to list reasons to stop or to continue working. In total 89 items (46 reasons to stop and 43 reasons to continue working) were generated by the panel. By excluding overlapping items, the total amount was reduced to 54 items. After content analysis by the authors, 16 core items were categorized into four subscales: 1) enough continuation rules, 2) enjoyment continuation rules, 3) enough termination rules and 4) enjoyment termination rules. Items with an ambiguous formulation and items that did address *external* persistence rules (e.g., to pick up children from day-care) were excluded. Another independent panel of five experts was asked to review the items for content validity. Final modifications were based on the experts' comments. The enough items emphasize a sufficiency approach to work, meaning that the employee decides to stop or continue working depending upon how much he or she has done. The enjoyment items emphasize a pleasure approach to work, meaning that the employee decides to stop or continue working depending upon the pleasure that is derived from the job. A 5-point Likert scale was used, ranging from (1) "not at all applicable" to (5) "highly applicable".

*Participants and procedure*

The sample consisted of 216 employees (122 men and 94 women) with a mean age of 40.7 years ( $SD = 12.18$ ). Participants were recruited among relatives and acquaintances of research assistants. All participants were informed about the purpose and procedure of the study and participated voluntarily. Participants gave their consent to participate in the study by virtue of completion of the online questionnaire. The sample was highly educated with 68% of the participants holding a college or university degree. Approximately 20% of the sample worked in education, whereas smaller proportions worked in health care (17%), business (17%) and in public administration. The remaining part (30%) worked in various sectors, for instance construction and transportation. After background information had been obtained, participants completed the 16-item questionnaire. The response rate could not be calculated, since no record was kept of the total number of questionnaires sent.

*Confirmatory Factor Analysis of the Work Persistence Rules Checklist (WoPeC)*

In order to test the proposed factor structure among the 16 items of our questionnaire to assess persistence rules, dubbed Work Persistence rules Checklist (WoPeC), a Confirmatory Factor Analysis (CFA) was performed using AMOS 16 (Arbuckle, 2007). Three models were compared and it was hypothesized that the four factor model (M3; enough and enjoyment continuation and termination rules) provides a better fit to the data compared with a two factor model (M2; enough and enjoyment rules) or a one factor model (M1; one general persistence rule factor). The models were fit to the variance-covariance matrix with maximum likelihood estimations.

The goodness-of-fit of the model was assessed using seven different absolute and incremental statistical criteria: (1) the chi-square goodness-of fit statistic, (2) the Goodness of Fit Index (GFI), (3) the Adjusted Goodness of Fit Index (AGFI), (4) the Root Mean Square Error of Approximation (RMSEA), (5) the Normed Fit Index (NFI), (6) the Non-normed Fit Index (NNFI), and (7) the Comparative Fit Index (CFI). Fit of the models is compared with chi-square difference test. For the GFI, AGFI, NFI, NNFI and CFI, values higher than .90 indicate adequate fit and higher than .95 indicate good fit (Hu & Bentler, 1999; Kline, 2005). For the RMSEA, values lower than .08 are indicative of adequate fit (MacCallum, Browne, & Sugarawa, 1996).

Fit statistics for the three models are provided in Table 3.1. The general model (M1), assuming one common factor showed a poor fit to the data. The model assuming two underlying (enough vs. enjoyment) factors (M2) showed a significant better, but still unsatisfactory fit ( $\Delta\chi^2 = 418.25 (\Delta df 1), p < .001$ ). The model assuming

Table 3.1. Confirmatory Factor Analysis models of the WoPeC (Study 1,  $n = 216$ )

Model	$\chi^2$	df	$p$	GFI	AGFI	RMSEA	NFI	NNFI	CFI
M1	1282.74	104	.00	.52	.38	.23	.28	.18	.29
M2	864.49	103	.00	.62	.50	.19	.52	.47	.54
M3	237.14	98	.00	.88	.84	.08	.87	.90	.92
M3°	190.97	96	.00	.90	.86	.07	.89	.93	.94

Note. M = type of model based on number and configuration of factors; M1 = one-factor model (general dimension), M2 = two-dimensional model (enough and enjoyment), M3 = four-dimensional model (enough and enjoyment termination and continuation rules), M3° = four-dimensional model including a co-variance between items #11 and #12, and items #13 and #14.

four underlying factors (M3) fitted the data reasonably well. The fit of this model was significantly better than the one-factor model ( $\Delta\chi^2 = 1045.60$  ( $\Delta df$  6),  $p < .001$ ) and than the two-factor model ( $\Delta\chi^2 = 727.35$  ( $\Delta df$  5),  $p < .001$ ). Modification Indices (MI) showed that adding a covariance between the error terms of two indicators in both the enough termination rule factor and the enjoyment termination rule factor would improve the model fit. Given the conceptual overlap between the items #11 and #12, and the items #13 and #14, we decided to add a covariance between the errors of these items and to further decide upon eliminating items in Study 2. By adding the error co-variances, the fit indices of the four-factor model (M3°) improved significantly ( $\Delta\chi^2 = 47.15$  ( $\Delta df$  2),  $p < .001$ ).

Factor loadings ranged from .41 to .92, with a mean of .74 and are shown in Table 3.2. The four factors modeled were: 1) enough continuation rule (three items,  $M = 2.40$ ,  $SD = 0.89$ ,  $\alpha = .80$ ), 2) enjoyment continuation rule (five items,  $M = 3.60$ ,  $SD = 0.85$ ,  $\alpha = .89$ ), 3) enough termination rule (four items,  $M = 3.27$ ,  $SD = 0.84$ ,  $\alpha = .76$ ), and 4) enjoyment termination rule (three items:  $M = 2.49$ ,  $SD = 0.90$ ,  $\alpha = .86$ ). Correlations between the factors ranged from .02 to .32. All correlations were significant, with the exception of the correlations of the enjoyment continuation rule with the enough continuation rule and the enjoyment termination rule, respectively.

### Conclusion

As anticipated, the WoPeC, a questionnaire to assess persistence rules, consisted of four factors. The first factor indicates that the employee continues to work until enough work has been done; the second factor indicates that the employee continues to work because it is still pleasant; the third factor indicates that the employee stops working because enough work has been done; and finally the fourth factor indicates that the employee stops working because work is no longer enjoyable.

### 3.3. Study 2

A first aim of Study 2 was to further validate the factorial structure of the WoPeC. It was examined whether the four-factor structure of persistence rules could be replicated in a different sample. A secondary aim was to examine the relationship between the different persistence rules and mood on the one hand and workaholism and work engagement on the other hand. As explained in the general introduction it was expected that workaholism is related to negative affect (Hypothesis 1), whereas work engagement is related to positive affect (Hypothesis 2). Next, we expected that workaholism is associated with using the enough rules to decide when to stop (Hypothesis 3) or when to continue (Hypothesis 4) working. In addition, it is expected that work engagement is related to using enjoyment rules to determine when to stop (Hypothesis 5) or when to continue (Hypothesis 6) working. Furthermore, in line with the MAI model we anticipate that negative mood in combination with using an enough rule is particularly associated with workaholism (Hypothesis 7), whereas a positive mood in combination with using an enjoyment rule is associated with work engagement (Hypothesis 8).

#### *Methods*

##### *Participants and procedure*

Two hundred seventy employees of a Dutch consultancy firm participated in the study (127 men and 143 women) with a mean age of 36.9 years ( $SD = 10.3$ ). All participants were informed of their anonymity if they voluntarily participated and that completion of the online questionnaire implied consent. The response rate was 64%. The sample was highly educated with the majority (85%) holding a university or college degree, compared with 15% with intermediate (or lower) education. Approximately eight out of ten (81%) participants were cohabiting or married. Almost the same percentage (79%) of the sample consisted of dual career couples. Approximately half of the participants (45%) reported having children. On average, employees worked officially 35.7 hours per week ( $SD = 5.9$ ). The actual number of hours they worked was on average 43.2 ( $SD = 10.1$ ) per week. On average employees had worked for the company for nearly 6 years ( $SD = 5.97$ ), and had been in their current position for four years ( $SD = 4.84$ ). A minority of the participants (13%) reported having a management position.

#### *Measures*

*Workaholism* was measured with two scales of the Dutch Work Addiction Scale (Schaufeli, Shimazu, & Taris, 2009). The first scale is Working Excessively (five items,  $\alpha = .64$ , an example item is "I seem to be in a hurry and racing against the clock"). The second scale is Working Compulsively (five items,  $\alpha = .69$ , an example



Table 3.2. Factor loadings of Confirmatory Factor Analyses (Studies 1 and 2) of the WoPeC in two samples

	Study 1				Study 1			
	1.	2.	3.	4.	1.	2.	3.	4.
<i>I continued working because I...</i>								
1. ... wanted to be sure that I had done enough	.57				.37			
2. ... had not been productive enough	.81				.87			
3. ... felt that I did not do enough	.92				.91			
4. ... found my work interesting		.83				.82		
5. ... gained satisfaction from my work		.86				.92		
6. ... still felt like doing my work		.87				.85		
7. ... still enjoyed doing my work		.84				.83		
8. ... was completely immersed in my work		.56				.41		
<i>I stopped working because I...</i>								
9. ... reached my goals for that day			.81				.53	
10. ... did enough work			.79				.85	
11. ... did as much as possible			.56				.59	
12. ... had worked for a long enough time			.41				.56	
13. ... just did not feel like working anymore				.70				-
14. ... felt reluctance to continue				.86				.60
15. ... did not obtain gratification anymore from work				.86				.93
16. ... no longer enjoyed my work				.65				.94

Note. 1 = enough continuation rules, 2 = enjoyment continuation rules, 3 = enough termination rules and 4 = enjoyment termination rule.

item is “I feel guilty when I take time off work”). Participants responded to each item on a 4-point scale (1 = “never”, 4 = “always”).

*Work engagement* was measured with the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002). Two subscales of the UWES were used to measure the core dimensions of work engagement; Vigor (three items,  $\alpha = .80$ , an example item is “At my work, I feel bursting with energy”) and Dedication (three items,  $\alpha = .82$ , an example item is “My job inspires me”). The items were answered using a 7-point response format (0 = “never”, 6 = “every day”).

The 30-item Dutch version (Schaufeli & Van Rhenen, 2006) of the Job Related Affective Well-being Scale (JAWS) (Van Katwyk, Fox, Spector, & Kelloway, 2000) was used to assess *positive* and *negative emotions*. The JAWS contains a 15-item positive affect subscale ( $\alpha = .91$ , example items are “energetic” and “enthusiastic”) and a 15-item negative affect subscale ( $\alpha = .87$ , example items are “anxious” and “bored”). Items were scored on a 5-point Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely). Participants were instructed to indicate how often they had felt the emotion over the past working day.

*Persistence rules* were measured with the 16-item Work Persistence rules Checklist (WoPeC) from Study 1. The first scale measured the enough continuation scale (three items,  $\alpha = .74$ ). The second scale is enjoyment continuation scale (five items,  $\alpha = .87$ ). The third scale is enough termination scale (four items,  $\alpha = .72$ ). The final scale is the enjoyment termination scale (four items,  $\alpha = .85$ ). The same 5-point Likert scale was used as in Study 1.

## Results

### *Confirmatory Factor Analysis of the WoPeC*

In order to test the factorial validity of the WoPeC again, a CFA was conducted. The same analysis procedure was applied as in Study 1. Fit indices for each of the models tested are presented in Table 3.3. Again, the four-factor model showed a significantly better fit than the one-factor model ( $\Delta\chi^2 = 1,287.80$  ( $\Delta df$  6),  $p < .001$ ) and than the two-factor model ( $\Delta\chi^2 = 758.07$  ( $\Delta df$  5),  $p < .001$ ). Modification Indices (MI) again revealed that the model fit could be improved if two error terms of indicators in the enjoyment termination rule factor (item #13 and #14) were allowed to covary. Given the substantial overlap with respect to their content, the item with the lowest factor loading was eliminated from the model (M3°). The parsimonious four-factor model showed a better fit to the data than the comprehensive four-factor model  $\Delta\chi^2 = 111.05$  ( $\Delta df$  14),  $p < .001$ ). As Table 3.2 shows, loadings on the four factors ranged (from .37 to .94, with a mean of .73. In conclusion, CFA confirmed the validity of the four-factor model for enough and enjoyment persistence rules.

*Table 3.3. Confirmatory Factor Analysis models of the WoPeC (Study 2,  $n = 270$ )*

<i>Model</i>	$\chi^2$	<i>df</i>	<i>p</i>	GFI	AGFI	RMSEA	NFI	NNFI	CFI
M1	1,551.09	104	.00	.55	.42	.23	.27	.17	.28
M2	1,021.36	103	.00	.68	.58	.18	.52	.47	.54
M3	263.29	98	.00	.90	.86	.08	.88	.90	.92
M3°	152.24	84	.00	.93	.91	.06	.92	.95	.96

*Note.* M = type of model based on number and configuration of factors; M1 = one-factor model (general dimension), M2 = two-dimensional model (enough and enjoyment), M3 = four-dimensional model (enough and enjoyment termination and continuation rules), M3° = four-dimensional model excluding item #13.

Means, standard deviations, and correlation coefficients of all the study variables are displayed in Table 3.4. All significant correlations were in the expected direction, except for the negative correlation between the enjoyment stop rule and work engagement.

#### *Hypotheses testing*

The hypotheses were tested simultaneously using structural equation modeling with AMOS 16 (Arbuckle, 2007). The latent construct of workaholism was composed of two indicator variables (working compulsively and working excessively) whereas the latent variable work engagement was assessed by two indicators (vigor and dedication). Four interaction terms were created by multiplying each enough persistence rule with negative affect, and each enjoyment persistence rule with positive affect. In order to reduce the collinearity between the main effect variable and its interaction, all variables were centered on their grand means before creating the product terms. The results are presented in Table 3.5 and Figure 3.1. Model (M1) provided a reasonable fit to the data. Overall, the model explained 41% of the variance in workaholism and 80% in work engagement. negative affect was moderately related to workaholism ( $\beta = .45, p < .001$ ), whereas positive affect was rather strongly related to work engagement ( $\beta = .66, p < .001$ ). Therefore, Hypotheses 1 and 2, which predicted that workaholism was related to negative affect, whereas work engagement was related to positive affect, respectively, were both supported. No significant relationships were found between the enough termination rule and workaholism nor between the enjoyment termination rule and work engagement. In other words, no support was found for Hypotheses 3 and 5. Furthermore, as expected the enough continuation rule was related to workaholism ( $\beta = .33, p < .001$ ), whereas the enjoyment continuation rule was associated with work engagement ( $\beta = .32, p < .001$ ). Hence, Hypotheses 4 and 6, which stated that workaholism is associated with using an enough continuation rule and work engagement is related to using an enjoyment continuation rule to

Table 3.4. Means (*M*), standard deviations (*SD*), minimum (Min), maximum (Max) and correlation coefficients of the study variables (Study 2)

	<i>M</i>	<i>SD</i>	Min	Max	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Working Excessively	2.58	0.52	1.20	3.80	–									
2. Working Compulsively	2.11	0.55	1.00	3.80	.40**	–								
3. Vigor	3.07	0.97	0.33	5.33	-.04	-.15*	–							
4. Dedication	3.70	1.06	0.67	5.67	.12*	.18**	.63**	–						
5. Enough continuation rule	3.56	0.68	1.00	5.00	.09	.38**	-.23**	-.11	–					
6. Enjoyment continuation rule	2.84	0.89	1.00	5.00	-.01	-.19**	.54**	.55**	-.03	–				
7. Enough termination rule <sup>a</sup>	2.38	0.91	1.00	5.00	.15*	.06	.04	.10	.08	-.01	–			
8. Enjoyment termination rule	3.49	0.68	1.00	5.00	.17**	.14*	-.20**	-.19**	.22**	-.01	.06	–		
9. Positive affect	3.69	0.53	1.87	3.60	-.11	-.27**	.69**	.66**	-.12	.56**	.11	-.23**	–	
10. Negative affect	1.80	0.49	1.00	5.00	.25**	.42**	-.52**	-.49**	.25**	-.38**	.06	.35**	-.55**	–

Note. \*  $p < .05$ , \*\*  $p < .01$ ; <sup>a</sup> The mean score is calculated based upon the final three-item scale.

Table 3.5. Fit indices of the structural path model (Study 2,  $n = 270$ )

<i>Model</i>	$\chi^2$	<i>df</i>	<i>p</i>	GFI	AGFI	RMSEA	NFI	NNFI	CFI
M1	91.13	31	.000	.96	.86	.09	.91	.80	.93
M1 <sup>o</sup>	63.93	13	.001	.95	.86	.12	.92	.86	.94
M2	43.00	11	.001	.97	.89	.10	.95	.90	.96

Note. Model = type of model based on number and configuration of factors; M1 = hypothesized model, M1<sup>o</sup> = hypothesized model with trimmed paths, M2 = hypothesized model with additional paths.

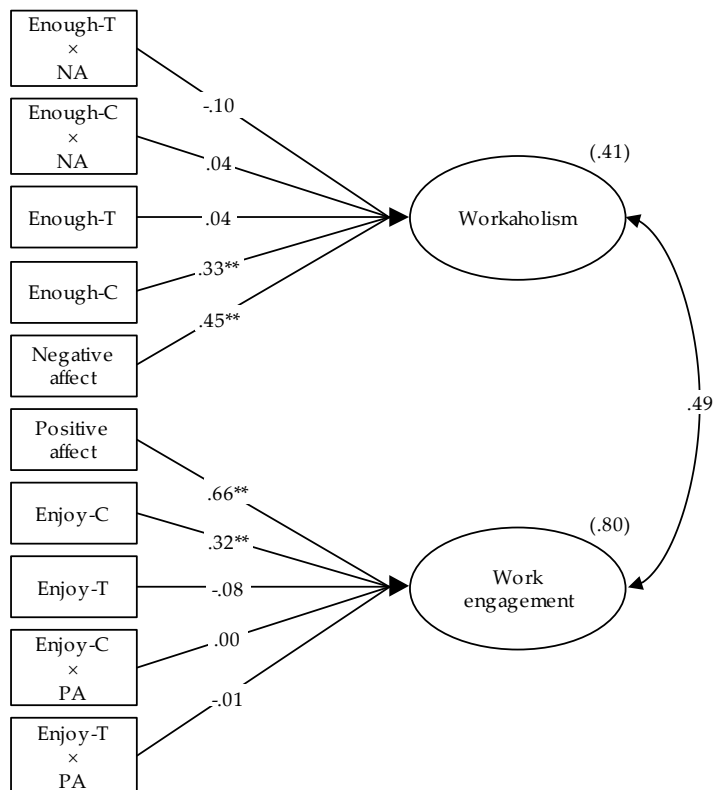


Figure 3.1. Standardized path coefficients of negative affect (NA), the enough continuation rule (Enough-C), the enough termination rule (Enough-T) and their interaction terms on workaholism, and of positive affect (PA), the enjoyment continuation rule (Enjoy-C), the enjoyment termination rule (Enjoy-T) and their interaction terms on work engagement. \*\*  $p < .001$ .

determine when to continue working, respectively, were both supported. Finally, none of the four interaction terms were significant. Therefore, Hypothesis 7 and 8 were not confirmed.

#### *Modifications to the structural model*

Modifications to the research model were examined, firstly, by trimming paths that were non-significant to have a more parsimonious model and, secondly, by exploring additional paths. We dropped the non-significant paths between the enough termination rule and workaholism, and between the enjoyment termination rule and work engagement. Furthermore, the four non-significant interaction terms were removed from the model (M1°). The elimination did not significantly improve the overall fit of the model ( $\Delta\chi^2 = 27.20$  ( $\Delta df$  18), ns). Next, Modification Indices were inspected and they suggested that two additional paths would improve the fit of the model. More specifically, the enough continuation rule and negative affect should load negatively on the work engagement factor. Remarkably, these negative relationships were not found between enjoyment rule and positive affect on the one hand and workaholism on the other hand. However, given the assumption mentioned earlier that work engaged employees, unlike workaholics, do not experience the internal pressure to work persistently, it is not surprising that the enough continuation rule is negatively related to work engagement. Furthermore, because work engagement is accompanied by positive emotions, it is not unexpected that negative emotions are negatively related to work engagement. Considering that these additional paths between the enough continuation rule and negative affect on the one hand and work engagement on the other hand were theoretically plausible we added them to the model (enough continuation rule  $\rightarrow$  work engagement:  $\beta = -.10$ ,  $p < .05$ , and negative affect  $\rightarrow$  work engagement:  $\beta = -.17$ ,  $p < .001$ ) (see Figure 3.2). This resulted in a significant difference in fit between the two models in favor of the final model (M2) ( $\Delta\chi^2 = 23.93$  ( $\Delta df$  2),  $p < .001$ ). The RMSEA of .10 was above the recommended value of .08, but still indicated a “mediocre fit” (MacCallum et al., 1996).

#### *Conclusion*

Confirming the results of Study 1, a Confirmatory Factor Analysis of the WoPeC indicated that the hypothesized four-factor model shows the best fit compared with various alternative models. Evidently, there is not only a difference between enough and enjoyment rules, but also between continuation and termination rules. Furthermore, the results of Study 2 support the supposed direct effects of negative mood and the enough continuation rules on workaholism as well as the direct effects of positive mood and the enjoyment continuation rule on work engagement.

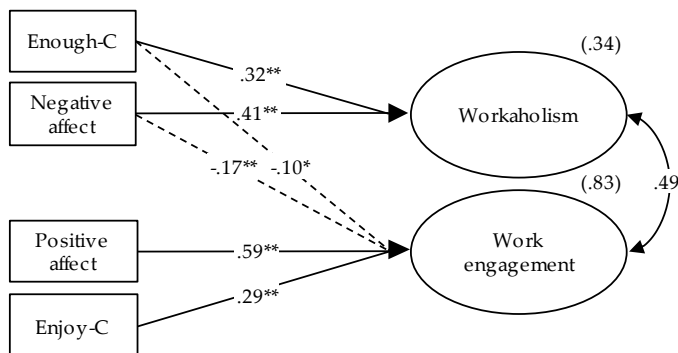


Figure 3.2. Standardized path coefficients of negative affect, the enough continuation rule (Enough-C) on workaholism, and of positive affect, the enjoyment continuation rule (Enjoy-C) on work engagement. Inclusion of two additional paths from the enough continuation rule (Enough-C) and negative affect to work engagement; \*  $p < .05$ , \*\*  $p < .001$ .

In addition, it was found that negative mood and the enough continuation rule related negatively to work engagement. No evidence was found for the hypotheses that to stop working when having done enough is related to workaholism and that to stop working when no longer enjoying work is related to work engagement. Finally, no support was found for the idea that workaholics use their negative mood as input to the enough rule, nor for the assumption that work engaged employees use their positive mood as information for the enjoyment rule. In conclusion, as an alternative to a multiplicative model, an additive model of mood and persistence rules seems more appropriate to explain the difference between workaholics and work engaged employees.

### 3.4. General discussion

This study was firstly aimed at developing and validating a scale to assess personal rules for deciding when to stop or continue working, referred to as persistence rules. The results reveal that, in accordance with our expectations, not only a difference exists between enough and enjoyment rules, but also between rules to stop and rules to continue working. In other words, our findings indicate that to stop working, for instance because one has done enough, is not the opposite of to continue working because one has not yet done enough. For example, an employee who *continues* because he or she enjoys his or her work does not *stop* right away when not enjoying his or her work any longer. Overall, the findings of this study provide support for the WoPeC as a reliable and valid measurement for the different considerations of employees to stop or continue working. In general, the instrument might contribute to more insight into the specific reasons of employees

to quit work or to continue with it and enables to distinguish between individuals' considerations regarding persistence at work. For instance, some employees may have unremittingly used an enough persistence rule for an extensive period without evaluating or recognizing it. Feedback based on the results of the WoPeC may contribute to an awareness and re-evaluation of the use of persistence rules by employees.

A second purpose of the current study was to explore the difference in underlying motivation of workaholics versus work engaged employees. It was hypothesized that workaholics evaluate their output (enough persistence rules) whereas work engaged employees assess their enjoyment (enjoyment persistence rules) in order to decide when to stop or continue working. Additionally, it was expected that the workaholics use their negative mood, and work engaged employees use their positive mood as information for evaluating their output versus enjoyment respectively. The results of the structural analyses reveal that negative affect is related to workaholism whereas positive affect is related to work engagement. These findings are in line with earlier reports (Burke & Matthiesen, 2004; Schaufeli & Van Rhenen, 2006) It is also demonstrated that continuing because one has not done enough yet is related to workaholism, whereas continuing because one is still enjoying work is related to work engagement. In other words, although on the surface workaholics and work engaged employees do not seem to differ with respect to their work behavior, they do have inherent different reasons to work persistently. Workaholics continue working because they feel that they have not completed enough work; they are driven by the desire to live up to their own and others' expectations, seemingly without considering their enjoyment of work. In contrast, work engaged employees continue to work because they take pleasure from their work; they seem to be driven by the joy of working. Additional support for the assumption that the use of the enough continuation rule and experiencing negative affect are typical for workaholics was provided by the finding that the enough continuation rule and negative affect were *negatively* related to work engagement. On this basis, one would also expect a negative relationship between the enjoyment continuation rule and positive affect on the one hand and workaholism on the other hand. However, no such relationship was observed.

Most importantly, there was no evidence of a mood-as-input process whereby workaholics use their negative mood as an evaluation of how much they have done, and work engaged employees analyze their positive mood to assess to what extent they still enjoy their work. In other words, both mood and continuation rules seem vital in explaining the difference between workaholics and work engaged employees, but do *not* interact with each other. In a recent experimental study based upon the MAI model wherein patients with work-related pain in the



upper limbs performed a physical task, also no interaction between mood and persistence rules ("stop rules") was found (Karsdorp, Nijst, Goossens, & Vlaeyen, 2009). Instead, the results of this study showed that experimentally induced mood and stop rules were independently related to the number of movements with a painful limb. These findings indicate that the applicability and robustness of the MAI model is still to be tested in a variety of situations.

### *Limitations*

The current study has several limitations that require consideration. Firstly, the majority of the participants were highly educated. This relative homogeneity may limit the ability to generalize the results to a lower educated population. However, one prerequisite for the use of persistence rules is that employees have autonomy to some extent, which is typical for highly educated employees. This may indirectly signify that the use of persistence rules is generally more relevant when people are highly educated. Nonetheless, in order to understand the use of persistence rules by employees, future research should not only focus on the use of persistence rules among the lower educated employees but also among other professions. Furthermore, it is a point of discussion whether mood and persistence rules are as distinct as the MAI model anticipates. Emotions may be reflected in the use of persistence rules; for instance, the enjoyment rule may be only relevant when positive mood is present, whereas the enough rule may be specifically pertinent when an individual is in a negative mood. In addition, one might argue that there are plenty of other "external" factors that influence when and why employees may stop or continue working (e.g., to stop working to be at home when children return from school or to continue working to meet deadlines). From our point of view, some of these external factors may be derivatives of persistence rules. For instance, an employee might consider continue working until the traffic jam is over, but in fact uses the traffic jam as an excuse to work until he has done enough. However, there are other urgent situations that force employees to stop or continue working at a given time. Yet, in such situations it is questionable whether the employee really has work-time control. A final limitation of the present study is that its cross-sectional nature precludes causal inferences. In order to gain a better insight into the process underlying workaholism and work engagement, we need to move to longitudinal designs, for instance to a diary approach.

### *Future research*

Given that persistence rules are a rather new concept, it would be interesting to compare persistence rules to other existing concepts. For instance, in order to explain differences in motivation, Deci and Ryan (2008) distinguish between

*autonomous* and *controlled* motivation. Autonomous motivation involves taking on an activity because it is interesting and enjoyable (integrated regulation) or because the activity is personally valuable and instrumental to outcomes that are detachable from the activity itself (identified regulation). Controlled motivation is both characterized by partially integrated behavior that is initiated to avoid guilt and shame or to gain approval of others (introjected regulation) and behavior that is completely the result of external contingencies, rewards and punishments (external regulation). It would be interesting to examine to what extent autonomous motivation bears resemblance to using an enjoyment continuation rule and to what extent controlled motivation possibly is comparable to using an enough continuation rule. Furthermore, a core component of perfectionism, a characteristic that has been linked to workaholism (Spence & Robbins, 1992) is having high personal standards with respect to the quantity of work (Frost, Marten, Lahart, & Rosenblate, 1990). Setting high standards may be comparable to using the enough continuation rule. In order to assure that a different construct is measured, it should be tested to what extent core concepts of the Self-Determination theory and perfectionism differ from persistence rules.

Further research may also concentrate on efforts to enhance the reliability of the workaholism subscales. Although the scales are not consistently found to have such low internal consistency in previous studies (Schaufeli, Taris, & Van Rhenen, 2008; Shimazu, Schaufeli, & Taris, 2010), the low reliabilities in the current study seem to point out the need to further evaluate this measure. In addition, including a larger sample or increasing the heterogeneity of the sample may provide higher estimates of reliability. Furthermore, future research may focus on examining alternative models of mood and persistence rules in order to gain insight into the mechanisms underlying workaholism and work engagement. It is plausible, for instance, that persistence rules act as a mediator in the relationship between mood and the motivation to work persistently. For instance, negative emotions may evoke a default enough rule which will eventually result in workaholism. Finally, enough and enjoyment termination rules were neither related to workaholism nor to work engagement. This may indicate that the decision of workaholics and work engaged employees to stop working is influenced by other factors than the two internal rules that were examined in this study. A better understanding of the reasons of workaholics and work engaged employees to stop working may provide insight in the mechanisms that causes and prevents overwork by these employees. Therefore, in future investigations it would be interesting to identify what termination rules workaholics and work engaged use.

### *Implications*

The current study contributes to our understanding of the difference between workaholism and work engagement by looking at differences in mood and persistence rules. To our knowledge, this is the first study that focuses on cognitive rules employees use to decide when to stop and to continue working as well as on the role of mood in this process. The strong evidence for the direct relationships between mood and continuation rules on the one hand and the motivation to work persistently on the other hand presents a potential pathway for intervention for workaholics. Modification of the enough persistence rule may be an important target for interventions (Chapter 7). However, given the sometimes implicit nature of persistence rules, awareness is equally important as changing the maladaptive rule (Himle, 1989). Also the negative emotions of workaholics should be targeted for change. In addressing persistence rules and mood, Rational Emotive Behavior Therapy (Ellis, 1995) which is focused on identifying and replacing irrational beliefs may be a helpful technique. Finally, the findings of the present study pave the way for further discussion and research about mood and persistence rules to explain the difference in motivation to work persistently of workaholics and work engaged employees. To stop or not to stop? Or even more pertinent, to continue or not to continue? These interesting questions may guide future research on the motivation to work persistently.



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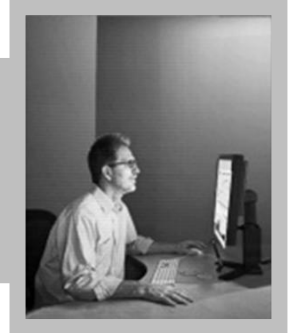
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# CHAPTER 4



## **Irrational beliefs at work** *and their implications for workaholism*

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#### 4.1. Introduction

In our western society, hard work is generally accepted and valued (Aziz & Zickar, 2006). Several scholars have therefore stressed the need to pay attention to the risks of workaholism (Porter, 2004; Graves, Ruderman, Ohlott, & Weber, 2010). The concept of workaholism was introduced by Oates (1968) four decades ago to label his personal obsessive and excessive work behavior. From that time, several studies have been carried out showing that workaholism may potentially result in negative emotional and physical outcomes, such as stress and burnout (Andreassen, Ursin, & Eriksen, 2007; Taris, Schaufeli, & Verhoeven, 2005). Nonetheless, little information is available on effective intervention techniques for reducing workaholism.

Some scholars advocate Rational Emotive Behavior Therapy (REBT) as the therapy of choice for workaholics (Burwell & Chen, 2002; Chen, 2006). The underlying principle of REBT is that irrational cognitions play a critical role in causing emotional distress and self-defeating behaviors (Ellis, 1977). Irrational beliefs are rigid, illogical and unreasonable cognitions. Chen (2006) argued that such irrational beliefs are the root cause of the workaholic's preoccupation with work. In a similar vein, Cherrington (1980) considers workaholism as "an irrational commitment to excessive work." (p. 257). Yet, few studies have examined the link between "irrational" cognitions and workaholism (see Burke, 1999, 2001, for an exception). For treatment purposes, it is relevant to know to what extent irrational beliefs are associated with workaholism. In addition, a better understanding of the relevance of different types of irrational cognitions for workaholism will help to focus the treatment. However, as no measure of work-related irrational beliefs exists yet, a new scale should be developed first. Therefore, the first aim of the current study is to develop and validate a measure of work-related irrational beliefs. The second aim is to test the relationships between irrational beliefs and workaholism.

#### *Workaholism*

Since Oates (1971) defined workaholism as "the compulsion or uncontrollable need to work incessantly" (p. 11), various other conceptualizations of the phenomenon have emerged. An influential definition was proposed by Spence and Robbins (1992) stating that a "real" work addict is "highly work involved, feels compelled or driven to work because of inner pressures, and is low in enjoyment of work" (p.162). Scott, Moore, and Miceli (1997) reviewed the characteristics attributed to workaholics to arrive at a better construct definition. They distinguished three common denominators: (1) workaholics invest much time in work activities when they have the opportunity to do so; (2) workaholics constantly think about work when they are not working; (3) workaholics work longer hours than is expected of

them to meet organizational or economic standards. More recently, Ng, Sorensen, and Feldman (2007) defined workaholism as reflecting affect, cognition, and behavior. They typified workaholics as those who are obsessed with working, who commit long hours to work, and who enjoy working. It should be noted that, according to Ng et al. (2007), workaholics enjoy the *act* of working rather than the actual work they do. In a similar vein, Porter (2001, p. 151) wrote that "joy in work is not a part of workaholism viewed as an addiction". In line with Schaufeli, Taris, and Bakker (2008), we view work enjoyment as being an independent psychological phenomenon, called work engagement. Schaufeli, Taris, and Bakker distinguish two components in workaholism; that is working excessively and working compulsively. According to their definition, workaholism is an "obsessive, irresistible inner drive to work excessively hard" (p. 219). As it coincides with the original definition of Oates (1971), we have adopted this definition in the present study.

Workaholism is found to have an impact on several important life domains. With regard to the work domain, workaholics often appear to have poor relationships with their colleagues (Kanai & Wakabayashi, 2001; Spence & Robbins, 1992), probably, because they frequently feel the need to control them and have difficulties with delegating work (Porter, 1996). Given that the excessive amount of time they spent working leaves little time for other activities, also the social life outside work suffers from the compulsive work habits of workaholics (Bonebright, Clay, & Ankenmann, 2000). Moreover, work addicts feel less closely related to their family (Robinson & Post, 1997) and experience more marital problems (Robinson, Flowers & Carroll, 2001) than non-workaholics. Finally, research also shows negative effects of work addiction on health. As workaholics work long hours, they often lack the opportunities to recover from work, which may cause exhaustion (Kubota et al., 2011; Schaufeli, Taris, & Bakker, 2008; Taris et al., 2005). Furthermore, workaholics report more mental distress and subjective health complaints than others (Andreassen, Hetland, Molde, & Pallesen, 2011; Andreassen et al., 2007; Schaufeli, Taris, & Van Rhenen, 2008).

#### *Measurement of work-related irrational beliefs*

Irrational beliefs are found to be important for human functioning and wellbeing (e.g., Nieuwenhuijsen Verbeek, de Boer, Blonk, & Van Dijk, 2010; Solomon, Arnow, Gotlib, & Wind, 2003). Chen (2006) argued that also workaholism may result from a disturbance in the cognitive interpretation. Workaholics could hold irrational beliefs, such as "I am the only person in the department who can do this work" or "If I do not finish my work on time, a disaster will happen". Although a growing number of scales to measure irrational beliefs exists, the psychometric properties of

these measures vary considerably. Terjesen, Salhany, and Scituito (2009) reviewed 14 measures of irrational beliefs regarding reliability, validity and norms. While the majority of these scales showed good reliabilities, the validity and their utility for assessment need improvement. For instance, some of the existing measures of irrational beliefs were found not to assess only beliefs, but also emotional or behavioral responses. Such content overlap may inflate correlations between irrational beliefs and outcomes (Smith, 1982). Furthermore, Terjesen et al. (2009) showed that, on average, the measures were quite lengthy with a mean number of 43.6 items. If a measure is to be administered repeatedly, for instance to assess change due to an intervention, it is important that this measure is as short as possible. Finally, although there are measures developed for specific populations and situations (e.g., children, gamblers), to our knowledge, no irrational beliefs measure is specifically designed to assess irrational beliefs in the work place. Yet, it is likely that in the case of workaholism, the irrational beliefs are related to its context, which is work. As we will argue below, the literature seems to suggest that at least four work-related irrational beliefs are of importance for workaholism, namely irrational beliefs regarding: (1) performance demands, (2) co-workers' approval, (3) failure, and (4) control. Therefore, we aim to validate a work-related irrational beliefs measure that only includes cognitive (and no emotional) content.

### *Study hypotheses*

In this study, we examine the assumption that the behavior of workaholics is to a significant extent rooted in four harsh beliefs. First, workaholics seem to have the irrational idea that they can only like themselves if they perform well and better than others (Chapter 5). Put differently, they seem to base their sense of self-worth on their performances. Also Burke (1999) showed that workaholics demand very high performance of themselves. Hence, we expect that high scores on irrational beliefs about performance demands (e.g., "I must do my work perfectly") are positively associated with workaholism (Hypothesis 1).

Furthermore, it has been suggested that workaholics are individuals that have a compulsive drive to gain approval (Burke, 1999; Killinger, 1991, Spence & Robbins, 1992). Workaholics seem to be afraid of losing approval of significant others; they only feel accepted if they do a perfect job (Taris, Van Beek, & Schaufeli, 2010). Therefore, high scores on irrational beliefs about approval of others (e.g., "I must be approved by my colleagues") are positively associated with workaholism (Hypothesis 2).

According to Berglas (2004), catastrophizing is also common among workaholics. That is, workaholics tend to overestimate the consequences of failure. This is reflected by the fact that workaholism shows a strong relationship to

neuroticism (Andreassen, Hetland, & Pallesen, 2010; Clark, Lelchook, & Taylor, 2010), of which worry is a core element. For that reason, we anticipate that overrating the consequences of failure (e.g., "It is awful if I don't receive promotion") is related to high levels of workaholism. We hypothesize that high scores on irrational beliefs about failure are positively related to workaholism (Hypothesis 3).

Finally, several authors have proposed that workaholism is associated with obsessive compulsiveness (Clark, Livesley, Schroeder, & Irish, 1996; McMillan, O'Driscoll, Marsh, & Brady, 2001; Mudrack, 2004), which reflects a preoccupation with matters of control; workaholism seems characterized by a lack of confidence and control over circumstances. We therefore predict that irrational beliefs of control (e.g., "I can only cope with work situations when they are predictable") are positively associated with workaholism (Hypothesis 4).

In sum, using the new measure of irrational beliefs, we aim to examine the associations between four irrational beliefs and workaholism. However, since there are strong indications that negative emotions play an important role in the development and maintenance of workaholism (Burke & Matthiessen, 2004; Chapter 3), the role of negative affect cannot be ignored when studying the phenomenon of workaholism. More specifically, it has been argued that workaholics work so hard in order to avoid the negative emotions that are associated with not working (Porter, 1996; Ng et al., 2007) or to regulate their negative emotions by working (Chapter 6). To rule out the possibility that the relationship between irrational cognitions and workaholism is attributed to negative affect, we will partial out the effect of negative affect. In this way, we are able to examine the unique contribution of irrational cognitions to workaholism.

## 4.2. Methods

### *Participants and procedure*

Participants were recruited through a web link to the study survey that was included in an online magazine about work life balance, issued by a Dutch training and consultancy firm. The magazine was sent to approximately 14,600 individuals, of which 1,236 responded. Ultimately, 913 provided completed questionnaires, indicating a response rate of 6.3%. Participants gave their consent to participate in the study by means of completion of the online questionnaire. 478 respondents were female, and the sample had a mean age of 43.8 ( $SD = 9.1$ ; range = 18 to 68). Nearly half of the sample was in a leadership position. The majority of the sample was highly educated with 77.3% at least holding a bachelor's degree. The participants worked approximately 6.2 years ( $SD = 5.8$ ) in their current jobs and 12.4 years ( $SD = 9.4$ ) within their current companies. Participants reported an average of 35.1

contract hours ( $SD = 5.9$ ) per week, but indicated to actually work 40.4 hours ( $SD = 9.6$ ) per week. Participants were mainly employed in business services (19.4%), public administration (16.9%), industry (14.7%), health care (13.1%), and financial services (8.2%). The remaining part (27.7%) worked in various sectors, such as construction and transportation (see Table 4.1).

### *Measures*

*Workaholism* was assessed using the short Dutch Work Addiction Scale (Schaufeli, Shimazu, & Taris, 2009; Schaufeli, Van Wijhe, Peeters, & Taris, 2011) which comprises two dimensions: (1) Working Compulsively (WC), which includes five items (e.g., "I feel that there's something inside me that drives me to work hard") and (2) Working Excessively (WE), which comprises five items as well (e.g., "I overly commit myself by biting off more than I can chew"). The WC scale is based on the Drive scale of the Workaholism Battery (WorkBat; Spence & Robbins, 1992), whereas the WE scale is derived from the Compulsive Tendencies scale of the Work Addiction Risk Test (WART; Robinson, 1999). Both scales are rated on a 4-point scale (1 = "never", 4 = "always"). The correlation between the subscales was .56. The internal consistencies of WC and WE were .79 and .73, respectively.

*Negative affect* was measured with a subscale of the Job-related Affective Well-being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000) in its shortened Dutch version (Schaufeli & Van Rhenen, 2006). The scale comprised seven items ( $\alpha = .86$ , e.g., "angry", "depressed"). One item ("guilty") was included in the original six-item scale, because of its importance for workaholism (Ng et al., 2007). The participants responded to a 5-point Likert scale (1 = "(almost) never", 5 = "(almost) always").

*Work-related irrational beliefs* were assessed with the newly developed questionnaire, dubbed the Work-related Irrational Beliefs Questionnaire (WIB-Q), which is described below.

## **4.3. Results**

### *The construction of the Work-related Irrational Beliefs Questionnaire*

The Belief Scale (Malouff & Schutte, 1986) was used as starting point for developing the WIB-Q, as this questionnaire was judged to be one of the few questionnaires tapping beliefs instead of affect (Robb & Warren, 1990). As we expected that beliefs about performance demands, approval, failure and control would be of importance for workaholism, four subscales of the Belief scale were selected that tapped these four type of beliefs respectively: (1) need for achievement, (2) need for approval, (3) awfulizing and (3) low frustration tolerance.

Table 4.1. Sample characteristics

	<i>M</i>	<i>SD</i>
Age (in years)	43.8	9.1
Years at job	6.2	5.8
Years in company	12.4	9.4
Contract work hours per week	35.1	5.9
Actual work hours per week	40.4	9.6
	<i>n</i>	%
Gender		
Females	478	52.4
Males	435	47.6
Leadership position		
Yes	448	49.1
No	465	50.9
Education		
Lower	29	3.2
Intermediate	178	19.5
Higher	706	77.3
Marital status		
Cohabitating or married	761	83.4
Single	137	15.0
Other	15	1.6
Sector		
Public administration	154	16.9
Financial services	75	8.2
Industry	134	14.7
Health care	120	13.1
Business services	177	19.4
Construction	24	2.6
Wholesale and retail trade	29	3.2
Transportation	18	2.0
Education	46	5.0
Other	136	14.9



We began by reformulating the eight original items in such a way that they would fit to the work context (e.g., approval of significant persons was changed into co-workers's approval). For each originally two-item subscale, we developed four additional belief items. Next, three experts independently (1) tried to match all 24 items (four types of beliefs and six items per belief) with the corresponding belief and (2) assessed the clarity of the wording of these items. The results of this procedure urged us to eliminate four items because they were incorrectly matched. In addition, we rewrote several items as they were found to be confusing. At the end of this stage, a scale with 20 items was retained with five items per subscale (1 = "completely disagree", 5 = "completely agree").

A principal components analysis (PCA) was conducted to assess the underlying factor structure among the 20 items using an oblique (direct oblimin) rotation. All of the items had communalities above .40. Bartlett's test of sphericity was significant (7189.35,  $p < .001$ ) and the Kaiser-Meyer-Olkin measure of sampling adequacy was sufficiently high (0.91), indicating that the data were suitable for PCA. The scree plot indicated that four factors could be extracted, which accounted for 59% of the variance in the item pool. The analysis produced a simple structure with the items clearly clustering on its respective factor ( $>.53$ ), and low factor loadings ( $< .35$ ) on the other factors. The four factors are: (1) *performance demands* (five items,  $M = 3.38$ ,  $SD = 0.65$ ,  $\alpha = .77$ ), (2) *co-workers' approval* (five items,  $M = 3.27$ ,  $SD = 0.69$ ,  $\alpha = .83$ ), (3), *failure* (five items,  $M = 2.96$ ,  $SD = 0.68$ ,  $\alpha = .78$ ), and (4) *control* (five items,  $M = 2.40$ ,  $SD = 0.72$ ,  $\alpha = .83$ ). Correlations between the factors range from .21 to .43.

Confirmatory Factor Analysis (CFA) was conducted to confirm the dimensionality of the WIB-Q using Amos 16 (Arbuckle, 2007). Based on the results of the PCA, it was anticipated that four dimensions could be discriminated. Goodness of fit was evaluated using (1) the  $\chi^2$  statistic, (2) the comparative fit index (CFI), (3) the Tucker Lewis index (TLI) and (4) the root mean square error of approximation (RMSEA). Chi-square difference ( $\Delta\chi^2$ ) tests were used to compare the fit of competing models that were nested (cf. Hu & Bentler, 1999). For CFI and TLI values of  $> .90$  indicate acceptable model fit, whereas for the RMSEA values  $< .08$  indicate acceptable fit. The one-factor model with all items loading on a single common factor did not fit the data,  $\chi^2 = 2882.97$  ( $df$  170),  $p < .001$ , CFI = .62, TLI = .57, RMSEA = .13. The hypothesized four-factor model fitted significantly better than the one-factor model ( $\Delta\chi^2 = 1949$  ( $df$  6),  $p < .001$ ) and had reasonable fit estimates ( $\chi^2 = 933.97$  ( $df$  164),  $p < .001$ , CFI = .89, TLI = .87, RMSEA = .07). For reasons of parsimony, and as indicated by the modification indices, we deleted one item of each scale. These items had either low loadings or high overlap in wording with other statements. After eliminating these items, the model showed a good fit to the data ( $\chi^2 = 552.77$  ( $df$  98),  $p < .001$ , CFI = .92, TLI = .90, RMSEA = .07) and yielded a

better fit than the comprehensive model ( $\Delta\chi^2 = 381.20$  ( $\Delta df$  66),  $p < .001$ ). All items had satisfactory factor loadings on the factors that they were assumed to represent, ranging from .55 to .87. Factor loadings of the WIB-Q items and cronbach's alpha's of the four WIB-Q subscales are presented in Table 4.2. The correlations between the latent factors ranged between .42 and .71. To conclude, both PCA and CFA supported a four-component model of irrational beliefs. Therefore, four subscales of irrational beliefs were employed in this study.

Table 4.3 shows the means, standard deviations and correlation coefficients of the study variables. Overall, work-related beliefs are moderately to strongly interrelated. Furthermore, work-related irrational beliefs and negative affect variables are highly related. The relationships between work-related beliefs, negative affect and workaholism are in the expected direction.

#### *Structural equation modeling*

In order to examine the influence of negative affect, two sets of analyses were conducted: one analysis without and one with negative affect as covariate. It was expected in Hypotheses 1 to 4 that after controlling for negative affect, the four work-related beliefs would be significantly related to workaholism. Structural Equation Modeling (SEM) with latent variables, using Amos 16 (Arbuckle, 2007), was employed to examine the four hypotheses simultaneously. Solutions were obtained on the basis of maximum-likelihood estimation. In order to adjust for potential confounding effects of demographics, age and sex were included as covariates in analyses. Based on our previous argumentation, the latent variable workaholism was represented using working compulsively and working excessively as separate indicators. The remaining latent variables, four irrational beliefs and negative affect, were in each case represented by two randomly created parcels (Marsh, Hau, Balla, & Grayson, 1998). All exogenous variables were permitted to be correlated with one another. Data screening of the observed indicators indicated no significant non-normality of the data with skew less than three and kurtosis less than four (Kline, 2005). For this analysis, the same selection of fit indices was used for as for the CFA. Table 4.4 provides an overview of these fit indices.

The fit indices suggest that the presented model without negative affect as covariate (Model 1) shows reasonable fit to the data. To refine the model, three non-significant paths were deleted and the remaining path coefficients were re-analyzed. This trimmed model (Model 1°) also reasonably fits the data. As was hypothesized, performance demands is positively related to workaholism ( $\beta = .38$ ,  $p < .001$ ), whereas, against our earlier hypothesis, co-workers' approval is not related to workaholism. The results furthermore show that failure is positively related

Table 4.2. Items and factor loadings of Confirmatory Factor Analysis of the Work-related Irrational Beliefs Questionnaire

Factor	1.	2.	3.	4.
<i>Performance demands</i> ( $\alpha = .74$ )				
1. At work, I have to achieve in order to be satisfied with myself	.55			
2. I must do my work flawlessly	.72			
3. I have to be the best at work	.60			
4. I do not allow myself to make mistakes at work	.73			
<i>Coworkers' approval</i> ( $\alpha = .80$ )				
5. I need the approval of colleagues to be able to do my work well		.75		
6. It is important to me that colleagues are pleased about me		.70		
7. To feel worthy, I need the approval of my colleagues		.76		
8. To be happy I must be liked by my colleagues		.66		
<i>Failure</i> ( $\alpha = .77$ )				
9. If I make a mistake, the consequences are terrible			.64	
10. It is terrible when I do not finish work on time			.68	
11. It is awful if I do not function properly at work			.61	
12. It is awful when things turn out badly at work			.79	
<i>Control</i> ( $\alpha = .83$ )				
13. I cannot stand having any ambiguity in my work				.69
14. I can only cope with work situations when they are predictable				.73
15. I cannot cope with having to take risk at work				.71
26. I cannot cope with uncertainty at work				.87

Table 4.3. Means, standard deviations and correlations of the study variables

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	43.78	9.13	—							
2. Sex	—	—	-.19	—						
3. Workaholism	2.37	0.54	-.17	.09	—					
4. Performance demands	3.28	0.71	-.21	.03	.42	—				
5. Co-workers' approval	3.20	0.72	-.21	.02	.26	.41	—			
6. Failure	2.85	0.71	-.18	.05	.41	.55	.36	—		
7. Control	2.45	0.78	-.18	.12	.18	.40	.40	.48	—	
8. Negative affect	2.32	0.80	-.17	.03	.46	.28	.33	.38	.42	—

Note. Sex: 0 = male, 1 = female;  $r \geq .09$  are significant at  $p < .01$ ,  $r \geq .12$  are significant at  $p < .001$ .

( $\beta = .22, p < .001$ ), while control is not related to workaholism. Altogether, the control variables and irrational beliefs explain 32% of the variance in the latent endogenous variable workaholism.

In order to partial out the influence of negative affect in the relationships between irrational beliefs and workaholism, we also tested a model that includes negative affect as covariate. This extended model (Model 2) fits the data well. All non-significant paths were eliminated and the remaining path coefficients were re-estimated. The final model (Model 2°) also indicates a good fit. Figure 4.1 shows the significant coefficients of this model. For reasons of economy, error terms, factor loadings and disturbance terms are not shown in this figure. The analysis reveals that negative affect is strongly and positively related to workaholism ( $\beta = .45, p < .001$ ). As in the previous model, the path coefficient that links performance standards and workaholism is positive and statistically significant ( $\beta = .42, p < .001$ ). Co-workers' approval is still not related to workaholism. Finally, against expectations, failure is not significantly related, whereas control is negatively related to workaholism ( $\beta = -.09, p < .01$ ).

In other words, our results clearly support the expectation that irrational beliefs regarding performance demands are related to workaholism (Hypothesis 1). No support is found for the notion that co-workers approval is related to workaholism (Hypothesis 2). After controlling for negative affect, failure was not significantly related anymore to workaholism. In other words, Hypothesis 3 is also not supported. In addition, contrary to the model without negative affect, in the model including negative affect as covariate, the relationship between control and workaholism is significant. However, it is in the opposite direction from what was expected. This result seems to indicate that negative affect is a negative suppressor effect for control and is therefore not interpreted. Note that in the model in which negative affect was not included, there was also no support for Hypothesis 4.

Sex is weakly but significantly related to workaholism (in our analyses  $\beta = .08/.09, p < .01$ , respectively), indicating that women are suffering slightly more from workaholism than men. Age is not related to workaholism. Altogether, the control variables (age and sex), irrational beliefs and negative affect explain 45% of the variance in the latent factor of workaholism.

Table 4.4. Fit indices of the hypothesized models

Model	$\chi^2$	df	p	RMSEA	TLI	CFI	$\Delta \chi^2$	$\Delta df$
M1	242.24	35	.001	.08	.90	.95		
M1 <sup>°</sup>	247.21	38	.001	.08	.91	.95	4.97	3 (ns)
M2	266.25	51	.001	.07	.93	.96		
M2 <sup>°</sup>	268.73	54	.001	.07	.93	.96	2.48	3 (ns)

Note: Model = type of model based on number and configuration of factors; M1 = hypothesized model without controlling for negative affect, M2 = hypothesized model controlling for negative affect, ° = hypothesized model with trimmed paths,  $\chi^2$  = chi-square, df = degrees of freedom,  $\Delta \chi^2$  = difference in chi-square,  $\Delta df$  = difference in degrees of freedom; ns = not significant.

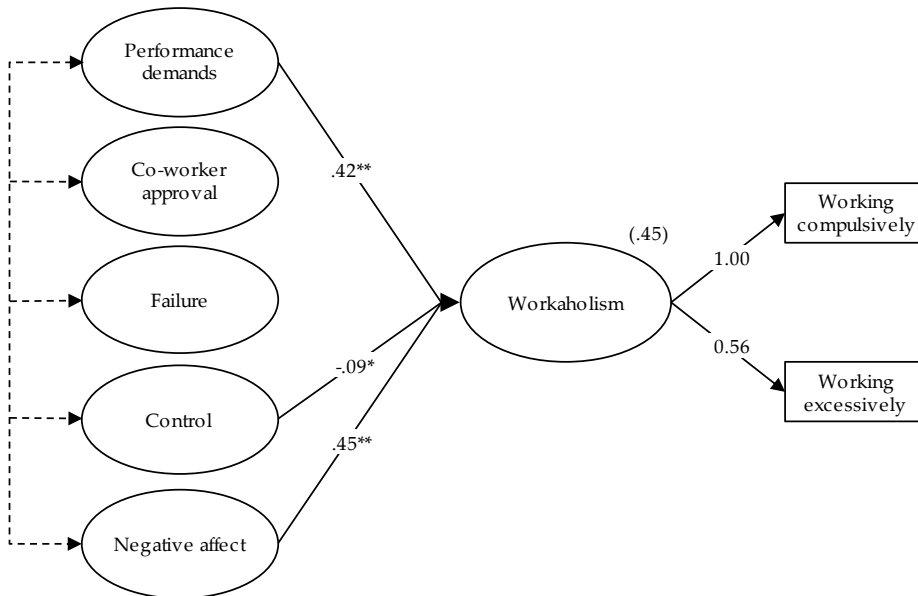


Figure 4.1. The significant paths in the hypothesized model; \*  $p < .01$ , \*\*  $p < .001$ .

#### 4.4. Discussion

In the current study, we investigated the relationship between irrational cognitions and workaholism. We hypothesized that setting unrealistic high performance standards, being dependent on the approval of co-workers, being afraid of failing and intolerance for uncontrollable situations at work would be associated with workaholism. In order to test our hypotheses, we developed a work-related irrational beliefs questionnaire that consisted of these four types of work-related irrational beliefs: (1) performance demands, (2) co-workers' approval, (3) failure, and (4) control. The data supported the proposed four-dimensional structure of irrational beliefs. Subsequent reliability analyses revealed that all four scales have sufficient internal consistency.

We then examined to what extent these irrational beliefs were related to workaholism; that is working compulsively hard. Given evidence that negative emotional states are associated with workaholism (Burke & Matthiessen, 2004; Chapter 6), we controlled for the effect of negative affect in our second set of analyses. This allowed us to more fully isolate the unique predictive value of irrational cognitions on workaholism. Our study confirmed the notion that negative affect was related to workaholism, indicating that also negative emotions are driving forces of the work addiction process. In addition it was found that, after controlling for negative emotions, holding unrealistic high standards of achievement for oneself is associated with workaholism. In other words, having high performance expectations appears to be associated with the compulsive drive to work excessively hard. Furthermore, being dependent on the approval of co-workers was not related to workaholism. Put differently, the need to be liked by colleagues is not specific to workaholics; it is not related to their compulsive work behavior. Furthermore, our analyses also do not support the idea that failure anticipation is an irrational belief that determines workaholism. This indicates that being vulnerable to high levels of concern is not at the basis of the workaholics' excessive behaviors. Finally, control was also not related to workaholism, and after controlling for negative affect a negative relationship occurred. As the correlation between control and workaholism was positive, it suggests that this unpredicted result is a suppressor effect that should not be interpreted. Finally, there was substantial shared variance between negative affect and work-related irrational cognitions, suggesting that these variables partially overlap. Accordingly, the effect of negative affect should not be ignored in examining irrational beliefs.

Our results predominantly indicate that the belief that one has to meet stringent performance standards is a key irrational cognition of workaholics. This coincides with the notion that workaholics have a high, and probably unrealistic, need to achieve (Mudrack, 2006). It is also in line with the work of Van Beek, Hu,

Schaufeli, Taris, and Schreurs (2011) who studied the relationship between working hard and work motivation, using Self Determination Theory (SDT) (Deci & Ryan, 1985). They found in a study among Chinese nurses and physicians that workaholism was positively related to introjected regulation, which results from internalizing external standards and pressures such as threats of guilt and punishment. This means that the work behavior of workaholics is regulated by internalized standards, which are not fully accepted as their own. Individuals who are driven by introjected regulation are likely to work hard in order to avoid feeling bad about themselves. Our findings support the idea that workaholics have internalized (irrational) external performance standards to protect their self-worth. In other words, irrational beliefs about high performance standards that have to be met at work could act as a vulnerability factor for workaholism.

We did not find evidence for the assumption that workaholic employees are to some extent motivated by obtaining approval from significant others at work, such as the supervisor (Burke, 1999; Spence & Robbins, 1992). Surprisingly, however, this non finding seems also to be in line with the finding of Van Beek and colleagues (2011) who observed that workaholism is not related to external regulation. According to SDT, individuals are externally regulated when their objective is to obtain external rewards or avoid receiving external punishments. For instance, an employee who engages in externally regulated work behavior is motivated to avoid disapproval by his or her manager.

Although workaholism has previously been linked to neuroticism (Andreassen et al., 2007; Clark et al., 1996), the current study shows that the phenomenon does not seem to be related to the neurotic belief that a situation is far worse than it actually is. The results show that after we controlled for negative affect the significant positive relationship between the irrational belief of failure and workaholism disappeared. Although workaholics have high performance standards, they do not seem to overestimate the consequences of bad events. Nevertheless, the possibility remains that the need for achievement mediates the relationship between failure and workaholism. That is, because workaholics overvalue the consequences of not being perfect, they place extra high demands on themselves, which could then lead to workaholic behaviors. Furthermore, negative affect apparently overlaps with beliefs of failure. One reason for the overlap between negative affect and failure may be that they are causally related. For example, people who are prone to experiencing negative emotions may tend to overestimate the consequences of making mistakes. Altogether, this could confirm the notion of Ellis (1993) that cognitions, emotions, and behaviors are practically never unrelated but integrally interact with and include each other. Longitudinal research is needed to evaluate this possibility. On basis of the current correlational

data, we can merely conclude that, even after controlling for negative affect, there was still a strong relationship between performance demands and workaholism. In other words, their association is not based on the common influence of negative affect. Finally, against expectations, we found that irrational beliefs concerning control are not related to workaholism.

### *Limitations and future research*

There are a number of limitations to our study that deserve mentioning. Firstly, data was drawn from a convenience sample of employees which carries the risk of selection bias. A possible selection effect that might have occurred is self-selection, i.e. those who were motivated or interested, participated in the survey. Unfortunately, we did not collect data among employees who refused to participate in the study, so we could not control for selective non-response. This limits the external validity of our study. Furthermore, convenience samples have the possibility of not being representative of the general population of employees. For instance, the current sample over represents highly educated individuals, which appears to be a risk group for developing workaholism (Hamermesh & Slemrod, 2008). In order to formally confirm the robustness and generalizability of the findings, more research on work-related irrational cognitions and workaholism with diverse and representative samples is needed. Finally, our study was limited by the use of cross-sectional data, so that caution must be exercised in the causal interpretation of the observed associations. Future studies should use longitudinal data to explore the temporal processes involved in irrational cognitions and workaholism.

Despite its limitations, the current work provides opportunities for further investigation. First of all, future research could examine more closely how irrational cognitions are associated with concepts that are narrowly related to workaholism. This may demonstrate whether our findings are specific to workaholism, or also apply to other work-related states, such as burnout. In other words, it would provide insight into the extent to which work-related beliefs have a differentiating value. In future research it should also be analyzed to what extent work-related irrational cognitions are different from general irrational cognitions. An example of a general irrational belief is: "I cannot live without the approval of important people in my life". This would shed light on questions like "Are work-related cognitions better (or worse) predictors of one's level of workaholism in comparison to general irrational cognitions?" or "Do they play a different role in the development of workaholism than general irrational cognitions?". Finally, research has raised the possibility that irrational beliefs are not completely opposite to rational cognitions but rather are independent constructs (Bernard, 1998). Therefore, it would be



interesting to construct a scale with work-related irrational and rational cognitions. Rational beliefs are true, sensible and functional ideas such as “I am a worthy person even if I do not perform well at work”. Future research could disentangle more closely to what extent we can differentiate between functional and dysfunctional work-related cognitions and how they relate to workaholism.

### *Practical implications*

The findings of the current study contribute to the methodology clinical professionals use to quantify work-related irrational cognitions. More specifically, as irrational cognitions can be distinguished in at least four separate constructs, it should be assessed accordingly rather than through the use of a unitary irrationality measure. Consequently, our findings provide an important elaboration of other models that incorporate cognitive responses at work. One of these models is the Workstyle model (Feuerstein, 1996), which is based upon the hypothesis that people differ in their behavioral, physiological, emotional and cognitive responses to work demands. The model postulates that these individual differences may explain the etiology, exacerbation, and/or maintenance of health symptoms, in particular upper limbs symptoms and work disability. The current study seems to be an extension of the cognitive dimension of work style. It sheds light on other cognitive aspects that may impact work dysfunction besides self-imposed workload (i.e., performance demands) and social reactivity (i.e., approval of coworkers) (Sharan et al., 2011) that is, the need for control and beliefs of failure. Moreover, it has already been suggested that REBT seems to provide the counselor with both the theoretical outline and the appropriate intervention tools in counseling workaholic clients (Burwell & Chen, 2002). Our findings confirm this notion. Furthermore, the results of our study may guide the way workaholism is targeted by REBT interventions. That is, clinical professionals or trainers might target irrational performance demands and negative affect first, rather than focusing on other forms of irrationality such as dependency of approval, and beliefs of failures or control. The findings also have implications for the social environment of the workaholic. Work and family environments may unwittingly reinforce the extreme demands workaholics impose on themselves. Therefore is it important that the social environment is aware of the workaholics' vulnerability, stimulates realistic performance standards and clearly communicates expectations.

### *Conclusion*

In summary, the current study examined the association between irrational beliefs and workaholism. The results indicate that four forms of work-related irrational cognitions could be distinguished. These are irrational beliefs concerning (1)

performance demands, (2) approval of co-workers (3) failure, and (4) control. Performance demands, i.e. holding unrealistic high demands for oneself, was found to be a risk factor for workaholism. Against expectations, the other three irrational cognitions did not seem to be relevant for workaholism. These results were found after controlling for negative affect, indicating that negative affect could not be an explanation for the results. Taken together, these data highlight the psychological vulnerabilities inherent in workaholics and suggest that workaholics should benefit from interventions designed to reduce irrational performance demands.

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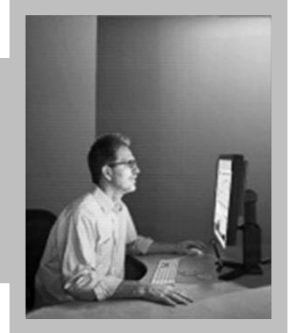
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# CHAPTER 5



## **Enough is enough!**

### *Cognitive antecedents of workaholism and its aftermath*

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## 5.1. Introduction

Most people spend a considerable part of their lives working, but some individuals devote more time to work than others. While there are several reasons to work hard, for some it seems a manifestation of their compulsive inner drive to work excessively hard. This phenomenon was referred to as “workaholism” by pastor Oates (1968). As workaholics compulsively invest much effort into their work (Scott, Moore, & Miceli, 1997), they are at risk of developing health problems (Burke, 1999c; Taris, Geurts, Schaufeli, Blonk, & Lagerveld, 2008). Finding ways to effectively reduce or prevent workaholism is important for Human Resource (HR) professionals and relies on a better understanding of its antecedents. Previous studies have shown that demographic characteristics (Spence & Robbins, 1992), a stressful work environment (Kanai & Wakabayashi, 2004), and an organizational culture that values high work pressure (Buelens & Poelmans, 2004) relate to workaholism. A rather unexplored, but important issue is how specific cognitive factors exert influence on workaholism (McMillan, O’Driscoll, & Burke, 2003), and thus, on health problems, such as burnout.

There is reason to believe that cognitions play an important role in the development of workaholism. For instance, in a cross-sectional study, Burke (1999b, 2001) showed that striving against others, moral principles, and proving oneself were predictive of a workaholic drive. Furthermore, it has been suggested by Porter (2004) that workaholics “are prone to rigid thinking; they are not able to be flexible in their ideas. This results in perfectionist attitudes that exceed simple maintenance of high standards.” (p. 435). More knowledge on the cognitive vulnerabilities of workaholics may yield new insights into the development of workaholism. A related advantage of a cognitive approach is that it adopts an optimistic point of view with regard to changing the workaholic behavior; that is, if maladaptive thought patterns lead to workaholic behavior, workaholism may be decreased through adjustment of dysfunctional cognitions (McMillan & O’Driscoll, 2008). This implies that the cognitive approach may provide HR professionals with practical tools for recognizing and treating potentially maladaptive hard workers, which, in turn, could have a positive effect on the reduction of burnout. Then, as suggested by Robinson (2007), workaholics “try to squeeze more work in less time, burnout occurs for them” (p. 46). The notion that workaholics have a relatively high risk on burnout is confirmed by a number of cross-sectional studies (cf. Andreassen, Ursin, & Eriksen, 2007; Taris, Schaufeli, & Verhoeven, 2005; Taris et al., 2008). However, so far, the causal nature of this relationship remains untested. Furthermore, there is reason to believe that workaholism mediates the relationship between cognitive antecedents and burnout. For instance, Taris, Van Beek, and Schaufeli (2010) showed that the association between perfectionism and burnout (emotional

exhaustion) was mediated by workaholism. However, this assumption has as yet not been tested in a two-wave design using multiple cognitive antecedents.

In the present study, we aim to show that cognitive antecedents have an indirect impact on exhaustion through workaholism. Building upon the Conservation of Resources Theory (Hobfoll, 1989, 2002), we examine reciprocal relationships between cognitive antecedents, workaholism and exhaustion. The focus is on two specific cognitive antecedents, namely (1) *performance-based self-esteem* (i.e., a self-esteem that is highly contingent on one's perceived performance), and (2) applying an *enough continuation rule* (i.e., drawing on one's perceived performance for determining work persistence).

### *Workaholism*

Ever since the notion of "workaholism" was introduced, scholars have held different viewpoints on its definition. The common theme in most definitions is that workaholics spend considerable time on their work. However, the reasons for people to work hard may differ, and do not inevitably indicate workaholism (Porter, 1996). An influential definition that was not based on work hours alone, and that referred to the motivation to do so, was provided by Spence and Robbins (1992). They suggested that a "real" work addict is "highly work involved, feels compelled or driven to work because of inner pressures, and is low in enjoyment of work" (p.162). In an analysis on the common elements in definitions of workaholism, Scott et al. (1997) distinguish the following three critical characteristics of workaholics: (1) They tend to spend a large amount of time on work activities, (2) they frequently think about work, when not at work, suggesting they are obsessed with work, and (3) they tend to work beyond organizational and monetary expectations, needs or demands. Schaufeli, Taris, and Bakker (2008) noted that the final feature seems an extension of the first, because it refers to the reason for spending a great deal of time on work.

In a more recent review, Ng, Sorensen, and Feldman (2007) defined workaholism as reflecting affect, cognition, and behavior. They typified workaholics as those who are obsessed with working, who commit long hours to work, and who enjoy working. It should be noted that, according to Ng and his colleagues, workaholics enjoy the *act of working* rather than the *actual work* they do. However, some have argued that enjoyment by nature, whether high or low, whether focused on work or on the act of working, cannot be a central component of workaholism, because by discriminating both "good" and "bad" forms of workaholism, the meaning of the term is blurred (Mudrack, 2006; Porter, 2001). Therefore, we agree with Scott et al.'s notion that workaholism is a combination of a cognitive (work obsession) and a behavioral (excess work) component. This is in

line with the definition as proposed by Oates (1971), who labeled workaholism as a “the compulsion or the uncontrollable need to work incessantly” (p.11). In accordance with his definition, we posit that workaholics have “an irresistible inner drive to work excessively hard” (Schaufeli et al., 2008, p. 219).

### *Theoretical framework*

The Conservation of Resources (COR) theory (Hobfoll, 1989, 2002) provides a useful framework for understanding the adverse consequences of workaholic behavior. COR theory states that people attempt to attain, maintain, and protect their resources. These resources are entities that people personally value or that serve as a means to attain favorable outcomes, including objects, conditions, personal characteristics, and energy resources. From a COR perspective, individuals experience stress: (1) when resources are threatened, (2) when resources are lost, and/or (3) when individuals fail to gain resources after investments have been made to maximize resources. COR theory has been applied for understanding, for instance, the burnout process (Halbesleben, 2006; Hobfoll & Freedy, 1993). Burnout is a chronic stress reaction that typically results from a process of gradual depletion of resources without compensating resource gain or replenishment of resources. Burnout is an important issue to organizations, because of its negative impact on job performance, organizational commitment, turnover and job satisfaction (Halbesleben & Buckley, 2004; Shirom, 2003). Although burnout is usually defined by exhaustion, cynicism, and reduced efficacy (Schaufeli, Leiter, Maslach, & Jackson, 1996), exhaustion is considered to be its core symptom (Schaufeli & Enzmann, 1998), which is characterized by a depletion of mental resources.

There are strong indications that workaholism has serious implications for employee health, particularly in terms of the level of burnout (Andreassen et al., 2007; Burke, 1999c; Taris et al., 2005, 2008). Because workaholics work hard, they seem to deplete their resources to the point of near exhaustion (Maslach, 1986). This is consistent with studies that show that working long hours is related to increased levels of strain (for a review, see Van der Hulst, 2003). A lack of recovery might explain why workaholism translates into burnout; that is, hardworking employees may have not enough time left to recover from their work efforts by relaxing or sleeping (Sonnentag & Zijlstra, 2006; Chapter 6), which could result in fatigue, and eventually, exhaustion. Nonetheless, the causal direction of the relationship between workaholism and exhaustion has not been established in earlier research. Longitudinal research can shed more light on the direction of the relationship between workaholism and burnout. We anticipate that, over time, a compulsive drive to work and devoting a great deal of time to work will have negative consequences in terms of increased exhaustion.

*Cognitive antecedents of workaholism*

What causes workaholism? The cognitive approach views workaholism as stemming from dysfunctional core beliefs (e.g., “I am a failure”), faulty assumptions (e.g., “I am only lovable if I succeed”), and automatic thoughts (e.g., “I have to work hard” ) (McMillan & O’Driscoll, 2008). Porter (2004) suggested that “the workaholic’s life is an endless pursuit of more and more accomplishment, in an attempt to finally feel of genuine worth, but to no avail” (p. 435). Hallsten (1993) labeled such a contingent self-worth as “performance-based self-esteem”. Performance-based self-esteem is an orientation to gain or maintain self-esteem through good role performances. Hallsten, Voss, Stark et al. (2011) showed that having a performance-based self-esteem is a risk factor for developing burnout. The rationale is that when individuals’ self-esteem is contingent upon outstanding performances, they are likely to work very hard to achieve recognition, which may ultimately drain their energy and lead to burnout. Since workaholics work excessively by definition, it is plausible that having a performance-based self-esteem constitutes a risk-factor for developing workaholism. Individuals, who constantly have to sustain their self-esteem, might view work as an opportunity to prove themselves. In other words, workaholism expresses the need or desire for self-esteem, which may eventually lead to burnout. Hallsten, Josephson and Torgén (2005) showed, indeed, that performance-based self-esteem relates to working overtime, as well as to Type-A behavior pattern (Burke, 1999a; Robinson, 1999) and perfectionism (Spence & Robbins, 1992), which are akin or related to workaholism. In addition, in line with our reasoning that workaholism is determined by performance-based self-esteem, workaholism has been associated with achievement-related values and traits (Ng et al., 2007). According to Ryan and Deci (2000), contingent self-esteem is anchored in introjected regulation, which is a form of extrinsic motivation whereby one performs actions in order to avoid guilt or anxiety, or to attain ego-enhancement. In a recent study, Van Beek, Hu, Schaufeli, Taris, and Schreurs (2011) show that such a motivational orientation is associated with workaholism. In other words, in order to avoid feeling like a failure, workaholics have internalized external performance demands. In the present study, we test the assumption that when employees base their sense of self-worth on their performance, they are susceptible for developing workaholism.

Moreover, earlier work has suggested that compulsive behaviors such as workaholism arise when individuals commit to self-imposed and rigid cognitive rules (Bénabou & Tirole, 2004). The Mood-as-Input (MAI) model (Martin, Ward, Archee, & Wyer, 1993), which has proven to be relevant in clinical psychological settings for explaining compulsive behaviors, provides a theoretical basis for this assumption. The MAI model assumes that people use personal cognitive “rules”, to

evaluate how they are doing on a given task with no clear ending. According to the MAI model, individuals can use their work output or their work enjoyment (*an enough rule* and *an enjoyment rule*, respectively) as a benchmark for this evaluation.

Workaholics typically set high performance standards for themselves (Spence & Robbins, 1992). Since workaholics take pride in the amount of work they have done (Oates, 1971), doing enough work seems important to them. As workaholics tend to overestimate the consequences of failure (Berglas, 2004), this overstriving may be considered as a form of avoidance behavior; it prevents the occurrence of anticipated negative consequences (e.g., rejection by colleagues). Workaholism has been associated with job dissatisfaction, which possibly reflects the idea of workaholics that they are unable to fulfill their work aspirations (Scott et al., 1997). Work provides workaholics only with temporary satisfaction, but repeatedly fails to offer a long-lasting sense of achievement. With every disappointment, workaholics set higher goals, hoping that they perform better in the future so that they can feel good about themselves (Porter, 1996). Since workaholics, by definition, work far beyond their job descriptions (Scott et al.), it is obviously difficult for them to set boundaries because they never feel that they put enough effort into their work, due to an underlying enough rule. Van Wijhe, Peeters, and Schaufeli (Chapters 2 and 3) were the first that applied the principles of the MAI model to the work context. In a study among academics, they found that there is a distinction between rules used to stop and to continue working. Workaholics were found to continue working when they feel they haven't done enough yet (*an enough continuation rule*). Remarkably, no relationship was found between the enough stop rule (quit working when one feels one has done enough) and workaholism. The fact that workaholics do not stop working when they have done enough, but then again continue working when they have not done enough, seems to mirror their compulsive tendencies. Based on these indications, we expect that applying the principle of continuing working in order to do as much as possible might be a precursor of workaholism. In the present study, we test the assumption that when employees tend to persist with working based on an evaluation of their output, they are vulnerable for developing workaholism.

Taken together, our theorizing as well as the results of previous studies leads us to formulate the following hypotheses:

Hypothesis 1: Having a performance-based self-esteem will have lagged positive effects on (a) working compulsively and (b) working excessively.

Hypothesis 2: The enough continuation rule will have lagged positive effects on (a) working compulsively and (b) working excessively.

Hypothesis 3: (a) Working compulsively and (b) working excessively will have lagged positive effects on exhaustion.

The present study aims to focus on the mechanism linking cognitive antecedents to burnout, through workaholism. As outlined above, earlier research demonstrated positive relationships between performance-based self-esteem and burnout (Hallsten et al., 2011). There are also indications for a positive relationship between perfectionism (concern over making mistakes) and burnout (Taris et al., 2010). A strong performance orientation might have negative consequences, in that it impedes individuals from paying attention to their own needs, and therefore increases the risk at burnout. In addition, cognitions, such as performance-based self-esteem and the enough continuation rule, may be associated with a higher burnout risk, because such beliefs lead to workaholic patterns that deplete a person's mental energy. If workaholism mediates the association between cognitive antecedents and exhaustion, a direct relationship between cognitive antecedents and exhaustion is a precondition. For that reason, we formulated the following hypotheses:

Hypothesis 4: Performance-based self-esteem will have a lagged positive effect on exhaustion.

Hypothesis 5: The enough continuation rule will have a lagged positive effect on exhaustion.

To test the hypothesized relationships we employed a two-wave design with a 6-month time lag between the study waves. Following suggestions of De Lange et al. (2003), we systematically compare structural models to investigate plausible causal relationships between cognitive antecedents, workaholism and burnout. Specifically, we compared three different types of causality: (1) normal causation (as stated in our hypotheses), (2) reverse causation (e.g., workaholism may lead to higher levels of performance-based self-esteem), and (3) reciprocal causation (e.g., the enough continuation rule and workaholism affect each other mutually).

## **5.2. Method**

### *Participants and procedure*

Participants were invited as part of a two-wave longitudinal wellbeing survey among staff members of a Dutch University. At Time 1, 732 employees were approached for participation in the study. In total, 340 employees responded (response rate of 46.5%) by completing an online questionnaire that included questions about work characteristics, motivation and well-being. The anonymity and confidentiality of the data were ensured. Furthermore, participants voluntarily agreed to take part in the study and were informed that completing the questionnaire represented their informed consent. At Time 2, 6 months later, the initial group of employees was requested to complete a highly similar survey. Of

these respondents, 305 agreed to participate (response rate of 41.7%). Altogether, 191 employees completed both the first and the second questionnaire (response rate of 26.1%). No differences with regard to age and sex were found on Time 1 between those who agreed to participate in the follow up-study ( $n = 191$ ) and the non-response group ( $n = 149$ ).

The final sample consisted of 66 males (34.6%) and 125 females (65.4%), with an average age at Time 1 of 39.10 years ( $SD = 12.09$ ). In addition, the majority of the sample held a college or a university degree (92.6%). Three-quarter (75.0%) of the sample was part of the scientific staff, while the remaining part consisted of support staff. Organizational tenure was 9.37 years ( $SD = 9.64$ ), with an average of 5.07 years ( $SD = 2.37$ ) in the present job. While participants had an average number of 32.76 contract hours ( $SD = 7.63$ ) per week, they reported to actually work more hours ( $M = 39.45$  hours,  $SD = 10.42$ ) per week. A typical full-time contract at Dutch universities includes 36 working hours per week, but many employees work part time.

### *Measures*

*Workaholism* was measured with the short Dutch Work Addiction Scale (Schaufeli, Shimazu, & Taris, 2009) which consists of two dimensions. The first dimension, Working Compulsively, includes five items (e.g., "I feel that there's something inside me that drives me to work hard") and the second dimension, Working Excessively, comprises five items as well (e.g., "I overly commit myself by biting off more than I can chew"). The WC scale is derived from the Drive scale of the Workaholism Battery (WorkBat; Spence & Robbins, 1992), whereas the WE scale is based on the Compulsive Tendencies scale of the Work Addiction Risk Test (WART; Robinson, 1999). Both scales use a 4-point scale (1 = "never", 4 = "always"). The internal consistencies of WC and WE were .72 and .68 at Time 1, and .73 and .70 at Time 2, respectively.

*Performance-based self-esteem* was measured by four items that were derived from the work of Hallsten (1993, 2005): (1) "I think that I sometimes try to prove my worth through my work", (2) "My self-esteem is far too dependent on my work achievements", (3) "At times, I have to be better than others to be good enough myself", (4) "Occasionally I feel obsessed to accomplish something of value through my work" (1 = "strongly disagree", 5 = "strongly agree"). The internal consistencies of the scales were .67 at Time 1 and .73 at Time 2.

The *enough continuation rule* was assessed using the three-item scale of the Work Persistence Rules Checklist (Van Wijhe, Peeters, & Schaufeli, 2011). People were asked how often they continued working the last five working days because of the following reasons: (1) "I wanted to be sure that I had done enough", (2) "I had

not been productive enough”, and (3) “I felt that I did too little work” (1 = “(almost) never”, 5 = “(almost) always”). The internal consistencies of the scale were .81 at Time 1 and .79 at Time 2.

*Exhaustion* was measured using the Dutch version (Schaufeli & Van Dierendonck, 2000) of a subscale of the Maslach Burnout Inventory-General Survey (MBI-GS; Schaufeli et al., 1996). The exhaustion scale comprises five items that refer to severe tiredness. An example item is: “I feel mentally exhausted because of my work” (0 = “never”, 6 = “always”). The internal consistencies of the scale were .82 at T1 and .87 at Time 2.

### *Data analysis*

We applied structural equation modeling (SEM) using AMOS (Arbuckle, 2007) to examine the hypothesized longitudinal relationships between the cognitive antecedents, workaholism and burnout. Because of our relatively small sample size, we decreased the complexity of our hypothesized model by using manifest variables only (Jöreskog & Sörbom, 1993). According to Cole and Maxwell (2003), and Taris and Kompier (2006), a two-wave mediation test is conducted in two steps: (1) testing the relationships between the predictor at T1 (i.e., cognitive antecedents) and the mediator at T2 (i.e., working compulsively and working excessively) controlling for the mediator at T1 and (2) and testing the relationships between the mediators at T1 and the outcome at T2 (i.e., exhaustion) controlling for the outcome at T1. Under the assumption that the relationships do not change in magnitude over time, the paths between the mediator at T1 and outcome at T2 would be equivalent to the path between the mediator at T2 and a hypothetical outcome variable at T3. Under this assumption, the product of the path between the predictor at T1 and the mediator at T2 by the path between the mediator at T1 and the outcome at T2 gives an estimate of the mediational relationship (Cole & Maxwell, 2003). Full mediation cannot be examined in a two-wave design as it is not possible to test whether the relationship between the predictor and outcome can be fully explained by the mediator.

Following these steps, we (1) estimated the causal relationships between the predictors (performance-based self-esteem and enough continuation rule) and the mediators (working compulsively and working excessively) and (2) the causal relationships between the mediators (working compulsively and working excessively) and the outcome (exhaustion). In line with Hakanen, Peeters, and Perhoniemi (2011), we additionally tested the direct associations between the predictors (i.e., cognitive antecedents) and the outcome (i.e., exhaustion). Namely, our full-panel design enabled us to compare several alternative models including causal and reversed causal effects. Firstly, we specified a model including



autoregressive effects (i.e., stability paths between each possible pair of variables of both measurement waves) and synchronous effects (i.e., residual co-variances) of variables, without any cross-lagged associations. This model is dubbed the stability model (Model 1). Secondly, we tested a model that is similar to Model 1 but that also includes the hypothesized cross-lagged structural paths. This model is labeled as the normal causation model (Model 2). Thirdly, we examined a model that is identical to Model 1 but that also incorporates cross-lagged structural paths that are opposite to the structural paths of Model 2. This is called the reversed causation model (Model 3). Finally, we specified a model that includes reciprocal relationships between the study variables and integrates all effects of Model 1, 2 and 3. This model is called the reciprocal model (Model 4). Altogether, for each of the three sets of analyses, four structural equation models were compared. In our analyses, we controlled for age and gender.

As preliminary analyses of the distribution of data indicated no significant deviations from normality, the use of maximum likelihood estimations for analyzing covariance matrices is justified. The model fit was evaluated in terms of the chi-square ( $\chi^2$ ) statistic and the Root Mean Square Error of Approximation (RMSEA). We also examined fit indices that are less sensitive to sample size, including the Comparative Fit Index (CFI) and the Tucker Lewis Index (TLI). For the RMSEA, values of .08 indicate acceptable model fit, while values of .05 are indicative of good model fit (Kline, 2005). For the other fit statistics, values of .90 represent acceptable fit, while values of .95 or higher indicate good fit (Hu & Bentler, 1999).

### 5.3. Results

#### *Descriptive statistics*

Table 5.1 presents means, standard deviations, and correlations among the study variables. All correlations were in the expected direction. The high test-retest correlations ( $r$ 's > .66) show that perceptions of performance-based self-esteem, the enough continuation rule, workaholism and exhaustion are relatively stable over time.

#### *Cognitive antecedents and workaholism*

We employed a three-step cross-lagged panel analysis to test our assumptions from cognitive antecedents, through workaholism, to exhaustion. First, we examined the relationships between the hypothesized predictors (performance-based self-esteem and enough continuation rule) and mediators (working compulsively and working excessively). Table 5.2 summarizes the fit indices, as well as the model comparisons for the cross-lagged relationships between performance-based self-esteem and the

Table 5.1. Means, standard deviations, and correlations among the study variables ( $n = 191$ )

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Age	39.10	12.09	–											
2. Gender (1 = female)	0.65	0.48	-.33***	–										
3. Performance-based self esteem T1	3.48	0.63	-.32***	-.02	–									
4. Performance-based self-esteem T2	3.41	0.71	-.26***	.07	.68***	–								
5. Enough continuation rule T1	2.53	0.97	-.35***	.15*	.27***	.30***	–							
6. Enough continuation rule T2	2.49	0.95	-.27***	.11	.32***	.31***	.66***	–						
7. Working compulsively T1	1.93	0.56	-.25**	-.01	.43***	.36***	.45***	.40***	–					
8. Working compulsively T2	1.96	0.58	-.26***	-.01	.47***	.42***	.44***	.42***	.71**	–				
9. Working excessively T1	2.25	0.57	.01	-.06	.26***	.13	.29***	.26***	.52**	.41***	–			
10. Working excessively T2	2.28	0.59	.00	-.09	.20**	.13	.32***	.29***	.36**	.49***	.77***	–		
11. Exhaustion T1	3.60	1.44	-.14	-.07	.17*	.00	.28***	.20**	.31**	.34***	.32***	.33***	–	
12. Exhaustion T2	1.51	1.51	-.23**	-.01	.23**	.16*	.32***	.30***	.40**	.55***	.36***	.47***	.66***	–

Note. Abbreviations: T1 = Time 1, T2 = Time 2; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 5.2. Model fit indices of the study models ( $n = 191$ )

Model		$\chi^2$	$df$	$p$	RMSEA	TLI	CFI	Model comparison	$\Delta \chi^2$	$\Delta df$
<i>Cross-lagged relationships between cognitive antecedents and workaholism</i>										
M1	Stability model	43.67	20	.000	08	.93	.97			
M2	Normal causality model	24.58	16	ns	05	.97	.99	M1 vs. M2	19.09***	4
M3	Reversed causality model	31.95	16	.01	07	.94	.98	M1 vs. M3	11.72*	4
M4	Reciprocal causality model	13.78	12	ns	03	.99	1.00	M1 vs. M4	29.89***	8
								M2 vs. M4	10.80*	4
								M3 vs. M4	18.17**	4
M5	Final model	19.61	16	ns	03	.99	1.00	M1 vs. M5	24.06***	4
<i>Cross-lagged relationships between workaholism and exhaustion</i>										
M1	Stability model	36.96	12	.000	11	.91	.96			
M2	Normal causality model	15.41	10	ns	05	.98	.99	M1 vs. M2	21.55***	2
M3	Reversed causality model	28.01	10	.002	10	.94	.97	M1 vs. M3	8.95*	2
M4	Reciprocal causality model	8.66	8	ns	02	1.00	1.00	M1 vs. M4	28.30***	4
								M2 vs. M4	6.75*	2
								M3 vs. M4	19.35***	2
M5	Final model	10.37	9	ns	03	.99	1.00	M1 vs. M5	26.59***	3
								M4 vs. M5	1.71	1
<i>Cross-lagged relationships between cognitive antecedents and exhaustion</i>										
M1	Stability model	30.86	12	.002	09	.90	.96			
M2	Normal causality model	23.55	10	.009	08	.92	.97	M1 vs. M2	7.31*	2
M3	Reversed causality model	26.04	10	.004	09	.90	.96	M1 vs. M3	4.82	2
M4	Reciprocal causality model	18.62	8	.02	08	.92	.98	M1 vs. M4	12.24*	4
								M2 vs. M4	4.93	2
								M3 vs. M4	7.42*	2
M5	Final model	25.66	11	.007	08	.92	.97	M1 vs. M5	5.52*	1
								M2 vs. M5	2.11	1

Note. Coefficients and numbers refer to model fit indices; abbreviations: M = model,  $\chi^2$  = chi-square,  $df$  = degrees of freedom,  $\Delta \chi^2$  = difference in chi-square,  $\Delta df$  = difference in degrees of freedom; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

enough continuation rule on the one hand and the two dimensions of workaholism on the other hand. All models indicate a good fit as the greater part of the fit indices are well over the .95 threshold and the RMSEA is equal or lower than .08.

The chi-square difference test between the models indicated that the normal causality model provided a significant better fit to the data than the stability model (M2 vs. M1). In addition, the reversed causality model showed a slightly better fit to the data than the stability model (M3 vs. M1). It was also shown that the model that included reciprocal effects of cognitive antecedents and workaholism fitted the data significantly better than the stability model (M4 vs. M1). Moreover, the reciprocal causality model showed a significantly better fit to the data than the causality model (M4 vs. M2) and the reversed causality model (M4 vs. M3), also in terms of the additional fit indices. Altogether, compared to the other competing models, the reciprocal model accounted best for the data. However, not all the paths in Model 4 were statistically significant. After omitting the non-significant paths in a stepwise backward fashion, the fit of the final model (M5) remained satisfactory, and was not different from the stability model (M5 vs. M1) or from the reciprocal causation model (M5 vs. M4).

Standardized parameter estimates for the final model are presented in Figure 5.1. The stability coefficients for the constructs ranged from .64 to .76. This means that the variables have moderately high to high 6 month stability. Concerning the relationships between the covariates and the variables at Time 1, age was negatively related to performance-based self-esteem ( $\beta = -.36, p < .001$ ), the enough continuation rule ( $\beta = -.34, p < .001$ ) and working compulsively ( $\beta = -.28, p < .001$ ). This indicates that younger employees reported higher scores on these variables. Gender was not related to the other variables at Time 1.

According to Hypothesis 1, performance-based self-esteem would be positively related to working compulsively and to working excessively over time. The results showed that, indeed, T1 performance-based self-esteem ( $\beta = .17, p < .001$ ) had a positive, lagged effect on T2 working compulsively, but not on T2 working excessively. Thus, Hypothesis 1 was partly supported.

Hypothesis 2 stated that the enough continuation rule would be positively related to working compulsively as well as to working excessively over time. The final model showed that the enough continuation rule at T1 had a unique positive effect on T2 working compulsively ( $\beta = .11, p < .05$ ), and on T2 working excessively ( $\beta = .10, p < .05$ ). Thus, Hypothesis 2 was fully supported. In addition, a reversed causal effect was found of T1 working compulsively on T2 enough continuation rule ( $\beta = .14, p < .05$ ). In other words, the enough continuation rule and working compulsively affect each other mutually.

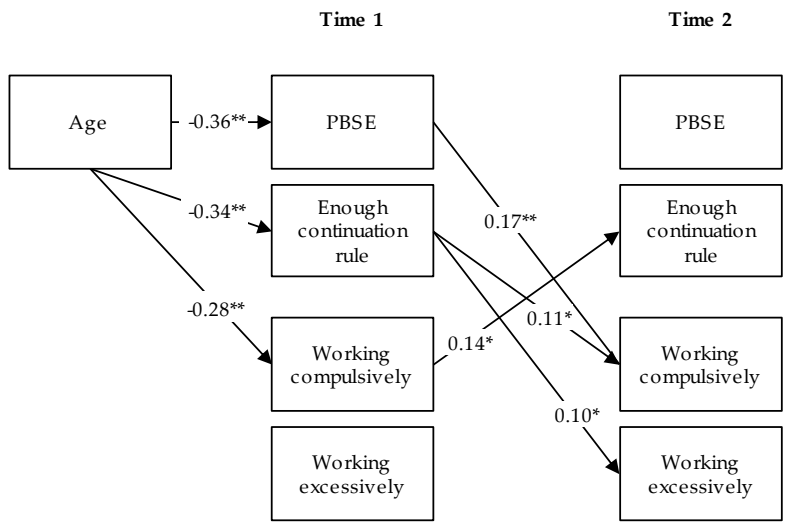


Figure 5.1. Final direct effects model of statistically significant cross-lagged associations between cognitive antecedents and workaholism; \*  $p < .05$ , \*\*  $p < .001$ .

*Workaholism and exhaustion*

In the second step we investigated the lagged relationships between the mediators (working compulsively and working excessively) and the expected outcome (exhaustion). Table 5.2 presents the fit indices and the comparison of the competing causal models. Overall, the models show a good fit to the data, since all fit indices meet accepted standards. The only exception is the RMSEA value ( $> .08$ ) for the stability model (M1) and the reversed causation model (M3).

The comparison of the four models shows that the normal causation model had a significantly better fit than the stability model (M2 vs. M1). When comparing the reversed causation model to the stability model, it appeared that also the reverse model had a superior fit (M3 vs. M1). Yet, the chi-square difference test showed that the reciprocal causation model was significantly better than the stability model (M4 vs. M1), the normal causation model (M4 vs. M2), and the reversed causation model (M4 vs. M3). This is confirmed by the other fit indices. Looking at the path coefficients for Model 5, however, not all relationships were significant. Most importantly, the relationship between T1 working excessively and T2 exhaustion was not significant, indicating that exhaustion could not be predicted from working exceptionally hard 6 months before. In order to create a more parsimonious model, we dropped this non-significant path. Comparison between the parsimonious model and the reciprocal model revealed no significant

differences (M5 vs. M4). Therefore, we retained the most parsimonious model (M5) model as our final model.

Parameter estimates of this final model are shown in Figure 5.2. In addition to the high stabilities for working compulsively and working excessively (.68 and .73 respectively), a moderately high stability coefficient was found for exhaustion (.62). With regard to the covariates, age was significant related to working compulsively ( $\beta = -0.28, p < .001$ ) and to exhaustion ( $\beta = -0.18, p < .05$ ) at Time 1. This implies that the younger the employee, the more likely they will have a compulsive work drive or experience severe fatigue. Again, gender was not related to any of the other variables at Time 1. Hypothesis 3 asserted that working compulsively and working excessively at Time 1 would have lagged positive effects on exhaustion at Time 2. It was shown earlier that T1 working excessively did not have a unique effect on T2 exhaustion. Nevertheless, in line with our expectations, T1 working compulsively was positively related to T2 exhaustion ( $\beta = .23, p < .001$ ). Therefore, Hypothesis 3 was partly supported by the data. However, as the model with cross-lagged reciprocal relationships best fit the data, the reversed causal paths between workaholism and exhaustion seem equally important. The results indicated, indeed, additional cross-lagged effects from T1 exhaustion to T2 working compulsively ( $\beta = .12, p < .05$ ) and to T2 working excessively ( $\beta = .10, p < .05$ ). These findings show that working compulsively and exhaustion reciprocally reinforce each other. Furthermore, although exhaustion is not predicted by working excessively, it seems to provoke working excessively itself.

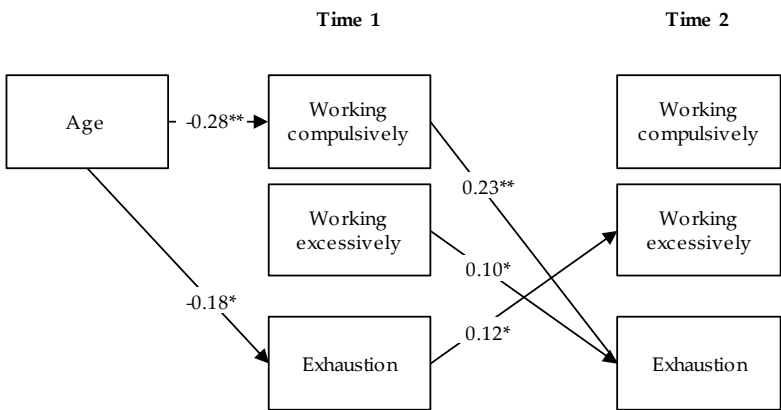


Figure 5.2. Final direct effects model of statistically significant cross-lagged associations between workaholism and exhaustion; \*  $p < .05$ , \*\*  $p < .001$ .

*Cognitive antecedents and exhaustion*

In the final step, we examined the longitudinal associations between the hypothesized predictors (i.e., performance-based self-esteem and enough continuation rule) and the outcome (i.e., exhaustion) (Hypothesis 4 and Hypothesis 5, respectively). Table 5.2 shows that the models generally fit the data well as the fit indices exceeded the critical level of .90. The only exception is the RMSEA value ( $> .08$ ) for the stability model (M1) and the reversed causation model (M3). The chi-square difference test between the models indicated that the reciprocal model provided a significant better fit to the data than the stability model (M4 vs. M1), the reversed causality model (M4 vs. M3), but has a comparable fit to the normal causality model (M4 vs. M2). The reciprocal model can only be justified when it has a better fit than all three other models and is more parsimonious than the alternatives (Farrell, 1994).

As this was not the case, the reciprocity model was rejected in favor of the normal causality model. We estimated a final model by eliminating from the normal causality model the one causal path that was not statistically significant. Comparison of the final, more parsimonious, model to the original normal causality model (M5 vs. M4) did not show significant improvement in fit. Standardized parameter estimates for this final model are displayed in Figure 5.3.

We hypothesized that performance-based self-esteem and the enough continuation rule predict exhaustion over time (Hypothesis 4 and 5, respectively). Since performance-based self-esteem at T1 did not significantly influence exhaustion at T2, Hypothesis 4 was not supported. In addition, T1 enough continuation rule was positively related to T2 exhaustion ( $\beta = .13, p < .05$ ). In other words, Hypothesis 5 was confirmed by our data. Altogether, these results partly support the direct relationship between cognitive antecedents and exhaustion over time.

The enough continuation rule showed a direct lagged effect on exhaustion, which is a precondition for the role of workaholism as a partial mediator in the relationship with exhaustion. Nevertheless, as outlined above, of both workaholism components, working excessively was not related to exhaustion over time, and hence, does not satisfy this necessary condition. Therefore, only working compulsively appears to partly mediate the relationship between the enough continuation rule and exhaustion. An estimation of the mediational effect is given by multiplying the standardized estimates of the path linking the enough continuation rule and working compulsively ( $\beta = .11$ ) with that of the path linking working compulsively and exhaustion ( $\beta = .23$ ) (Cole & Maxwell, 2003), yielding an effect of .03. A one-tailed Sobel test indicated that this indirect effect is significant ( $z = 1.79, p < .05$ ), hence supporting the existence of a mediation effect.

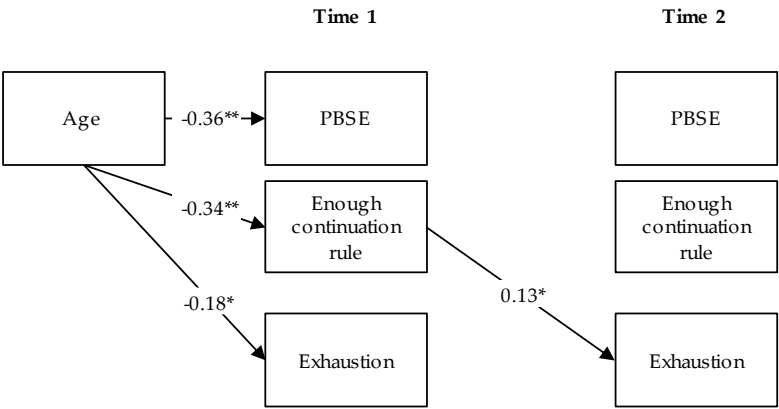


Figure 5.3. Final direct effects model of statistically significant cross-lagged associations between cognitive antecedents and exhaustion; \*  $p < .05$ , \*\*  $p < .001$ .

#### 5.4. Discussion

The main purpose of the present study was to examine long-term relationships between cognitive antecedents (i.e., performance-based self-esteem and an enough continuation rule), workaholism and exhaustion. Prevailing work suggests that workaholism might be preceded by maladaptive cognitions (McMillan et al., 2003), but research demonstrating this is nonetheless scarce. It was therefore hypothesized that cognitive antecedents, such as having a performance-based self-esteem, and using an enough continuation rule (continuing working in order to do enough), would be precursors of workaholism (Hypothesis 1 and Hypothesis 2, respectively), which, in turn, would lead to exhaustion over time (Hypothesis 3). In order to substantiate this mediation, we also hypothesized that these cognitive antecedents would be related to exhaustion over time (Hypotheses 4 and 5).

We found that striving for self-validation is indeed important in the workaholism process. It was found that having such a contingent self-esteem promotes a compulsive drive to work as measured with a 6-month time lag. Performance-based self-esteem was, however, not related to the tendency to work excessively hard. In other words, performance-based self-esteem is related to the cognitive, but not to the behavioral component of the workaholic phenomenon. The finding supports the notion that deriving self-esteem from external sources, such as performance at work, is a vulnerable basis for self-esteem (Crocker & Wolfe, 2001) as it may be predictive of a compulsive work drive, which is also labeled as the “tendency towards becoming a workaholic” (Taris et al., 2008, p. 162). It could also be argued that the observed effect is domain specific: a cognitive evaluation of self (self-esteem) leads to a cognition that encourages hard work (compulsion).



Moreover, these results underline the central role of the cognitive component, rather than the behavioral component, in workaholism (Schaufeli, Taris, & Bakker, 2006).

In addition, the results provided evidence for the assumption that relying on an enough continuation rule fosters workaholism in the long run. Application of an enough continuation rule was found to stimulate employees to work compulsively and incessantly. So, apparently using a cognitive rule does not only influence the cognitive element of workaholism, but also the corresponding behavior. In addition, the current study shows that the enough continuation rule and a compulsive work drive are reciprocally related. In other words a dynamic psychological process seems to exist, in which the enough continuation rule and workaholism mutually reinforce each other. Continuing because not enough work is done stimulates employees to work compulsively and excessively, and at the same time, working compulsively drives employees to work until they feel that they have done enough. These findings confirm and elaborate the results of an earlier cross-sectional study that found that the enough continuation rule is associated with workaholism (Chapters 2 and 3). The current study illustrates the reciprocal nature of this association.

A possible explanation for the finding that performance-based self-esteem and the enough continuation rule are related to workaholism might be that usually workaholics are perfectionists; that is, they pursue high standards of performance (Flett & Hewitt, 2002). Several studies have found that perfectionism is associated with higher levels of workaholism (Burke, Davis, & Flett, 2008; Killinger, 2006; Spence & Robbins, 1992). In a recent study of Taris et al. (2010), the relationship of workaholism with two specific forms of perfectionism was examined, i.e. self-oriented perfectionism and socially prescribed perfectionism (Hewitt & Flett, 1991). Self-oriented perfectionism involves a person's belief that striving for perfection is important and is characterized by holding high standards for oneself. Socially prescribed perfectionism comprises the belief that perfectionist standards are held by others for oneself, and that approval by others is dependent upon meeting these standards. The results of the study of Taris et al. showed that self-oriented perfectionism was unrelated to workaholism, whereas socially prescribed perfectionism was associated with high levels of workaholism. This may indicate that performance-based self-esteem and the use of an enough continuation rule both reflect the concern over not being perfect in the eyes of others (socially prescribed perfectionism).

The association between working compulsively and exhaustion corroborates prior cross-sectional research (Schaufeli et al., 2008; Taris et al., 2008). More specifically, the results clearly indicate a mutual influence between working

compulsively and exhaustion. This reciprocal relationship possibly creates “loss cycles” in which one is strengthening the other, as suggested by the COR theory (Hobfoll, 2002). Such a vicious cycle would imply that working compulsively gives rise to feelings of exhaustion, which, in turn, will evoke a strong compulsive drive. To our knowledge, the lagged effect of exhaustion on working compulsively has not been demonstrated before. However, it has been put forward before that exhaustion causes a compulsive drive over time. For instance, experimental studies show that fatigue may lead to rigidity in performing task behavior (Van der Linden, Frese, & Meijman, 2003; Van der Linden, Frese, & Sonnentag, 2003). Rigid behavior is distinguished by reduced cognitive flexibility and an increased inclination to persevere. Under fatigue, people tend to use automatic regulatory processes to guide actions or ideas, which are likely to result in rigid work behavior.

No significant lagged effect was observed of working excessively on exhaustion. Hence, the expected association between excess work behavior and severe fatigue observed in the earlier studies (Van Der Hulst, 2003) was not replicated. Perhaps, this may point to a sleeper effect, which is sometimes found in stressor-strain relations (Frese & Zapf, 1988), and has also been suggested to occur for burnout (Maslach, 1998). A sleeper effect implies that instead of immediately leading to strain (exhaustion), a particular stressor (working excessively) exhibits a delayed effect which manifests itself after some time has elapsed. It seems plausible that in order to detect the effect of working hard on strain, longer time lags than 6 months are needed. On the whole, little is yet known about the optimal length of time lags in occupational health research (Dormann & Zapf, 2002; Taris & Kompier, 2003). Nevertheless, Dormann and Zapf (2002) showed in their study on the effect of social stressors on depressive symptoms that the strongest effects were found for a 2-year interval, in comparison to a shorter or longer time lag. This could be an indication that a 6-month time lag is too short an interval to demonstrate the expected effects. A related mechanism that could explain the lacking relationship between excess work and workaholism is the accumulation-threshold model (Garst, Frese, & Molenaar, 2000). According to this model, only after stressors exceed a certain threshold, long-term strain becomes visible. This could indicate that working excessively contributes to exhaustion over time, but this only becomes apparent when a certain threshold or “breaking point” has been reached. More elaborated longitudinal study designs will be needed to be able to demonstrate such a threshold.

Remarkably, a lagged positive effect of exhaustion on working excessively was found. According to the Effort-Recovery theory (Meijman & Mulder, 1998), fatigued workers must invest additional compensatory effort to keep performing adequately at work. That is, in order to maintain adequate performance regardless

of exhaustion, tired workers may work longer hours than non-exhausted workers. It might also imply that employees who are exhausted will be frequently absent, which will cause them to work even harder when present at work.

Altogether, we found support for the partial mediation effect leading from the enough continuation rule through working compulsively to exhaustion over a 6 months study period. This seems to confirm the idea that workaholism partly carries the influence of cognitions (i.e., the enough continuation rule) to exhaustion. This is consistent with previous studies that have found positive associations between the enough continuation rule and workaholism (Chapters 2 and 3), and between workaholism and burnout (Andreassen et al., 2007; Burke, 1999c; Taris et al., 2005; Taris et al., 2008). However, these studies used a cross-sectional design and did not examine mediation including antecedents and consequences of workaholism. In line with COR theory (Hobfoll, 2002), our findings imply that when an employee tends to continue when feeling that not enough work has been done, this may foster a compulsive work drive and further increasing emotional exhaustion. Nevertheless, considering the reciprocal relationships between these variables, working compulsively may also be a partial mediator in the relationship between exhaustion and the enough continuation rule, again pointing to a possible “loss cycle”.

#### *Strengths and limitations*

With some exceptions (e.g., Burke, 1999b, 2001; Burke & Koksall, 2002; Mudrack, 2004; Ng et al., 2007; Spence & Robbins, 1992), relatively little research has focused on cognitive antecedents in studies of workaholism. The major strengths of the present study is its longitudinal nature and the testing of various competing longitudinal models that reflect different patterns of causality. Nevertheless, the current study has also a number of weaknesses. Firstly, although our sample includes multiple occupations, it is limited to one department of a university. In order to be able to generalize the findings to other types of jobs and employees, our results need to be replicated with other samples. In addition, the sample is not large, which constraints the possibilities of complex analysis of the data. Simultaneously analyzing the variables to enhance our understanding of the dynamics of relationships would have made the model too complex and could have resulted in unstable estimates (Kline, 2005). With a larger sample, more complex models could have been tested to arrive at stable parameter estimates.

Secondly, our study is based on self-reports, which can be subject to problems of reliability. For instance, self-ratings may increase the risk inflated relationships due to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, considering the nature of the variables it seemed

appropriate to obtain ratings from individuals' self-report. Perceptions of cognitions, workaholism and burnout are subjective by their very nature and should therefore be assessed by self-reports. In addition, Spector (2006) has argued that the impact of common method variance has been largely overrated. Nonetheless, to reduce the potential influence of common method variance, future research might add more objective measures of the dependent variables, such as observers' ratings of individuals' work behavior. Still, objective measures have other limitations, for instance that only the behavioral (overt) aspects can be assessed.

A final limitation concerns the scale that is used for the measurement of excessive working. Items of this scale refer to, for instance, continuing to work after co-workers have finished, which may not be applicable to the current sample. Academics often have highly autonomous jobs, which enables them to arrange their work in a flexible way, for instance, by working at home. Therefore, the academic staff in the current sample might not be able to compare their work hours to the working time of their colleagues. This may also account for the lacking effect of performance-based self-esteem on working excessively and of working excessively on exhaustion.

#### *Implications and suggestions for future research*

The results of this study are of practical importance to HR managers and career counselors as it gives insight into the cognitive precursors of workaholism and its energy costs. This insight may help them to better support employees in handling work demands. Knowledge workers, such as academics, typically have open-ended jobs, making it more difficult for employees to quit working (Lewis, 2010). The current study shows that being vulnerable for beliefs such as "having to do as much as possible in order to feel worthwhile", evidently puts employees at risk for workaholism and exhaustion. This awareness can help professionals to effectively deal with the issue of work addiction and thereby stimulating a healthy commitment to a career among employees. More specifically, as a result of basing one's sense of self-worth and work persistence on one's performance, workaholics may have developed the habit of taking on more work than they can actually cope with. Therefore, time management training could be successfully used to reduce workaholism. Such programs help employees to set realistic goals and to delegate responsibility, so that they can better cope with their work stress.

Our results further suggest that for employees who are prone to workaholism, interventions which focus on changing rigid cognitions might be effective. Chen (2006) already suggested using Rational Emotive Behavior Therapy (REBT) as developed by Ellis (1962) to replace maladaptive beliefs of workaholics

for rational thinking. Ellis (1962) originally identified seven irrational beliefs. However, following research has distinguished four categories of irrational beliefs (Walen, DiGiusppe, & Dryden, 1992): (1) demandingness, which refers to absolute ideas of how oneself or others should behave, (2) awfulizing/ catastrophizing, which stands for the beliefs that a situation is awful, unbearable, and horrible, (3) low frustration tolerance, which represents the intolerance for discomfort, difficulties and frustration, and (4) global evaluation, which includes overgeneralizations about the world, others or the self. Performance-based self-esteem and the enough continuation both refer to a demand about oneself, which makes it likely that they fall under the first category. However, these two constructs may also be a reflection of low frustration tolerance at work. Future research should address this unresolved issue. Altogether, more insight in the role of irrational beliefs might be useful for organizing our knowledge of workaholism, but also offers a theoretical basis for intervention for workaholics.

Since the current study shows that a workaholic drive is associated with burnout (exhaustion) over time, and burnout also appears to be a vulnerability factor for workaholism, it is crucial for organizations to monitor workaholism (Burke & MacDermid, 1999). It implies that HR professionals should stimulate employees to disengage and recuperate from a demanding workday, as it calls upon their energy resources (Sonnentag & Zeijlstra, 2006). Without adequate recovery, continuous depletion of resources will result in strain reactions, such as exhaustion (Geurts & Sonnentag, 2006). Another important aspect of the present study is the finding that excessive work does not inevitably have unfavorable consequences for one's level of exhaustion; the association between working excessively and exhaustion was not significant. An interesting topic for future research would seem to examine the relationship between workaholism and severe fatigue more closely using multiple time waves in order to uncover the underlying process. In this respect, it would be interesting to look at the potential buffering role of recovery experiences (psychological detachment, relaxation, mastery experiences).

### *Conclusion*

In sum, rigid personal beliefs, such as performance-based self-esteem and continuing to work until one feels that one has done enough, may be seen as vulnerability factors for workaholism. Furthermore, being obsessed with one's work leads to exhaustion, which, in its turn, seems to reinforce workaholic behavior. For maintaining a healthy work style, it seems therefore important to realize when enough is enough.



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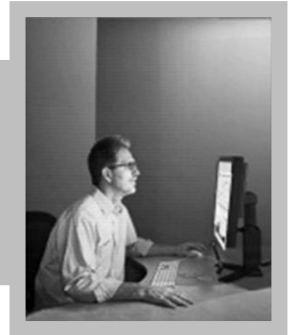
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# CHAPTER 6



## **Rise and shine** *Recovery experiences of workaholic and non-workaholic employees*

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## 6.1. Introduction

In recent years, work intensity has increased in Europe and in the US, meaning that many employees are facing a high work pace, tight deadlines, and insufficient time to complete their work (European Foundation for the Improvement of Living and Working Conditions, 2010). However, working hard is no problem as long as employees can recover from the effort spent at work. Sufficient recovery is an essential prerequisite for employee well-being (Sluiter, Frings-Dresen, van der Beek, & Meijman, 2001; Sonnentag, Binnewies, & Mojza, 2010). There are indications that workaholics have difficulties with recovering from work. Typically, workaholics have relatively few opportunities to recuperate from their demanding workday, which is exemplified by the fact that they suffer from work-to-family conflict and from feelings of exhaustion (Taris, Schaufeli, & Verhoeven, 2005). Due to their compulsive drive to work excessively hard (Schaufeli, Taris, & Bakker, 2008), workaholics spend much time and energy at work, leaving little time for doing other things and thus they neglect their need for recovery. The goal of the present study is to gain a better understanding of the recovery process among workaholics. More specifically, we examine the role that negative emotions play in daily recovery experiences of workaholics versus non-workaholics. Negative emotions can have an impact on an employee's behaviors and well-being (Brief & Weiss, 2002). Earlier research has shown that workaholic employees tend to experience more negative emotions than their non-workaholic counterparts (Burke & Matthiesen, 2004). It has been suggested that workaholics attempt to cope with their negative feelings by working excessively (Porter, 1996), which distinguishes them from non-workaholics. We therefore examine emotions as antecedents and outcomes of daily recovery experiences among workaholics and non-workaholics. For this purpose, we use a within-person daily diary approach that covers five consecutive workdays.

### *Workaholism*

Ever since Oates (1968) coined the term "workaholism", a debate continues about its origin and definition. For instance, some suggest that workaholism can be attributed to a combination of certain personality traits (Mudrack, 2004), whereas others think of it as learned addictive behavior (Porter, 1996). Most consensus exists about the notion that workaholics invest a considerable amount of time and energy to work (Harpaz & Snir, 2003; Scott, Moore, & Miceli, 1997; Spence & Robbins, 1992). However, not every employee who works hard is a workaholic; people may work hard for various reasons, such as deadlines and economical necessities (Taris et al., 2005; Ng, Sorensen, & Feldman, 2007). So, apparently it is not the number of hours they work, but their attitude towards work that distinguishes workaholics from non-workaholics (Machlowitz, 1980). Apparently, workaholics do not work

excessively because they enjoy their job, but rather because they feel they *have to* (Van Beek, Hu, Schaufeli, Taris, & Schreurs, 2011). Furthermore, based on the Mood-as-Input (MAI) model (Martin, Ward, Arce, & Wyer, 1993), it can be assumed that workaholics work so hard because they use particular persistence rules for deciding on how long to continue with their work. Applied to the work setting, the MAI model, which was originally used in clinical psychology to explain compulsive behaviors, assumes that people intuitively use personal persistence rules when they are faced with task-related demands. Individuals may decide to continue working as long as they enjoy the task at hand ("enjoyment rule"), or until they feel that they have done enough ("enough rule"). Recently, Van Wijhe, Peeters, and Schaufeli (Chapters 2 and 3) showed that workaholism is particularly associated with using the "enough" rule. This means that workaholics continue working because they constantly feel that they have not done enough yet, thereby ignoring the fact whether they like it or not. It seems that they have an inner drive that pushes them to work hard (Taris, Schaufeli, & Shimazu, 2010).

According to the review of Scott et al. (1997), workaholics are characterized by three aspects: (1) They tend to work long hours; (2) they frequently think about work, even when not at work, suggesting that they are obsessed with work; and (3) they work beyond what is reasonably expected from them, in order to meet organizational or economic requirements. As the final feature seems an extension of the first, Scott et al. actually seem to distinguish between a behavioral component (excess work) and a cognitive (work compulsion) component in workaholism. In a more recent review, Ng et al. (2007) state that workaholism is indeed characterized by cognition and behavior, but also by affect. Ng et al. typified workaholics as those who are obsessed with working, commit long hours to work, and enjoy the *act* of working (but not the work itself). However, Porter (2001, p. 151) wrote earlier that "joy in work is not a part of workaholism viewed as an addiction". Correspondingly, Mudrack (2006) argued that although some workaholics may enjoy their work, it does not make enjoyment a core component of work addiction. For that reason, in accordance with Schaufeli, Taris, & Bakker (2008), we perceive work enjoyment as being an independent psychological phenomenon, called work engagement, which can be discriminated from workaholism (Taris et al., 2010). In general, workaholism is linked with negative outcomes, whereas work engagement is associated with positive outcomes (Schaufeli, Taris, & Van Rhenen, 2008, Shimazu & Schaufeli, 2009). That is why we consider workaholism as inherently undesirable and work engagement as essentially desirable (Schaufeli, Taris, & Bakker, 2008). Altogether, we agree with the notion that workaholism is a combination of a behavioral and a cognitive component, and therefore define



workaholism as “an irresistible inner drive to work excessively hard” (Schaufeli, Taris, & Bakker, p. 219).

As this definition states, workaholism is related to working long hours and to overtime work (Schaufeli, Bakker, Van der Heijden, & Prins, 2009). The greater the amount of time spent at work, the less time is left for performing other roles (e.g., being a mother or partner). Although it is hard to draw conclusions about causality, this may be the reason for workaholics to experience work-to-family conflict (Bonebright, Clay, & Ankenman, 2000) and poor relationship quality (Bakker, Demerouti, & Burke, 2009). In addition, the compulsive work behavior of workaholics is associated with poor health and well-being, such as subjective health complaints and exhaustion (Andreassen, Ursin, & Eriksen, 2007), low levels of happiness (Schaufeli, Bakker et al., 2009) and high levels of distress (Schaufeli, Taris, & Van Rhenen, 2008). In conclusion, it seems that workaholics allocate an excessive amount of time and energy to their work at the expense of having time for recovery.

#### *Recovery from work*

The Effort-Recovery Model (Meijman & Mulder, 1998) suggests that work effort draws upon one's resources, which in turn may cause strain reactions. Under optimal circumstances, these strain reactions, such as fatigue and negative mood, are reversible. However, if no adequate recovery takes place, acute stress-related load reactions do not return to pre-stressor levels (Geurts & Sonnentag, 2006). In order to maintain a satisfactory performance level, the employee has to invest compensatory effort at the expense of psychological and physiological costs, thus imposing an extra demand on the recovery process (Hockey, 1997). Continuous exposure to high work demands and incomplete recovery may cause an accumulation of load reactions. This accumulative process hampers the recovery process, ultimately leading to chronic health impairment (Geurts & Sonnentag, 2006).

Adequate recovery typically leads to a restoration of depleted resources, such as an improved mood and higher energy levels (Sonnentag & Bayer, 2005) and a decrease in physiological strain (Geurts & Sonnentag, 2006). In order to recover, employees may engage in different types of leisure activities such as low effort activities (e.g., watching television), social activities (e.g., meeting friends), or physical activities (e.g., cycling) (Sonnentag, 2001). The mechanisms contributing to recovery are called *recovery experiences* and include psychological detachment from work, relaxation, and the experience of mastery and control during leisure time (Sonnentag & Fritz, 2007). The first two experiences – psychological detachment and relaxation – are linked with the Effort-Recovery Model, because they imply that no additional demands are imposed on one's resources that are called upon during

work (Siltaloppi, Kinnunen, & Feldt, 2009). Therefore, in the current study, we specifically focus on these two mechanisms. Psychological detachment from work refers to the ability of individuals to mentally “switch off” from work (Sonnentag & Bayer, 2005) by not doing work-related tasks and not thinking about work during non-work time (Sonnentag et al., 2010). Relaxation refers to feeling calm and peaceful, and is commonly related to reduced physical activation, for instance a decreased heart rate or lower muscle tension (Smith, 2005).

#### *Emotions and recovery from work*

Research shows that inadequate recovery impairs mood (e.g., Sonnentag & Bayer, 2005; Totterdell, Spelten, Smith, Barton, & Folkard, 1995). However, very little research has addressed the role of emotions as antecedents of recovery. Since emotions may fluctuate from day to day (Miner, Glomb, & Hulin, 2005), we suggest that they may also be important for daily recovery experiences. First of all, we argue that for some individuals negative emotions may impede recovery. Negative emotions are usually sparked by an evaluation that an event is a threat or causes harm to personally relevant goals (Lazarus, 1991; Schwarz, 1990). As a consequence, people are inclined to change their bad mood into a better one (Isen, 1984). However, people use different strategies for changing negative emotions. For instance, some individuals might try to regulate their negative emotions by indulging in relaxing activities, whereas others keep busy (Gross, 1998; Thayer, Newman & McClain, 1994). In a work context, this might imply that some employees who experience work-related negative emotions may engage in relaxing activities at home, such as taking a bath or listening to music, whereas others may stay mentally or physically involved in work. As a result of their increased work involvement, the latter group might recover less. We expect that this mechanism specifically applies to workaholics. First, the MAI model (Martin et al., 1993) postulates that mood offers information for applying the “enough rule” that workaholics use as their norm for deciding on how long to continue working (Chapters 2 and 3). Since workaholics typically ask themselves whether they have done enough (i.e., applying the enough rule), a negative affective state may be interpreted as dissatisfaction with their performance and will stimulate them to remain behaviorally and mentally engaged in work tasks. Second, due to their competitive nature (Scott et al., 1997), workaholics feel anxious when they are deprived from competition during non-work time. Furthermore, when having time off work, workaholics experience feelings of guilt (Spence & Robbins, 1992) and exhibit withdrawal symptoms (Porter, 1996). In other words, they feel uncomfortable not working. In order to escape their negative emotions, they stay mentally engaged in their work and may even “create” extra work during their

hours off (Porter, 1996; Schaufeli, Shimazu, & Taris, 2009). However, by doing so, they further deplete their energy resources (Muraven & Baumeister, 2000). Therefore, we expect that negative emotions may cause workaholics to spend more time on work-related activities, and to have relatively fewer recovery experiences, after their regular workday is over than non-workaholics. In other words, negative emotions may have more detrimental effects on recovery for workaholics than for non-workaholics.

Furthermore, we aim to demonstrate that recovery experiences during the evening are important for improving emotions the next morning. Using a weekly diary, Sonnentag, Mojza, Binnewies and Scholl (2008) showed that psychological detachment during the workweek was related to both higher levels of positive emotions as well as to lower levels of negative emotions at the end of the workweek. In another study, it has been shown that the experience of psychological detachment during the evening is negatively related to next morning's negative emotions (Sonnentag, Binnewies, & Mojza, 2008). Since, to date, the latter study is unique in using daily diaries, we aim to replicate this general finding in a sample which includes hard working employees.

To summarize, we hypothesize that workaholics recover less than non-workaholics, both on a general (i.e., baseline) level as well as on a daily level (H1). Furthermore, we hypothesize that, when controlling for previous day's level of time spent on work, *negative* emotions at the end of the workday are *positively* related to time spent by workaholics on work-related activities during the evening. For non-workaholics we do not expect this relationship (H2). In addition, we hypothesize that, when controlling for previous day's level of recovery, *negative* emotions at the end of the workday are *negatively* related to workaholics' recovery experiences during the evening, whereas for non-workaholics we do not expect this relationship (H3). Finally, after controlling for the level of *negative* and *positive* emotions of the previous day, respectively, evening recovery experiences are hypothesized to be *negatively* related to next morning's *negative* emotions (H4) and *positively* related to next morning's *positive* emotions (H5).

## 6.2. Method

### *Participants and procedure*

Data were collected from two samples of employees using an online questionnaire. The first sample consisted of employees of one faculty of a large Dutch university. In order to make sure that we would be able to include (also) participants with high scores on workaholism, a large sample of 726 staff members was approached for participation in a general study on working conditions. Three hundred and forty staff members responded (47%) by completing a questionnaire (Sample 1). The

second sample (Sample 2) was a convenience sample that was recruited through a newspaper article on working exceptionally hard. Altogether, 691 employees responded by filling in a short questionnaire. To decrease the possible confounding impact of working hours on the relationships between emotions and recovery experiences, employees who worked less than 32 hours a week were removed from further analysis both in Samples 1 and 2, resulting in samples of 248 and 471 employees, respectively. These two samples were combined for the subsequent analyses ( $n = 719$ ).

Next, from this large sample, a subsample consisting of workaholics and non-workaholics was selected. For this purpose, cut-off scores were used based on the percentile scores of a large sample of the Dutch labor force ( $N = 11,060$ ) (Schaufeli, Van Wijhe, Peeters, & Taris, 2011) on two subscales of the Dutch Work Addiction Scale (Schaufeli, Shimazu et al., 2009), that is, working compulsively (WC) and working excessively (WE). Participants were either categorized as having low ( $\leq 25^{\text{th}}$  percentile), average ( $26^{\text{th}} - 74^{\text{th}}$  percentile), or high ( $\geq 75^{\text{th}}$  percentile) levels on both workaholism scales. Participants high on working compulsively *and* high on working excessively were classified as workaholic. The workaholic group ( $n = 40$ ) and a randomly selected group of non-workaholics (low or average scores on working compulsively and working excessively) ( $n = 139$ ) were approached by email for taking part in the diary study. Ultimately, 30 workaholics and 88 non-workaholics consented, yielding response rates of 75% and 63%, respectively. Participants were not informed of the exact purpose and inclusion criteria of the diary study. They were told that the study was concerned with working hard and its relationship with wellbeing.

Analyses showed that for Sample 1, participants ( $n = 49$ ) did not differ significantly from the group that refused participation ( $n = 54$ ) with regard to age ( $F(1, 101) = 0.11, p = .74$ ), gender ( $\chi^2(1) = 0.00, p = .98$ ), negative emotions ( $F(1, 101) = 0.17, p = .68$ ), positive emotions ( $F(1, 101) = 0.00, p = .97$ ), recovery experiences ( $F(1, 101) = 0.98, p = .35$ ) and workaholism ( $F(1, 101) = 0.02, p = .90$ ), indicating that the groups were comparable in terms of demographics and all study variables. Considering that for Sample 2 the majority of the selected employees agreed to participate (91%), it was not possible to check for selective non-response, but at the same time not very likely to be a bias in our data.

The final diary sample consisted of 62 males (52.5%) and 56 females (47.5%), with a mean age of 41.6 years ( $SD = 10.5$ ). More than two thirds (70.9%) of the sample was married or living with a partner. Participants worked on average 45.6 ( $SD = 8.9$ ) hours per week, including overwork. In terms of job tenure, participants worked on average 5.1 years ( $SD = 4.4$ ) in their current job. A majority of the participants (60.2%) held at least a bachelor's degree. In Sample 1, 89.1% was

part of the scientific staff, whereas 10.9% was administrative support staff. Sample 2 consisted of participants working in a wide range of jobs (e.g., management assistants, consultants and engineers).

Participants received instructions for completing the paper diaries either face-to-face or by telephone. They were invited to fill out the diary for five consecutive days (Monday to Friday), three times a day: (1) before work, (2) at 6.00 pm (the end of a regular workday) and (3) in the evening right before going to bed. Digital reminders were sent to participants around each diary moment. After 5 days, all participants returned the diaries. Altogether, participants completed a total of 590 daily diaries.

### *Measures*

#### *Baseline measures*

For creating a workaholic and a non-workaholic group, *baseline workaholism* was measured with the Dutch version (Schaufeli et al., 2011) of the short Dutch Work Addiction Scale (Schaufeli, Shimazu et al., 2009). The first scale is Working Compulsively (WC; five items,  $\alpha = .83$ , an example item is "I feel that there's something inside me that drives me to work hard"). The second scale is Working Excessively (WE; five items,  $\alpha = .73$ , an example item is "I overly commit myself by biting off more than I can chew"). The WC scale is derived from the Drive scale of the Workaholism Battery (WorkBat; Spence & Robbins, 1992), whereas the WE scale is based on the Compulsive Tendencies scale of the Work Addiction Risk Test (WART; Robinson, 1999). Both scales were rated on a 4-point scale (1 = "(almost) never", 4 = "(almost) always"). Using the procedure described earlier, two groups were created (0 = non-workaholic group, 1 = workaholic group).

*Baseline negative and positive emotions* were measured with two scales of the Job-related Affective Well-being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000) in its shortened Dutch version (Schaufeli & Van Rhenen, 2006). *Baseline negative emotions* were measured using seven negative affect items ( $\alpha = .85$ , e.g., "During my work, I feel angry"). One item ("guilty") was added to the original six-item scale, because of its importance for workaholism (Ng et al., 2007). *Baseline positive emotions* were assessed with six positive affect items ( $\alpha = .88$ , e.g., "During my work, I feel enthusiastic"). The participants responded to a 5-point Likert scale (1 = "(almost) never", 5 = "(almost) always").

*Baseline work hours* were measured by the item "How many hours per week do you work on contract?".

*Baseline recovery experiences* were measured by the scales Relaxation and Psychological Detachment from the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). These scales were strongly correlated ( $r = .62$ ), which also has been

found in an earlier study (Siltaloppi et al., 2009). Due to this high correlation, a combined scale consisting of eight items was used ( $\alpha = .88$ , e.g., “I use the time to relax”). The participants responded to a 5-point Likert scale (1 = “do not agree”, 5 = “totally agree”).

#### *Day-level measures*

For the daily measures, a selection was made of items of the baseline measures based on face validity and on consensus decisions among the authors. In order to fit a daily diary design, these items were transformed into short items that were easy to comprehend and that measured states instead of traits.

*End-of-workday negative emotions* were measured using five items: “anxious”, “angry”, “depressed”, “discouraged” and “guilty” ( $\alpha = .84$ ). All items originate from the Job Affective Well-being Scale (JAWS; Van Katwyk et al., 2000), with the exception of “guilty”. Individuals were instructed to indicate the extent to which they felt each particular emotion “right now”.

*Evening recovery experiences* were measured with four items derived from the original four-item subscales Relaxation and Psychological Detachment of the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007), which have been adapted for use in a diary study (Sonnetag, Binnewies et al., 2008). The items are: (1) “Tonight, I distanced myself from my work”, (2) “Tonight, I got a break from the demands of work”, (3) “Tonight, I kicked back and relaxed” and (4) “Tonight, I used the time to relax” ( $\alpha = .88$ ). The first two items refer to psychological detachment, whereas the last two items refer to relaxation. The selection of the items was based on face validity.

For *evening work-related activities*, just before going to sleep, participants were asked to report the hours that they had spent on work after 6 p.m. during the same day, including working at home or preparing for the next working day. On average, participants engaged for about 0.73 hours ( $SD = 1.19$ ) in work-related activities during the evening.

*Morning negative emotions* were assessed using the same items as were used for end-of-workday negative emotions. *Morning positive emotions* were assessed using five items: “at ease”, “energetic”, “happy”, “enthusiastic”, and “relaxed”. The reliabilities for morning negative and morning positive emotions were .83 and .87, respectively. Individuals were instructed to indicate the extent to which they felt each particular emotion “right now”.

*Sleep quality* was assessed in the morning survey with one single item: “Last night, I slept well”. This item was derived from the Sleep Quality scale of Van Veldhoven and Meijman (1994). It was slightly adjusted to make it suitable for day-to-day measurement.

All day-level variables were scored on a 7-point scale (1 = “not at all”, 7 = “to a great extent”).

#### *Data analyses*

In order to test Hypothesis 1, we conducted separate Analyses of Variance (ANOVA's) with trait level and day level recovery experiences as dependent variables, respectively. Given the multilevel nature of our data, because days (Level 1; within person variance) are nested in employees (Level 2; between person variance), we used multilevel modeling with MLwiN software (Rasbash, Browne, Healy, Cameron, & Charlton, 2000) for testing Hypotheses 2 to 5. Multilevel models correct for hierarchical structures, and thus for interdependence of observations, that is due to repeated measurements of individuals. The person-level variables were centered on the grand mean, which is the mean of the whole sample, whereas the day-level variables were centered on the person mean, which is the mean of the individual. To avoid multi-collinearity and estimation difficulties, we centered the group variable on the grand mean (Cohen, 2003).

In our multilevel analyses, we controlled for day of the week (ranging from 0 = Monday to 4 = Friday), gender (0 = male, 1 = female), sample (0 = Sample 1, 1 = Sample 2) and age. Furthermore, we controlled for the baseline level and for the previous day's ratings of the outcome variable involved. This allowed us to investigate daily fluctuations around the baseline of an individual and to examine an individual's daily changes in scores, respectively. Since sleep quality has been found to predict morning affect (Sonnentag, Binnewies et al., 2008), we also controlled for the impact of sleep quality in these specific analyses.

In order to test Hypotheses 2 to 5, we started by calculating an intercept-only model (Null model). Next, in Model 1, we entered control and baseline variables. In Models 2 and 3, we entered those variables central to our hypotheses. That is, for predicting evening recovery experiences and work-related activities, we included the group variable (0 = non-workaholic and 1 = workaholic) and end-of-workday negative emotions in Model 2, and in Model 3, we included the interaction term of negative emotions by group (Hypothesis 3). For predicting morning negative and positive emotions, we entered previous day's level of evening recovery experiences in Model 2 (Hypotheses 4 and 5, respectively).

We examined the significance of the parameters and compared the fit of each model to the previous one by calculating the differences between the log-likelihood values using a chi-square test.

### 6.3. Results

#### *Descriptive statistics*

Table 6.1 shows the means, standard deviations, and correlations of all study variables. The majority of these correlations were significant at the  $p < .05$  level.

#### *Workaholics and recovery*

First, we examined whether workaholics scored lower on recovery experiences than non-workaholics (Hypothesis 1). The results of the first ANOVA showed that workaholics had significantly lower scores on trait level recovery experiences ( $M = 2.42$ ,  $SD = 0.58$ ) than non-workaholics ( $M = 3.32$ ,  $SD = 0.51$ ;  $F(1, 116) = 65.30$ ,  $p < .001$ ). A second ANOVA using aggregated data showed that workaholics also scored significantly lower ( $M = 4.16$ ,  $SD = 1.12$ ) on day level recovery experiences than non-workaholics ( $M = 4.88$ ,  $SD = 0.90$ ;  $F(1, 116) = 12.65$ ,  $p = .001$ ). Therefore, Hypothesis 1 was confirmed.

#### *Preliminary multilevel analyses*

Compared to a one-level model, the two-level model with days nested within persons produced a significantly better model fit for work-related activities ( $\Delta -2 \log = 25.32$ ,  $df = 1$ ;  $p < .001$ ), recovery experiences ( $\Delta -2 \log = 36.98$ ,  $df = 1$ ;  $p < .001$ ), morning negative emotions ( $\Delta -2 \log = 194.59$ ,  $df = 1$ ;  $p < .001$ ), and morning positive emotions ( $\Delta -2 \log = 197.48$ ,  $df = 1$ ;  $p < .001$ ). In other words, the two-level model, that takes into account the hierarchical structure of the data, is superior to a single level model. In order to determine to what extent employees showed day-to-day fluctuations on these variables, the within-person variance was calculated. It was shown that 21.2% of the variance in work-related activities, 25.7% of the variances in recovery experiences, 41.0% of the variances in morning negative emotions, and 59.4% of the variance in morning positive emotions was accounted for by within-person variability. All in all, it can be concluded that the use of multilevel analysis is justified.

#### *End-of-workday negative emotions and evening work-related activities*

Table 6.2 presents the results of multilevel analyses on evening work-related activities. Model 1 (control model) fitted the data better than the Null model. Weekday was significantly related to evening work-related activities, suggesting that as the week unfolds, less time is spent on evening work-related activities. It is furthermore demonstrated in Model 2 that, when controlling for previous day's



level of work-related activities<sup>3</sup>, negative emotions are positively related to time spent on work-related activities. This indicates that when feeling relatively high levels of negative emotions at the end of the day, our participants spent more time on work-related matters during the evening.

We expected that the relationship between negative emotions at the end of the workday and work-related activities should be particularly strong for workaholics (vs. non-workaholics) (Hypothesis 2). In line with our expectations, Model 3 indicates a significant interaction between negative emotions and group on evening work-related activities. This interaction is plotted in Figure 6.1. In order to test the two-way interaction, a simple slope test was conducted (Aiken & West, 1991). The examination revealed that for workaholics, experiencing relatively more negative emotions was positively related to spending more time on work-related activities ( $\gamma = 0.40$ ;  $SE = 0.09$ ,  $t = 4.39$ ;  $p < .001$ ), whereas for non-workaholic employees, negative emotions were *not* significantly related to time spent on work-related activities ( $\gamma = 0.05$ ;  $SE = 0.08$ ;  $t = 0.66$ ;  $p = ns$ ). Hence, Hypothesis 2 was confirmed. Model 3 demonstrates that the variables accounted for 9% of the within-person variance and 3% of the between-person variance in evening work-related activities.

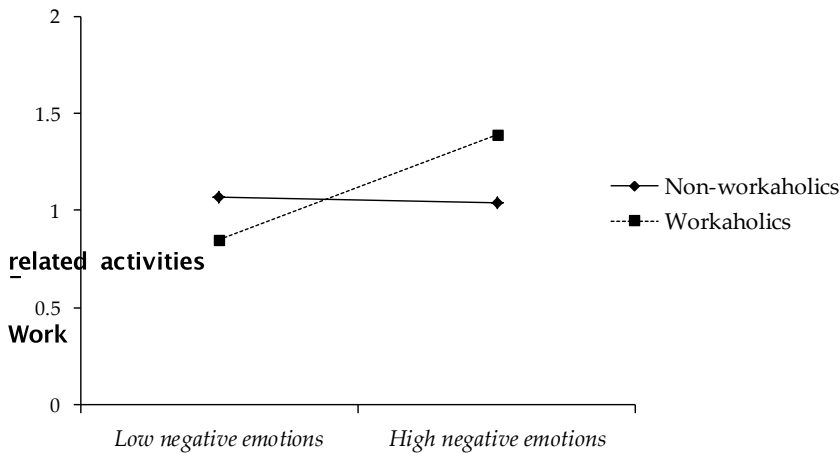


Figure 6.1. Interaction effect of group in the relationship between end-of-workday negative emotions and evening work-related activities.

<sup>3</sup> In all four analyses, the previous day's levels showed significant negative effects on the outcome variable. This seems to be indicative of a slight negative suppressor effect that should not be interpreted theoretically.

Table 6.1. Means, standard deviations and correlations between study variables

	Total ( <i>n</i> = 118)		Non-WA ( <i>n</i> = 88)		WA ( <i>n</i> = 30)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>										
1. Baseline work hours	37.32	3.95	37.92	3.09	35.52	5.46	–									
2. Baseline recovery experiences	3.09	0.66	3.32	0.51	2.42	0.58	.17	–								
3. Baseline negative affect	2.18	0.68	1.97	0.61	2.79	0.53	-.12	-.39	–							
4. Baseline positive affect	3.72	0.64	3.89	0.56	3.22	0.62	.11	.34	-.69	–						
5. End-of-day negative emotions	1.83	0.78	1.63	0.57	2.42	1.00	-.18	-.31	.53	-.41	–					
6. Evening work-related activities	0.73	1.11	0.73	1.13	0.72	1.06	-.09	-.02	-.06	.00	-.06	–				
7. Evening recovery experiences	4.70	1.00	4.88	0.90	4.16	1.12	.14	.42	-.46	.44	-.41	-.29	–			
8. Sleep quality – day-level	5.20	1.14	5.39	1.10	4.65	1.07	.14	.32	-.26	.19	-.26	-.04	.29	–		
9. Morning negative emotions	1.74	0.77	1.50	0.52	2.43	0.95	-.22	-.37	.59	-.45	.90	-.06	-.42	-.30	–	
10. Morning positive emotions	4.94	0.92	5.20	0.78	3.08	0.88	.10	.38	-.55	.55	-.62	-.01	.47	.49	-.70	–

*Note.* Day-level data is averaged across 5 days;  $r \geq .19$  are significant at  $p < .05$ ,  $r \geq .26$  are significant at  $p < .01$ ,  $r \geq .33$  are significant at  $p < .001$ ; *M* = mean, *SD* = standard deviation; non-WA = non-workaholics, WA = workaholics.

Table 6.2. Multilevel estimates for models predicting evening work-related activities ( $n = 118$  employees)

	Null model			Model 1			Model 2			Model 3		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	0.57	0.06	8.95***	1.10	0.16	6.83***	1.12	0.16	6.88***	1.06	0.16	6.45***
Time (weekday)				-0.17	0.04	-4.28***	-0.17	0.04	-4.36***	-0.17	0.04	-4.15***
Sample				-0.15	0.14	-1.08	-0.18	0.15	-1.17	-0.15	0.15	-1.00
Gender				-0.31	0.23	-1.31	-0.03	0.14	-0.18	-0.03	0.14	-0.22
Age				0.01	0.01	0.86	0.01	0.01	1.00	0.01	0.01	1.00
Baseline work hours				-0.03	0.02	-1.67	-0.03	0.03	-1.10	-0.03	0.02	-1.42
Previous day work related activities				-0.15	0.05	-2.92***	-0.14	0.05	-2.72**	-0.14	0.05	-2.78**
End-of-day negative emotions (End-NE)							0.16	0.08	1.96*	0.13	0.08	1.61
Group							0.09	0.16	0.58	-0.02	0.17	-0.11
Group x End-NE										0.30	0.12	2.48*
-2* log	1392.76			1352.47			1332.52			1326.48		
Diff -2*log				40.29**			19.95***			6.05**		
<i>df</i>	1			6			2			1		
Level 1 variance (SE)	0.94	0.07		0.89	0.07	5.75%	0.87	0.07	7.45%	0.85	0.07	9.05%
Level 2 variance (SE)	0.25	0.07		0.24	0.06	3.17%	0.24	0.06	4.76%	0.25	0.06	2.78%

Note. Null model = the intercept is the only predictor; model 1 (M1) = null model + control variables, model 2 (M2) = M1 + day-level and trait-level predictors, model 3 (M3) = M2 + cross-level interaction; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; time: 0 = Monday to 4 = Friday; sample: 0 = Sample 1, 1 = Sample 2; gender: 0 = male, 1 = female; group: 0 = non-workaholics, 1 = workaholics.

*End-of-workday negative emotions and evening recovery experiences*

Table 6.3 shows the results of the analysis with evening recovery experiences as dependent variable. It was found that the fit to the data of Model 1 (control model) was significantly better than that of the Null model. Day of the week and gender were significantly related to recovery experiences, indicating that the level of recovery experiences increases as the week progresses and that women recover more effectively than men. Results further show that baseline recovery experiences were positively related to evening recovery experiences. Model 2, which included the main effects, showed a better fit to the data than Model 1. When controlling for previous day's level of recovery experiences, negative emotions at the end of the workday were negatively related to employees' recovery experiences in the evening. That is, the more negative emotions, the fewer recovery experiences an individual reported. We anticipated that the negative relationship between negative emotions at the end of the workday and evening recovery experiences would be more pronounced for workaholics than for non-workaholics (Hypothesis 3). Model 3 indeed showed a significant interaction between negative emotions and group on evening recovery experiences, which is displayed in Figure 6.2. Again, a simple slope test was conducted to examine the interaction (Aiken & West, 1991). Results indicated that for workaholics, negative emotions were negatively related to recovery experiences ( $\gamma = -0.62$ ;  $SE = 0.11$ ,  $t = 5.43$ ;  $p < .001$ ). For non-workaholic employees, negative emotions were much less strongly, but still significantly related to recovery experiences ( $\gamma = -0.21$ ;  $SE = 0.10$ ;  $t = -2.14$ ;  $p < .05$ ). Therefore, Hypothesis 3 was partly supported. Altogether, Model 3 showed that the variables explained 9% of the within-person variance and 28% of the between-person variance in evening recovery experiences.

*Evening recovery experiences and morning emotions*

Tables 6.4 and 6.5 present the results of multilevel analyses of morning negative and positive emotions. Model 1 (control model) demonstrated significant improvement over the Null model for both morning negative emotions and morning positive emotions. Baseline negative affect was a significant predictor of morning negative emotions, whereas baseline positive affect was significantly related to morning positive emotions. In other words, the baseline levels are relevant for both negative and positive emotions in the morning. Finally, sleep quality negatively predicted morning negative emotions, indicating that poor sleep quality results in higher levels of morning negative emotions. Sleep quality was positively related to morning positive emotions, indicating that good sleep quality predicts higher levels of morning positive emotions.

Table 6.3. Multilevel estimates for models predicting evening recovery experiences ( $n = 118$  employees)

	Null Model			Model 1			Model 2			Model 3		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	4.75	0.09	52.15***	4.04	0.22	18.69***	4.03	0.21	18.83***	4.12	0.22	19.08***
Time (weekday)				0.16	0.05	2.96**	0.15	0.05	2.96**	0.15	0.05	2.94**
Sample				0.16	0.18	0.85	0.16	0.19	0.87	0.14	0.19	0.75
Gender				0.45	0.18	2.48*	0.45	0.18	2.46*	0.43	0.18	2.36*
Age				0.02	0.01	1.78	0.01	0.01	1.56	0.01	0.01	1.44
Baseline recovery experiences				0.63	0.13	4.82***	0.56	0.16	3.52**	0.53	0.16	3.31***
Previous day recovery experiences				-0.11	0.06	-1.93	-0.10	0.05	-1.93	-0.11	0.05	-2.04*
End-of-day negative emotions (End-NE)							-0.35	0.11	-3.25**	-0.31	0.11	-2.93**
Group							-0.19	0.24	-0.77	-0.09	0.24	-0.37
Group x End-NE										-0.41	0.16	-2.63**
-2* log	1647.82			1594.29			1576.72			1569.84		
Diff -2*log				53.52***			17.57***			6.88**		
<i>df</i>	1			6			2			1		
Level 1 variance (SE)	1.63	0.01		1.57	0.12	3.50%	1.52	0.12	6.94%	1.49	0.11	8.72%
Level 2 variance (SE)	0.56	0.13		0.40	0.11	29.31%	0.40	0.11	28.95%	0.41	0.11	27.89%

Note. Null model = the intercept is the only predictor; model 1 (M1) = null model + control variables, model 2 (M2) = M1 + day-level and trait-level predictors, model 3 (M3) = M2 + cross-level interaction; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; time: 0 = Monday to 4 = Friday; sample: 0 = Sample 1, 1 = Sample 2; gender: 0 = male, 1 = female; group: 0 = non-workaholics, 1 = workaholics.

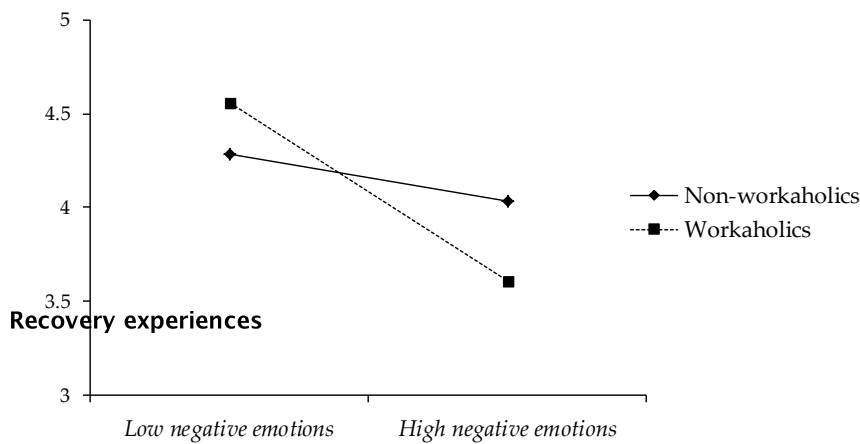


Figure 6.2. Interaction effect of group in the relationship between end-of-workday negative emotions and evening recovery experiences.

Hypothesis 4 predicted that recovery experiences during the evening are negatively related to subsequent morning negative emotions (see Table 6.4). Model 2 (full model), that included evening recovery experiences as a predictor of next day's negative emotions, showed a better fit to the data than Model 1. Thus, recovery experiences during the evening were negatively related to negative emotions in the morning; the more recovery experiences in the evening the fewer negative emotions the next morning. Therefore, Hypothesis 4 was supported. Moreover, Model 2 showed that the control and predictor variables explained 11% of the within-person variance and 39% of the between-person variance in morning negative emotions.

Finally, Hypothesis 5 asserted that recovery experiences during the evening are positively related to morning positive emotions (see Table 6.5). Model 2 (full model), with morning positive emotions as dependent variable, and evening recovery experiences as a predictor, fitted the data significantly better than the previous Model 1. A significant main effect of recovery experiences during the previous evening on morning positive emotions was shown; the more recovery experiences in the evening, the more positive emotions the next morning. Therefore, Hypothesis 5 was confirmed. Furthermore, the control and predictor variables explained 22% of the variance on the within-person level and 29% of the variance on the between-person level in morning positive emotions.

Table 6.4. Multilevel estimates for models predicting morning negative emotions ( $n = 118$  employees)

	Null Model			Model 1			Model 2		
	Estimate	SE	$t$	Estimate	SE	$t$	Estimate	SE	$t$
Intercept	1.74	0.07	24.83***	1.78	0.12	14.69***	1.77	0.12	14.65***
Time (weekday)				-0.03	0.02	-1.04	-0.03	0.02	-1.04
Sample				-0.03	0.12	-0.24	-0.03	0.13	-0.24
Gender				0.05	0.13	0.42	0.06	0.13	0.47
Age				-0.01	0.01	-1.67	-0.01	0.01	-1.67
Baseline negative affect				0.64	0.09	7.27***	0.64	0.09	7.28***
Previous day morning negative emotions				-0.14	0.05	-2.75**	-0.15	0.05	-3.06**
Sleep quality (daylevel)				-0.12	0.03	-4.26***	-0.11	0.03	-4.22***
Previous evening recovery							-0.06	0.03	-2.48*
-2* log	1057.23			934.43			918.30		
Diff -2*log				122.80***			16.13***		
$df$	1			7			1		
Level 1 variance (SE)	0.34	0.03		0.31	0.02	8.72%	0.31	0.02	10.47%
Level 2 variance (SE)	0.50	0.08		0.30	0.05	39.60%	0.30	0.05	39.39%

Note. Null model = the intercept is the only predictor, model 1 (M1) = null model + control variables, model 2 (M2) = M1 + day-level predictor; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; time: 0 = Monday to 4 = Friday; sample: 0 = Sample 1, 1 = Sample 2; gender: 0 = male, 1 = female.

Table 6.5. Multilevel estimates for models predicting morning positive emotions ( $n = 118$  employees)

	Null Model			Model 1			Model 2		
	Estimate	SE	$t$	Estimate	SE	$t$	Estimate	SE	$t$
Intercept	4.95	0.08	61.88***	4.91	0.49	10.01***	4.91	0.15	32.73***
Time (weekday)				-0.02	0.03	-0.65	-0.02	0.03	-0.67
Sample				0.13	0.16	0.86	0.13	0.16	0.81
Gender				-0.06	0.16	-0.39	-0.06	0.16	-0.38
Age				0.00	0.01	0.13	0.00	0.01	0.00
Baseline positive affect				0.75	0.12	6.38***	0.74	0.12	6.17***
Previous day morning positive emotions				-0.13	0.05	-2.63**	-0.14	0.05	-2.80**
Sleep quality (daylevel)				0.23	0.03	7.80***	0.23	0.03	7.67***
Previous evening recovery							0.07	0.03	2.33*
-2* log	1220.24			1051.45			1037.38		
Diff -2*log				168.79***			14.07***		
$df$	1			7			1		
Level 1 variance (SE)	0.49	0.04		0.38	0.03	21.24%	0.38	0.03	22.27%
Level 2 variance (SE)	0.71	0.11		0.49	0.08	30.32%	0.50	0.08	29.48%

Note. Null model = the intercept is the only predictor, model 1 (M1) = null model + control variables, model 2 (M2) = M1 + day-level predictor; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; time: 0 = Monday to 4 = Friday; sample: 0 = Sample 1, 1 = Sample 2; gender: 0 = male, 1 = female.



#### 6.4. Discussion

The aim of the current study was to examine the role of negative emotions in the recovery experiences of workaholics versus non-workaholics. It was hypothesized that workaholics, when in a negative emotional state at the end of the workday, would spend more time on work during the evening than non-workaholics. It was also predicted that workaholics, when feeling bad at the end of the workday, would recover less than non-workaholics during the evening. The findings mainly support our predictions. When workaholics experienced negative emotions at the end of the workday, they spent relatively more time on work and had fewer recovery experiences during the evening. For non-workaholics, negative emotions at the end of the workday had no impact on the time spent on work-related activities, and showed less influence on their recovery experiences later that evening than for workaholics. Finally, we found that when employees (both workaholics and non-workaholics) recovered during the evening, they felt more recovered the next morning as indicated by higher levels of positive emotions and lower levels of negative emotions, beyond the effect of sleep quality.

Taken together our findings imply that negative emotions felt at the beginning of the evening stimulates engagement in work-related activities and hampers the recovery experiences during the remaining evening, especially for workaholics. It seems that negative emotions have a different meaning for workaholics than for non-workaholics as they lead to less effective recovery strategies. Given that workaholics continue working because they often feel that they have not done enough yet (Chapters 2 and 3), they may respond more intensively to negative emotions, because for them these emotions signify that they did not complete enough work. A logical consequence is that workaholics spend additional hours working (Porter, 1996), which, in its turn, interferes with their recovery. According to the Effort-Recovery Model, inadequate recovery of work can lead to long term health impairment (Geurts & Sonnentag, 2006; Meijman & Mulder, 1998). We extended this model by showing that negative emotions can be an impeding factor in effective recovery for workaholics. In addition, the end-of-workday negative emotions of non-workaholics do not seem to relate strongly to recovery during the evening, nor do they relate to work-related practices. Non-workaholics also experience negative emotions at the end of the workday, but may feel less threatened by these feelings. Alternatively, they might feel stimulated by their negative emotions to withdraw from work and engage in additional activities, other than work, to regulate their emotions. As a result, non-workaholics may disengage more easily from work when in a bad mood, and hence recover better. Remarkably, in the present study, workaholics and non-workaholics do not seem to differ with regard to the number work hours. This may be explained by the fact that

working long hours is a necessary, but not a sufficient hallmark of workaholism; people work long hours for a variety of reasons (Brett & Stroh, 2003; Douglas & Morris, 2006), such as earning enough money to meet one's needs or avoiding stress associated with family life. It is the combination of working excessively and compulsively that defines workaholism (Schaufeli, Taris, & Bakker, 2008).

The finding that recovery experiences during the evening are related to a decrease in negative emotions and an increase in positive emotions the next morning emphasizes the importance of strategies to replenish resources during the evening. This result is roughly in line with earlier findings that demonstrated a relationship between evening recovery experiences (psychological detachment) and next's morning negative emotions (Sonnentag, Binnewies et al., 2008). A novel finding of our study is that daily recovery experiences are related to general levels of positive emotions the next morning. In the study of Sonnentag et al. it was found that, rather than detachment or relaxation, mastery experiences and sleep quality predicted next morning's active positive emotions (e.g., "alert", "excited"). In addition, they demonstrated that relaxation was related to next morning's serenity, which is a specific positive affective state characterized by low arousal (e.g., "calm," "relaxed"). However, the current results indicate that recovery experiences essentially contribute to next morning's general level of positive emotions. More specifically, we found that recovery experiences predict next morning's negative and positive emotions beyond the effect of sleep quality. In other words, sleep quality is important for recovery, but there seem additional ways to recover in terms of positive and negative emotions.

All in all, our results show that workaholics spent more time on work and have fewer recovery experiences during the evening when feeling negative emotions at the end of the workday than non-workaholics. In line with the Effort-Recovery Model (Meijman & Mulder, 1998), this suggests that especially workaholics find it difficult to mentally and physically abstain from work demands when being in a bad mood. Furthermore, a lack of recovery experiences during the evening, in its turn, leads to incomplete recovery, suggesting that feelings of complete relaxation and detachment are important for replenishing one's resources. In other words, workaholics may put themselves at risk for resource loss because their negative emotions hamper investment in new resources by means of recovery experiences.

#### *Strengths, limitations, and suggestions for future research*

A strong point of the current study is that it provides insight into how within-person processes influence daily recovery processes of workaholics in contrast to non-workaholics. Compared to between person-studies, within person studies on

workaholism are scarce (cf. Snir & Zohar, 2008; 2008; Bakker, Oerlemans, & Sonnentag, 2012 for exceptions). Another important strength of our study is that all analyses were adjusted for the linear effect of consecutive days on the outcome variables. Also, in order to account for third variables that influence both predictor and outcome variables (e.g., stable individual-differences), we controlled for baseline levels and previous day's level of the outcome variable, which were generally found to be important in predicting the outcome variables. Despite this rather conservative strategy of controlling for a wide range of variables, the hypothesized associations remained, thus demonstrating the robustness of the effects.

Another interesting feature of the current study is that "real" workaholics (i.e., those with high scores on the workaholism scale) were contrasted with non-workaholics (i.e., those with average or lower scores on workaholism). Instead of using a median split, cut-off points that are based on a national sample were used to identify real workaholics. This allowed us to straightforwardly examine how workaholics and non-workaholics differ with regard to affective variables, time spent on work-related activities and recovery experiences. A problem with this method is that it may increase the likelihood of regression to the mean (Preacher, Rucker, MacCallum, & Nicewander, 2005). Despite this tendency, however, our study produced significant results in the expected direction.

An important limitation of the current study is that it does not address the root causes of the end-of-workday emotions for workaholics. However, it was demonstrated that for workaholics negative emotions at the end of the workday predict time spent on work-related activities and recovery experiences, thereby explicitly demonstrating the consequences of negative emotions. Nonetheless, future research on the origin of negative emotions among workaholics could provide interesting insights.

A second point of potential concern is that the use of only self-reports may have biased the results due to common method variance (CMV), which could have led to artificially inflated relationships between variables (e.g., response styles) (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, Siemsen, Roth, and Oliveira (2010) show that CMV is less problematic in more complex estimations that entail multiple independent variables. When a large number of measured variables is included, as in our study, common method bias in regression slope estimates decreases and is ultimately eliminated. Moreover, Siemsen et al. demonstrate that finding significant interaction effects in the data set should be considered as strong evidence that an interaction effect actually exists, since CMV rather causes a deflation of the estimated interaction effect. Finally, at the suggestion of Podsakoff et al., to reduce potential method bias, we separated the measurement of the

predictor and criterion variables by administering diary questionnaires at different time points during the day. Altogether, we therefore do not expect that method bias had a profound impact on the results of this study.

A final limitation is that, although we found support for the assumption that negative emotions cause workaholics to spend more time on work and hamper their daily recovery experiences, the study does not specifically show *how* emotions operate in this process. For example, it does not answer questions like “Do negative emotions particularly prompt workaholics to ruminate about work?”. Workaholism has been linked to neuroticism (Andreassen, Hetland, & Pallessen, 2010) and rumination about work (Snir & Zohar, 2008). We cannot account for the fact that neuroticism or worry might explain the lack of recovery for workaholics. We also did not examine what other activities, besides work, people exactly performed during the evening that facilitated or hindered the recovery experiences. Additional research that takes into account rumination, off-job activities, as well as recovery experiences is needed to better understand how negative emotions impede recovery experiences for workaholics.

An interesting direction for future research is to compare the recovery process of workaholics to that of work engaged employees. There is accumulating evidence that the underlying psychological mechanisms that drive these two types of employees differ fundamentally (cf. Van Beek, Hu et al., 2011). Whereas in the present study it was found that negative emotions hamper recovery experiences for workaholics, it is possible that negative emotions facilitate recovery experiences for work engaged employees. In an earlier study (Chapter 3), it was demonstrated that, in contrast to workaholics, work engaged employees typically use an “enjoyment rule” to determine work perseverance, meaning that they continue as long as they enjoy working. Seen from this perspective, negative emotions may act as a signal for work engaged employees that they no longer enjoy their work anymore, denoting that it is time to quit. In addition, it would be interesting to examine the effect of work engagement on recovery experiences for workaholics. A study of Van Beek, Taris, and Schaufeli (2011) shows that work engagement buffers against the adverse effects of workaholism on burnout. Apparently, work engagement renders workaholics less vulnerable for inadequate recovery from work. Future diary research may examine these assumptions by including a subsample of engaged employees, or at least a measure of work engagement.

A related topic for further elaboration is the conceptualization of workaholism in general. In our view, by defining workaholism as having an irresistible inner drive to work excessively hard, we returned to the origin of the concept: workaholism as a negative obsessive work pattern (Oates, 1968). Still, we agree that it would be interesting to examine how the different conceptualizations

of workaholism relate to each other. Future research could include other validated measures of workaholism, such as the Workaholism Battery (WorkBAT; Spence & Robbins, 1992) and the Work Addiction Risk Test (WART; Robinson, 1999).

#### *Implications for practice*

Our results may have relevant implications for practitioners. Since negative emotions relate to perseveration with work-related activities and hamper recovery experiences for workaholics, it seems important to find ways for effectively regulating and reducing negative emotions for workaholics. Elsewhere, we argued that the basic tenets of the Rational Emotive Behavior Therapy (REBT; Ellis, 1995) may be useful for the treatment of workaholics by health professionals (Chapter 7). REBT can be used to uncover the irrational beliefs that underlie the workaholics' negative emotions, and to teach how to counteract maladaptive emotions and irrational cognitions. Relaxation training is another cognitive-behavioral method that might be helpful to workaholics as it increases awareness of tension and helps them to undo their negative emotions by stimulating positive feelings (Chen, 2006). Finally, time management training could help workaholics to gain conscious control over their time schedule by setting realistic goals and prioritizing tasks, so that they can better decide when it is time to stop working at the end of their workday.

In conclusion, the current chapter highlights the importance of negative emotions for the work behavior and associated recovery of workaholics. Studies on the affective experiences of workaholics are in short supply and usually employ retrospective reports of mood. Therefore, it is interesting to examine recovery processes of workaholics from a daily perspective, using reports of momentary recovery experiences. For now, it seems that experiencing negative emotions at the end of the workday may be an important obstacle for workaholics to distance themselves from work and recover during the evening which prevents them from rising and shining the next morning.



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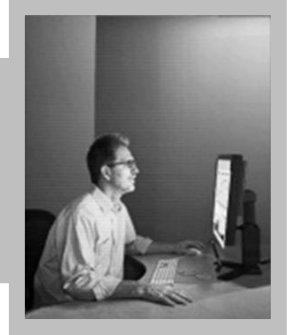
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# CHAPTER 7



## Treating workaholism

*Setting the stage for  
successful interventions*

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## 7.1. Introduction

The increasing flexibility in work schedules and continued rise in teleworking facilitate the possibilities to work long hours. As a result, some employees work extreme overtime. Although a well-known saying states that “hard work has never killed anyone”, several studies show that an excessive working style may cause physical health problems, such as hypertension and an increased body mass index (Wada et al., 2006), diabetes and cardiovascular disease (Van der Hulst, 2003). In Japan, mention has been made of the occurrence of sudden death due to overwork, which is called *karoshi* (Kanai, 2009). In other words, extreme work behavior can, in fact, have negative or even fatal consequences. Working extremely long hours may well be a sign of workaholism (Peiperl & Jones, 2001). Workaholics spend a lot of their time at work, and do more work than is expected of them.

However, not all people who work extremely hard are inevitably workaholics. People may work long hours for various reasons, such as in order to advance one's career, to pay the mortgage, or to escape an unhappy marriage. Rather, in the case of workaholism, it is a strong inner drive that urges individuals to work long hours (Oates, 1971). Workaholics typically think much about their work and feel guilty when not at work (Scott, Moore, & Micelli, 1997). Overall, workaholism is characterized by a behavioral (excessive work) and a cognitive component (compulsion), that is, workaholics “feel a strong inner drive to work compulsively hard” (Schaufeli, Taris, & Bakker, 2008). As they have relatively little time left for life outside work, relationships with family and friends are neglected (Bakker, Demerouti, & Burke, 2009). Workaholics do not allow themselves enough time to recover from strenuous activities at work and consequently their health suffers (Chapter 5). For instance, workaholics are at risk for physical and emotional exhaustion (Andreassen, Ursin, & Eriksen, 2007; Burke, 1999b; Taris, Schaufeli, & Verhoeven, 2005; Taris, Geurts, Schaufeli, Blonk, & Lagerveld, 2008).

Although working compulsively hard is acknowledged as a problem, and several suggestions have been made for intervention (Berglas, 2004; Burwell & Chen, 2002, 2008; Chen, 2006; Killinger, 1991; Seybold & Salomone, 1994; Vodanovich & Piotrowski, 2006), there are no evidence-based interventions available yet to prevent or cure workaholism. One of the reasons is that professionals face several obstacles in the treatment of workaholism. These obstacles may be overcome by the use of online intervention. The purpose of this chapter is to present an overview of possible strategies to prevent or treat workaholism. Before embarking on this endeavor, we will first elaborate on the difficulties related to preventing or treating workaholism. Furthermore, the usefulness and development of an online training program for workaholism is

described. The chapter closes with some conclusions that may guide the quest for effective and efficient strategies to reduce workaholism.

*Why is it difficult to combat workaholism?*

There are at least four reasons that make it difficult to prevent or treat workaholism. First, in contrast to many other addictions, work addiction does not refer to a particular substance abuse (e.g., illicit drugs, alcohol) but to a particular behavior (i.e., work). Whereas complete abstinence is a rather obvious solution in the case of substance addiction, evidently stopping work entirely is not an option for work addicts (Robinson, 2001). This means that it is difficult to conceive what “abstinence” should look like for workaholics.

Second, it has been claimed that workaholism is a well-dressed addiction (Robinson, 2001). That is, workaholism is “just” an excess of something (i.e., work) that is considered to be a key virtue in most societies that is firmly rooted in religious beliefs and, unlike alcoholism, drug abuse, or gambling, it is not related to criminal behavior (McMillan, O’Driscoll, Marsh, & Brady, 2001). This means that the social pressure to be treated is less strong for workaholism than for substance-related addictions.

Third, Porter (1996) has suggested that workaholics are largely in denial of their problem and that this constitutes the main obstacle for identifying and treating them. Tellingly, Porter and Herring (2006) observed that workaholics are referred to counseling not for their excessive work behavior as such, but for its consequences (e.g., impaired social functioning or difficulties with delegating). Alternatively, Ishiyama and Kitayama (1994) posit that workaholic clients are likely to be recruited for counseling through medical services, since workaholics are probably more willing to seek help for health-related complaints than for their disturbed work patterns. Seeking medical assistance would be experienced as less threatening by work addicts than seeking psychological support. This might indicate that an indirect approach that focuses on the negative consequences of work addiction would be more feasible, but probably not more effective in the long run, compared to a direct approach that focuses on the work addiction itself.

A final obstacle in the treatment of workaholics is rather obvious: because of the very nature of work addiction, workaholics do not have time for counseling or treatment; they are always working. This means that strategies for reducing workaholism should not be time-consuming. Taken together, these four difficulties suggest that successful strategies for preventing or treating workaholism should:

- focus on setting realistic and attainable goals;
- enhance the workaholic’s awareness of the problem, and that something should be done about it;

- directly focus on the excessive work behavior itself, as well as indirectly on the consequences of work addiction;
- not be too time-consuming.

### *Principles for intervention*

McMillan, O'Driscoll, & Burke (2003) describe five traditional perspectives on workaholism; addiction perspective, trait theory, learning theory, cognitive theory and family system theory. To what extent do these theoretical notions provide useful ingredients for successfully understanding and thus preventing workaholism? It is important to note that most theoretical perspectives still await empirical testing, so that the recommendations below are preliminary and should be treated with caution.

- Interventions should address *reinforcing behavior*. Learning theory views workaholism as the product of rewarded behavior. Hence, interventions to prevent or to treat workaholism should target rewarding, appropriate behaviors rather than inappropriate, excessive work behavior.
- Interventions should focus on *maladaptive beliefs*. Cognitive theory assumes that workaholism is rooted in flawed thinking; thus, treatment needs to focus on changing workaholics' maladaptive thought patterns (cf. Chapter 4).
- Interventions should not only focus on the workaholic himself, but also on the *social environment*. From a learning theory perspective, the maladaptive behaviors of workaholics are reinforced by the work environment, whereas from the family theory paradigm workaholism is a response to maladaptive family functioning. Therefore, treatment of workaholism should also focus on rearranging the workaholic's work- and family environment.

Altogether, learning theory and the cognitive paradigm both supply a theoretical and a practical approach to intervention. Therefore, an integration of cognitive and learning theory may be most promising for the intervention of workaholism.

## **7.2. Prevention of workaholism**

The traditional distinction between primary, secondary, and tertiary prevention (Murphy, 1988) can be used to categorize the occasional suggestions that have been made in the literature about the prevention of workaholism. The aim of *primary* prevention is to reduce the risk of workaholism among healthy, non-workaholic employees; the aim of *secondary* prevention is to train a group that is at risk of workaholism to deal with possible triggers that may exacerbate work addiction; and, finally, the aim of *tertiary* prevention is to minimize the negative effects of workaholism as much as possible. Because the difference between tertiary

prevention and treatment is often blurred, we will discuss tertiary preventive measures in greater detail in the next section about treatment. Although various ideas on how to prevent workaholism exist (Poppelreuter, 2006), there is virtually no research on this topic, so unfortunately we cannot draw upon any empirical evidence of the effectiveness of preventive measures.

### *Primary prevention*

Despite the fact that workaholics work hard out of an inner compulsion, their work environment may play an important role in stimulating their work addiction as well. Burke (1999a) found, for instance, that in comparison to non-workaholics, workaholics worked in organizations that were less supportive of maintaining a healthy work-life balance. It cannot be ruled out, though, that workaholics may be attracted to organizations that favor hard work over a healthy work-life balance. Typically, the excessive amount of effort and energy that workaholics put into their work is usually viewed positively by the organization and its representatives, especially executives, managers, and supervisors. In other words; workaholics are acknowledged and rewarded for their excessive work behavior, which is line with the learning paradigm that was discussed above. The obtained rewards, in terms of praise, career promotion, bonuses, salary increase, admiration, or positive attention, confirm the perception of workaholics of being a “special” person who is greatly needed and appreciated by the organization. It also strengthens the workaholic’s association between working excessively hard and their level of self-worth in such a way that their self-worth becomes dependent on their extreme working patterns.

Conversely, organizations may also contribute to the prevention of workaholism, for instance, by changing the organizational culture. Instead of cultivating the “heroism” of working hard, no matter the costs, organizations may emphasize the importance of a sound work-life balance by setting clear boundaries between work and leisure. For instance, employees can be discouraged from working at home in the evenings and at weekends by closing access to e-mail accounts, or by emphasizing, and communicating that the work can and should be done within normal working hours. Moreover, studies show that a so-called supportive work-family culture that is, the extent to which the organization, direct supervisors, and colleagues are perceived to be supportive of the integration of employees’ work and private lives and the utilization of work-home arrangements (Dijkers, Geurts, Den Dulk, Peper, & Kompier, 2004), is related to less burn-out and more work engagement (cf. Peeters, Watez, Demerouti, & de Regt, 2009). Alternatively, employee reward systems may be redesigned in such a way that working smart, rather than working hard, is rewarded. Furthermore, instead of rewarding their employees particularly for extra-role behaviors, organizations



might want to reward them more for their in-role performance.

A change of culture as described above is only effective, however, when management practices what it preaches, because the behavior of leaders has a decisive impact on the behaviors of their employees (Podsakoff, MacKenzie, & Bommer, 1996). Executives, managers, and superiors must therefore set a good example and serve as role models if they want their employees to work in a healthy, non-addictive way (Fry & Cohen, 2009). This is not an easy thing to accomplish because many of them suffer from workaholism themselves (Brett & Stroh, 2003). Moreover, managers may have been promoted into their current jobs because they work so frantically.

Finally, the accessibility and confidentiality of counseling services at work are important for the prevention of workaholism (Ishiyama & Kitayama, 1994). These services should not only focus on work-related matters, but should also cover family issues and problems that are related to employee health and well-being. The reason for this is simple: employees are rarely motivated to seek help for their excessive work behavior, but may contact counseling services for health (Ishiyama & Kitayama) or family problems (Porter & Herring, 2006) that are essentially rooted in their work addiction.

### *Secondary prevention*

From a trait theory perspective, workaholism can be viewed as a set of rather stable personal characteristics that are dispositional in nature. Consequently, by their very nature these characteristics are fairly resistant to change. In addition, workaholic tendencies may be fostered by particular work situations such as highly competitive work environments or unclear role expectations. In such kinds of environments, employees with a certain predisposition for workaholism are encouraged to work excessively hard in order to fulfill the high performance standards or the unclear expectations. To prevent a person-organization mismatch, potential workaholics could, in principle, be identified on the basis of relevant personality factors (e.g., conscientiousness, perfectionism, need for achievement, obstinacy, orderliness, compulsiveness, and rigidity). However, including such traits in a personnel selection procedure might be somewhat preliminary because more research is needed to establish the relation between these traits and workaholic behavioral patterns. To complicate matters even more, some of these traits (such as conscientiousness and need for achievement) are also positively associated with job performance (Judge & Ilies, 2002), and organizations would be reluctant to exclude those job candidates who score highly on these performance-related traits. This is yet another illustration of the ambivalence of organizations vis-à-vis workaholism.

A further example of secondary prevention is to provide specific skills

training programs to employees and their managers. Employees at risk of workaholism take on more work than they can handle and accept new tasks before completing previous ones. Training programs which focus on time management and stress management skills might be helpful here. Such programs encourage employees to set realistic goals and prioritize these goals properly so that they can better cope with high workloads. In addition, employees at risk of workaholism can be trained in personal effectiveness and assertiveness in order to deal adequately with the social demands at work by using such strategies as saying “no” to clients, colleagues or superiors, or holding to their own priorities (Schabracq, 2005). By means of conflict management programs, employees can be taught to deal effectively with interpersonal conflicts at work. Finally, social skills training programs may help employees at risk of developing workaholism to perceive and respond adequately to interpersonal and social cues at work. According to Fligstein (2001, p. 112), social skills refer to “the ability to induce cooperation among others,” a competency that is often lacking among workaholic-prone employees. In other words, training workaholics to use social skills such as making “small talk” or giving compliments, might facilitate a smooth and unproblematic interaction with colleagues which may increase the probability that others will respond approvingly and might therefore enhance the workaholic’s self-esteem.

Furthermore, to prevent workaholism, employees should be encouraged to detach and recover from a hard day’s work (cf. Chapter 6). A demanding work situation increases the need for recovery because it draws on an individual’s resources (Zijlstra, 1996). Successive depletion of resources will result in negative effects, such as fatigue and, eventually, when no recovery occurs, in exhaustion (cf. Chapter 5). Distraction may help employees detach and recover from their work. As workaholics are prone to burn-out (Taris et al., 2008), they should learn to slow down by building in relaxation time such as taking a break, meditating or reading a book (Robinson, 1997).

### *Conclusion*

Primary prevention of workaholism, that is, the reduction of the risk of workaholism among healthy, non-workaholic employees, boils down to changing the organizational culture. In essence, a culture in which employees who work 60-plus hours per week are the “heroes” who are displayed and celebrated as role models should be replaced by a culture which stimulates working smart rather than working hard and which values a healthy work-life balance. This is not an easy thing to accomplish, though, because those who are in charge of that culture change are often work addicts themselves (Brett & Stroh, 2003). In terms of secondary prevention, which focuses on those who are at risk of workaholism, basically two

kinds of strategies may be followed. First, in personnel selection procedures, job candidates may be screened on personality characteristics that make them vulnerable for workaholism, such as conscientiousness, perfectionism, need for achievement, obstinacy, orderliness, compulsiveness, and rigidity. However, for the time being, we would advise against such screening of employees because, apart from the ethical issues involved, more research is needed to establish the links between workaholism and personality factors. This leaves us with the second, more feasible and realistic option: increasing the resilience of those who work in jobs that might foster workaholism by training time-management skills and social skills such as assertiveness and conflict management.

### **7.3. Treatment of workaholism**

Although various forms of individual counseling and treatment of workaholics have been lively debated in the literature (Robinson, 1997, 1998a; Ishiyama & Kitayama, 1994; Vaughn, 1992; Burwell & Chen, 2002), few practical initiatives have been taken, let alone that these have been tested for their effectiveness. Therefore, in this section we will also draw upon studies that deal with other behavioral addictions such as compulsive gambling and buying. Because the motivation to change addictive behavior is an important prerequisite for treating workaholism, we will consider this issue first. Next, we discuss a self-help initiative (Workaholics Anonymous) and a systems approach (family counseling), and then we finally move to interventions that focus on the behavioral and cognitive aspects of workaholism.

#### *Motivational interviewing*

It is well documented that an appropriate motivation is a necessary prerequisite for changing health-related behaviors. More specifically, Miller and Rollnick (1991, p. 19) view motivation as “the probability that a person will enter into, continue, and adhere to a specific change strategy.” A model for understanding how motivation for change can be improved is the Trans Theoretical Model of Change (Prochaska & DiClemente, 1983). This model predicts that individuals progress through 6 different stages of change. According to DiClemente and Prochaska, (1998), these stages are:

1. *Precontemplation*: The person is unaware of the fact that he or she has a problem.
2. *Contemplation*: The individual is willing to think about his or her problem and the consequences this has for themselves or others, but is not ready to commit him- or herself to the change process yet.
3. *Preparation*: The person is intending to take action and formulate concrete plans how he or she will cope with the problem.

4. *Action*: The individual engages in change activities by putting into practice the plans developed in the preparation phase.
5. *Maintenance*: The person will continue commitment to sustaining new behavior.
6. *Relapse*: The individual might experience relapse in terms of resuming the previous, undesired behaviors.

In each stage, individuals have to deal with different issues and tasks, for instance, addressing the ambivalence of changing the behavior. Workaholics are likely to experience some motivational ambivalence because they simultaneously see reasons to change and not to change their excessive work behaviors. In order to involve workaholics successfully in the treatment process, it is crucial to reduce this ambivalence. Motivational interviewing is a client-centered therapeutic technique that helps individuals examine and overcome their ambivalence about behavior change. By expressing empathy, uncovering discrepancies between values and behaviors, sidestepping resistance and supporting self-efficacy, the counselor helps the individual develop greater problem awareness, which may lead to an improved motivation to change (Miller & Rollnick, 1991). So far, brief motivational interventions have been applied to substance-related addictions, such as alcoholism (Brown & Miller, 1993), and substance-unrelated addictions, such as gambling (Hodgins, Currie, Currie, & Fick, 2009). The findings of these studies show that motivational interviewing generally produces the desired behavioral change (see Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010 for an overview). For instance, Hodgins et al. (2009) demonstrated that participants who received brief motivational treatment gambled significantly less often over the first 6 months of the follow-up than workbook only participants. For that reason we expect motivational interviewing to be beneficial for workaholics as well, particularly because workaholics often lack the problem awareness that is necessary if they are to change their behavior.

#### *Workaholics Anonymous*

The best known and probably most widely used treatment program for workaholism is offered by Workaholics Anonymous (WA), which is based on the "Twelve Steps and Twelve Traditions of Alcoholics Anonymous" (Alcoholics Anonymous, 2002). WA has offered its services for more than 30 years and currently has more than 80 so-called meetings in the US and in Europe (see [www.workaholics-anonymous.org](http://www.workaholics-anonymous.org)). When entering the WA program the workaholic progresses through the "Twelve Step" program (e.g., admitting that one's life became unmanageable), practices the "Twelve Traditions" (e.g., by declaring that personal recovery depends on the common welfare of the WA group), and is advised to use the 15 "Tools for Recovery", consisting of listening

and prioritizing, among other things (Workaholics Anonymous, 2006). These tools are regarded as crucial to practicing abstinence. In the WA meetings or with the help of a so-called sponsor (a WA member who is already recovered from working compulsively) abstinence plans are made, including a plan for maintaining personal bottom lines (e.g., “I do not work more than 45 hours per week”) and top lines (e.g., “I will sleep at least eight hours every night”). The meetings provide support in case of relapse. Despite its eminence, the WA treatment program has no clear theoretical foundation; neither has evidence been published on its efficacy for reducing workaholism. Nevertheless, the popular practice of Alcoholics Anonymous suggests that this type of treatment program is effective in reducing addictive behaviors (Krentzman, 2008). Testing the effectiveness of such programs remains a difficult endeavor since, among other things, self-selection could be responsible for the possible treatment effect. In other words, it is to be expected that those who are already motivated to combat their work addiction will volunteer to participate in WA.

#### *Family counseling*

Family counseling has received considerable attention, mainly because of the writings of Robinson (e.g., 1998a, 2000b), and other authors (Ishiyama & Kitayama, 1994; Seybold & Salomone, 1994), who regards changing the family system as the main avenue for treating workaholism. Before implementing an intervention, Robinson (2001) recommends mapping out the workaholic family system. Once this mapping has been done, the counselor should address the communication patterns of family members that maintain the addictive behavior of the workaholic. Next, the counselor assists the family in setting healthy boundaries regarding the time and attention devoted to work. Robinson further suggests that attention must be given to “effective family roles, greater affective responses, more affective involvement, and higher general functioning, all of which characterize the workaholic family system” (2001, p. 133). Unfortunately, except for an occasional case illustration (cf. Robinson, 1998b, 2000a), no empirical research has been carried out on the effectiveness of family or couples’ counseling.

#### *Behavioral intervention strategies*

According to the behavioral perspective (McMillan et al., 2003), workaholism refers to an acquired dysfunctional behavior that, consequently, can be altered through behavioral intervention drawn from learning theories. Behavioral treatments commonly include techniques such as imaginary desensitization (a guided imagery technique founded on the principle that systematic desensitization enables individuals to manage their urges), relaxation training (muscle relaxation to reduce

tension associated with the compulsion), and behavioral monitoring (giving feedback about the individual's behavior). Other elements that we have already discussed as secondary prevention strategies are social skills training, assertiveness training, and problem-solving. Chen (2006) notes that especially in the earlier stages of treating workaholics, so-called cue response techniques, such as imaginary desensitization, may be useful. For workaholics this means that they visualize situations in which they usually work long hours or think about work. Using muscle relaxation techniques simultaneously with this visualization, clients are gradually directed through these visualized situations by the counselor. In fact, the counselor helps the workaholic deal with the induced triggers (i.e., the visualized situations) and concomitant feelings of restlessness. Muscle relaxation is incompatible with the muscle tension that is caused by the induced triggers and feelings of restlessness, and therefore has the potential to override these and thus undo their negative effects.

Although such behavioral interventions have not been evaluated empirically for workaholism, they have been successfully applied to other addictive behaviors, such as gambling (McConaghy, Blaszcynski, & Frankova, 1991). More specifically, McConaghy and his colleagues found that 78 percent of the participants, who were treated with imaginary desensitization, quit gambling or were able to control their gambling compared with 53 percent of the group that was treated with alternative behavioral methods such as aversion therapy (i.e., administering electric shocks to the gambler paired with reading about their gambling behavior in order to eliminate the undesired behavior) and in vivo exposure (i.e., observing others playing at a gambling house without gambling oneself).

An alternative behavioral approach to treating workaholism is to use contingency or reinforcement management. This means systematically rewarding workaholics for desired behaviors, such as, among other things, working fewer hours. We posit that for workaholics effective reinforcement of appropriate work behaviors may be fostered by rediscovering hobbies and redeveloping interests (Oates, 1971). Workaholics must seek alternative ways to enhance their low self-esteem, for instance, by learning to find purpose and meaning in other things than work (Kiechel, 1989). The rationale is simple: being engaged in a hobby or following other interests outside work is incompatible with work; time that is spent on leisure activities cannot be spent at work. Hence, leisure activities by definition reduce workaholism.

#### *Cognitive intervention strategies*

The compulsive thought patterns and distorted core beliefs of workaholics can be

addressed by cognitive therapy (CT) which aims to alter these patterns in order to decrease working excessively and compulsively (cf. Chapter 5). Cognitive therapy should not be confused with cognitive behavioral therapy (CBT). CBT will be addressed in the next section and assumes that cognitions and behaviors are mutually dependent so that both components should be addressed simultaneously (Walker, 2005). In contrast, CT focuses solely on changing the cognitions in order to change mood and behavior,

Circumstantial evidence for the potential effectiveness of cognitive strategies in reducing workaholism can be found in the treatment of other behavioral addictions. For instance, Ladouceur et al. (2001) carried out a randomized controlled study among pathological gamblers to test the effectiveness of a cognitive intervention. The effect of the treatment was compared to the levels of pathological gambling of a waitlist control group. The treatment focused on changing erroneous perceptions about the randomness of winning a bet in gambling, that is, changing gamblers' false belief that they can predict the outcome of a play. The results showed that at the end of the three-month treatment period participants in the treatment met fewer diagnostic criteria of pathological gambling according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994), and reported less desire to gamble than the participants in the waitlist control group. At one-year follow-up, 86 percent of the participants who completed cognitive treatment recovered from their pathological gambling according to the diagnostic criteria of the DSM-IV. Unfortunately, no comparison against the waitlist control group could be made, because this group was offered treatment nine months earlier, after the post-treatment test.

#### *Cognitive-behavioral strategies*

As noted above, cognitive-behavioral interventions focus on changing simultaneously both the cognitive and behavioral components of the addiction. Such interventions combine cognitive intervention strategies (e.g., identifying distressing thoughts) and behavioral intervention strategies (e.g., skill training). Chen (2006) describes how to apply the principles of Rational Emotive Behavior Therapy (REBT; see Ellis 1994, 2000) to workaholism. Rooted in the Cognitive Behavioral Therapy (CBT) tradition, REBT is an approach to counseling that aims to change maladaptive thinking, emotions and behavior. REBT postulates that individuals hold beliefs that are triggered by early childhood experiences as well as consciously learned experiences through interactions with the environment. The fundamental premise of REBT is that these beliefs determine an individual's emotions and behaviors. More specifically, according to Ellis' ABCDE -model which

is central to REBT (1962, 1994), people may encounter *activating events* (A), which trigger rational and irrational *beliefs* (B). These beliefs have emotional, behavioral, and cognitive *consequences* (C). Rational beliefs elicit functional consequences, while irrational beliefs cause disruptive consequences. REBT states that activating events, beliefs and consequences mutually affect each other. For instance, *consequences* (C) can reinforce *beliefs* (B), and can also develop into *activating events* (A) themselves. In REBT, individuals are encouraged to recognize and *dispute* (D) their irrational beliefs and to generate rational beliefs that have a beneficial influence on their *emotional*, cognitive, and behavioral reactions (E) (Ellis, 1962, 1994; Walen, DiGiuseppe, & Dryden, 1992). In other words, the answer to understanding and managing stressful reactions is achieving control over irrational thoughts and replacing them with rational interpretations that promote well-being.

Chen (2006) postulates that workaholism can be treated as a form of cognitive irrational disturbance and proposes several cognitive strategies to decrease workaholism, for instance, to debate irrational beliefs (cf. Chapter 4). This is a therapeutic technique that is used to challenge dysfunctional beliefs. Typically, workaholics may hold irrational beliefs, such as “I am the only person in the department who can do this job” or “When I do not finish my work on time a disaster will happen.” Chen (2006) argues that such irrational beliefs are the root cause of the workaholic’s preoccupation with work. The counselor teaches the workaholic to challenge his own misconceptions by asking himself questions like “Who did this job before I came to the department?” or “What will be the consequence when I miss that particular deadline?” As the workaholic gains insight into his own irrational thinking, the counselor assists him to view the situation from a different perspective. The counselor then teaches the workaholic to replace his previous, wrong, “irrational” thoughts by novel, more “realistic” thoughts and beliefs. This way of dealing with cognitive distortions is called cognitive restructuring (Burwell & Chen, 2002). So, instead of holding the irrational belief that they are the only ones who can do the job or that missing a deadline is an absolute disaster, workaholics might now reason that finishing a particular job is the supervisor’s responsibility and missing a deadline doesn’t cause chaos, but just a small delay in the process.

In addition, Chen (2006) points out that, instead of using words like “ought” and “must”, a workaholic could learn to use more rational statements. For instance, instead of saying “I must meet that deadline at all costs they could say “I will try to keep the deadline and if I cannot, I will timely communicate this.” Mastering this kind of self-talk is important for workaholics because it creates awareness that there are alternative, more realistic ways to perceive and interpret what is going on at work. In other words, it helps the workaholic to free himself



from the burden of compulsive thought patterns that focus exclusively on work-related matters.

Burwell and Chen (2002) argue that rational-emotive imagery, another REBT technique consisting of learning to feel new pleasant emotions rather than unpleasant emotions in particular situations could be an effective intervention strategy for workaholics as well. Using rational-emotive imagery, workaholics imagine a worst-case scenario, such as not being able to work long hours for whatever reason. Subsequently, they are asked to intensely experience the feelings associated with working fewer hours, such as feeling like a failure in the eyes of their colleagues. Finally, they are instructed to change the negative emotional experiences into more appropriate feelings that are in line with rational thinking. More particularly, they are trained to signify that they may feel and may behave alternatively, for instance, by deciding not to be preoccupied with what colleagues think about them. As a result, workaholics might be less bothered by negative feelings.

Finally, difficult situations could be rehearsed by means of role-playing. Role-playing provides workaholics with the opportunity to examine in a simulated real-life setting the irrational thoughts that have led them to feel inappropriate emotions. An example is rehearsing a conversation with one's superior who is not satisfied about one's performance. During the conversation the counselor can tackle associated irrational thoughts like "When my superior is not satisfied, my career is terminated and everyone thinks I am a loser."

Findings from studies that applied CBT to other behavioral addictions are positive. For example, Müller et al. (2008) conducted a randomized controlled study among compulsive shoppers. Half the participants received a group treatment based on cognitive-behavioral principles, whereas the remaining participants were assigned to the waitlist control group. The participants in the treatment group took part in one session per week over a period of 12 weeks. At follow-up, after the intervention, symptoms associated with compulsive shopping (e.g., buying things when one could not afford them) had decreased significantly, also in comparison to the control group. Specifically targeting gambling-related beliefs and cognitions, Breen, Kruegelbach, and Walker (2001) found that a 28-day in-patient CBT program affected the targeted gambling beliefs and attitudes significantly and in the desired direction. Unfortunately, no control group was included in this study.

### *Conclusion*

Although self-help groups (Workaholics Anonymous) and family systems counseling are intuitively appealing, it seems that, from an evidence-based perspective, the most promising way to treat workaholism is by applying the

principles of cognitive and behavioral therapy. This is not very surprising because workaholism has both a cognitive (working compulsively) and a behavioral (working excessively) component. However, because workaholics are notoriously unmotivated for treatment, motivational interviewing might be a useful tool for increasing their readiness to change, and thus to seek professional help.

Several techniques focusing on one of the two, or on both components of workaholism, have been discussed. Most of these techniques may be used in more comprehensive treatment programs such as RETB, or CBT. Unfortunately, so far, no studies on the effectiveness of these treatment programs have been conducted among workaholics, but studies among other behavioral addictions, such as excessive buying or gambling, show encouraging results.

#### **7.4. Online interventions**

The fact that the majority of workaholics currently does not seem to receive adequate treatment for their problem, suggests a need to better explore how interventions can be made better available and accessible to workaholics. Among the possibilities is the development and use of online treatment options. Online approaches may facilitate workaholics' enrollment in a treatment program for a number of reasons. First of all, internet interventions have the potential that services will be provided to individuals who will not easily sign up for regular treatment. More and more, an internet-based intervention is the first intervention in line that individuals attempt for resolving their problems. This implies that delivering internet-based interventions improves access to treatment for workaholics. Secondly, as working hard is generally not considered problematic by society, workaholics may find it difficult and feel embarrassed to articulate their problem. Internet-based interventions are seen as appealing to workaholics, because they provide the opportunity to anonymously participate in treatment in a secure, private environment (Tate & Zabinski, 2004). Thirdly, online interventions are easy accessible; there are no limited opening hours, nor is the intervention dependent upon location; participants could log on at any time to participate from the privacy of their homes. This reduces costs and increases convenience for users. Since workaholics are generally very busy, this seems to be an important advantage of online interventions.

A rapid increase in the availability of technology has contributed significantly to the development of computerized and online interventions. Growing evidence suggests that internet-based interventions are effective and appreciated by users (Griffiths & Christensen, 2006). Moreover, internet intervention programs that employ a cognitive behavioral approach seem to be particularly effective (Barlow, Ellard, Hainsworth, Jones, & Fisher, 2005; Carlbring

& Andersson, 2006; Clarke et al., 2005; Farvolden, Denisoff, Selby, Bagby, & Rudy, 2005; Spek, et al., 2006). Many of these evaluated internet-based CBT programs focus on reducing depression, post-traumatic stress disorder (PTSD), obsessive compulsive disorder (OCD,) and other clinical disorders. Only a few of them focused on addictions, such as alcohol abuse (e.g., Blankers, Koeter, & Schippers, 2011), and even less have focused on behavioral addictions (see Carlbring & Smith, 2008 for an exception). Moreover, no online interventions are yet available for workaholism.

All in all, internet-based interventions may address many of the barriers encountered when implementing a treatment program for workaholics, because they provide easy access to professional support and with minimal cost for the workaholic.

### **7.5. Towards the development of an online intervention program for workaholics**

In order to address symptoms and origins of workaholism in employees, we developed a 9-week online program named “Improve your work-life balance”. We chose to focus on the improvement of work-life balance as the main target of intervention because it is well established that workaholics and their families struggle with their work-life balance (Aziz & Cunningham, 2008; Aziz, Adkins, Walker, & Wuensch, 2010; Bonebright, Clay, & Ankenman, 2000). By labeling the intervention as a tool to improve work-life balance, we expected that a larger number of workaholics would be reached. Workaholics tend to be in a state of denial about their addiction to work (Porter, 1996; Scott et al., 1997) and as a result they do not apply for treatment. According to Burwell and Chen (2008), work-life balance initiatives are excellent means to stimulate employees prone to overwork to engage in non-work activities. Improving one’s work-life imbalance represents a more positive approach of the workaholic problem and is therefore more likely to be acknowledged or taken seriously by workaholics. In other words, workaholics may be more inclined to enroll in such an intervention program. The “Improve your work-life balance” intervention is grounded in REBT and aims to teach participants about strategies to deal with symptoms and origins of workaholism through education, exercises, personal reflection, and email communication with a coach.

The objectives of the “Improve your work-life balance” program are to (1) promote a healthy work-life balance among workaholics and (2) to reduce workaholics’ compulsive work drive by providing them with the knowledge and skills necessary for behavior change. More specifically, the program focuses on learning workaholics to (1) recognize the consequences of their behavior; (2) identify cognitions that activate compulsive behavior; (3) effectively challenge

irrational thoughts and replace these with more rational thoughts, (4) adequately cope with negative emotions; and (5) manage time and priorities.

### *Intervention program*

The content of the intervention program is based on REBT principles that were applied to workaholism, that is, it specifically focuses on work-related irrational beliefs. The program contains three stages and nine core modules. Participants in the intervention program receive approximately 25 exercises during 9 weeks and are encouraged to complete the exercises within a given time frame (typically two working days). In each stage, participants are alternately asked to read or view educational content (e.g., theory and examples), put the strategies into practice and/or reflect on their process with their coach. Each module addresses a specific issue, for instance time management skills or exploring dysfunctional thoughts. The multimedia program itself guides users through the various activities and is facilitated by a coach. This coach assists the participants in exploring, challenging, and disputing their dysfunctional thoughts and provides support by giving compliments and suggestions. Participants communicate with their coach via an e-mail message system that is part of the internet-based program. To personalize the program, interviews with three so-called workaholics (i.e., actors) about topics such as work- life balance, irrational cognitions and self-expectations were videotaped. These characters are similar to the three types of workaholics as described by Scott et al. (1997), i.e. the compulsive dependent type, the perfectionist type, and the achievement-oriented type. At several points during the training, the actors appear in short movie clips.

The intervention follows the stages of behavior change as described previously in the model of Prochaska and DiClemente (1983). Each stage involves different issues and tasks, for instance, addressing the ambivalence of changing the behavior. Since problem awareness is crucial for participation in the training, our intervention does not include the precontemplation stage and starts with the contemplation/preparation stage. This phase is followed by the action and the maintenance/relapse phase, respectively.

### *Contemplation/Preparation stage (2 weeks)*

This stage of change consists of four modules, which are focused on raising the workaholics' awareness about the problem, its causes and consequences, and help the participant to set goals for changing his or her behavior.

*Introduction:* The training starts off by showing two short movie clips, in which the workaholics introduce themselves and tell about their struggle to strike a proper work-life balance (e.g., "answering business calls and emails in non-work

time"). Subsequently, participants are asked in which character they recognize themselves most (i.e., compulsive-dependent, perfectionist, or achievement-oriented) and to reflect on how they experience their current work-life balance.

*Time writing:* In this module, participants are asked to keep record of how much time they spend working and how much time they spend on other activities. The purpose of this exercise is to raise awareness about how the participant spends his or her time each day and about the poor balance between work and leisure/social activities.

*Evaluating balance:* This module addresses the discrepancy between values and behavior in the participants' life. Using an interactive "value diagram", participants are asked to summarize how much time they spend on several life domains (e.g., "I do not exercise at all"), and how much time they ideally would like to spend on these respective domains (e.g., "I would like to exercise two times a week"). The difference between one's actual and ideal situation is used to formulate individual goals. In a next exercise, the participant plans activities that are in line with their goals for the following weeks. This activity scheduling is meant to monitor and to increase the number of meaningful and relaxing activities and positive interactions in which the person engages. This is especially relevant to workaholics, as they have unlearned the positive consequences that are associated with leisure and relaxation.

*Meet your saboteur:* In this module, participants are introduced to the saboteur, which is the characterization of their own disturbing cognitions (e.g., "I have to do my work flawlessly"). The illustration of the saboteur is used to give insight into the ways participants undermine themselves by destructive cognitions. The participants are encouraged to write down their beliefs in a "black box", which is a virtual box on their screen, and to indicate their daily mood using an interactive mood measure. Participants are asked to reflect on their beliefs and feelings with the coach. Using these self-monitoring tools, participants are made aware of thoughts as they occur, and on how they feel from day-to-day. Techniques for dealing with their negative thoughts and feelings are introduced in the form of relaxation exercises. Furthermore, participants receive the assignment to find and schedule appointments with a buddy who could be involved in the change process and provide social support when needed.

#### *Action stage (4 weeks)*

In the action stage, participants are taught strategies to actively cease their workaholic behavior and carry out new behavior patterns.

*Examining dysfunctional thoughts:* In this module, the participant is introduced to the principles of REBT. That is, the rationale behind the REBT model

is explained and the associations between dysfunctional thoughts, moods and behaviors are demonstrated. The individual learns how to recognize irrational thoughts by reality testing and replacing these maladaptive thoughts with more constructive ones (cognitive restructuring).

*Behavioral experiments:* In this section, participants are asked to design and plan new behaviors, and carry out activities that elicit negative emotions and behaviors (e.g., leaving work earlier than colleagues or deliberately leaving typos in documents). By confronting themselves with such situations that provoke negative emotions, participants have the opportunity to examine the validity of their assumptions. As nothing catastrophically bad happened after the participant has carried out the new behavior, the person experiences the inaccuracy of the previous thought patterns. Hence, testing assumptions through behavioral experiments provides feedback that is necessary to replace irrational with rational thoughts.

#### *Maintenance/relapse stage (3 weeks)*

In this stage, participants learn to consolidate the gains attained during the action stage and learn strategies to prevent relapses in work behaviors to occur.

*Coping with pressure:* In this module, the training focuses on teaching participants new strategies for coping with internal and external pressure. Participants are asked to write down their own and others' expectations and check them with reality.

*Reflection:* During the entire training, but especially in the final phase, participants are asked to set apart time to reflect on what they have learned so far and how this influences their day-to-day behavior. In this module, participants compare their new "actual" time schedule to their ideal time schedule, and decide whether a change has occurred. At this point, participants may become aware of other neglected areas in their lives.

*Implementation intentions:* Finally, to increase the likelihood that the intentions of the participants to maintain a healthy work-life balance lead to goal directed behavior, they are asked to formulate implementation intentions, i.e. specific plans about when, where and how the desired behavior is to be performed in the nearby future (Gollwitzer, 1999). Implementation intentions help participants to carry out these goal-directed behaviors and thus to maintain a healthy way of working.

#### *Effectiveness*

Data concerning the effectiveness of the "Improve your work-life balance" intervention program are not yet available. Its effectiveness is currently being tested among employees of a Dutch university. Outcome measures on the effectiveness of

the intervention (i.e., workaholism, negative and positive emotions, work-related irrational beliefs, exhaustion and recovery experiences) are being collected via a questionnaire. Assessments are carried out at three time points: (1) one week prior to the start of the intervention, (2) one week after the intervention and (3) four months after the intervention. The feasibility of the program will be examined using measures of retention and adherence (i.e., the number of employees that completed and adhered to the program and participated in all pre and post-intervention assessments), and satisfaction.

### *Conclusion*

The intervention “Improve your work-life balance” is the first online CBT program to specifically target workaholism among employees. This intervention overcomes some of the barriers found in the treatment of workaholism by: (1) having a theoretically based program, (2) taking a multi-faceted approach to behavior change, and (3) being highly accessible through the use of internet. Further research is required to establish the effectiveness of this program. Such an effect study will provide valuable information for professionals looking to reduce workaholism. Furthermore, it will establish whether the intervention is a feasible program for future implementation.

## **7.6. General conclusion**

Following Schaufeli et al. (2008), we defined workaholism as an irresistible inner drive to work excessively hard. Although there is no general agreement on the nature of workaholism, most definitions concur that working excessively hard (the behavioral component) and working compulsively (the cognitive component) constitute its core elements (McMillan & O'Driscoll, 2006). Based on our overview of prevention and treatment of workaholism, we may formulate four major principles for combating workaholism. First, workaholism seems an ambivalent phenomenon; it is neither entirely good, nor entirely bad. Some stakeholders (organizations) have a vested interest in employees working very hard, whereas others (partners of workaholics) have opposite interests. The workaholics themselves are caught in between: their behavior is approved as well as disapproved. Because of this ambivalence it is difficult to combat workaholism and considerable effort is needed to raise the workaholic's awareness that his excessive work behavior constitutes a problem that needs to be dealt with. A technique like motivational interviewing might be helpful here.

Second, interventions should not exclusively focus on the target person, but also on the organizational and family environments. For instance, preventive measures should aim at changing an organizational culture that promotes

workaholism into a more healthy culture. The online intervention described earlier does not address this aspect. Therefore, implementation of this intervention should preferably be complemented by an organization-level intervention that is aimed at influencing the organizational culture. Moreover, family members should also be included in prevention and treatment programs because they are not only victims of workaholism, but also play a role in maintaining it.

Third, the treatment of workaholism should aim at changing its behavioral component (working excessively hard) as well as its cognitive component (working compulsively). It seems that treatment programs based on principles that are used in cognitive and behavioral therapy are the most promising when it comes to reducing workaholism. That is, circumstantial evidence from the treatment of other behavioral addictions suggests that a cognitive-behavioral approach is likely to be successful for workaholism as well.

Fourth, online intervention has several advantages over traditional face-to-face treatment in terms of convenience, accessibility, and anonymity. Furthermore, several studies have demonstrated the effectiveness of internet interventions. More research is required to establish the efficacy of online interventions for workaholism. To this aim, we designed the internet-based intervention program "Improve your work-life balance", which targets compulsive work behaviors using a cognitive behavioral approach. In order to substantiate its effects, this program should be tested using an appropriately powered randomized controlled trial. We expect that it can be a useful tool for health professionals for counteracting workaholism and its consequences.



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# CHAPTER 8



## **General discussion**





### 8.1. Introduction

The previous years, attention for workaholism has increased among professionals within and outside the scientific community. This is an important development, in view of the fact that scientific literature on workaholism is scarce (Ng, Sorensen, & Feldman 2007). Nevertheless, the majority of the research on workaholism is merely descriptive and correlational in nature and lacks a clear theoretical framework. Therefore, still not much is known about the mechanisms that may explain workaholism from a psychological point of view. Schaufeli, Taris, and Bakker (2008) conclude that working excessively and working compulsively are the two core characteristics in most workaholism definitions. Based on these two characteristics, we define workaholism as “an irresistible inner drive to work excessively hard”. In view of the addictive nature of workaholism (Oates, 1971), we conceive workaholism as an inherently negative psychological state. Workaholism seems to have negative consequences for the individual, his or her family as well as for the organization. For instance, workaholics report more mental distress and subjective health complaints than others (Andreassen, Ursin, & Eriksen, 2007; Andreassen, Hetland, Molde, & Pallesen, 2011; Schaufeli, Taris, & Van Rhenen, 2008). Research also shows negative effects of work addiction on the family; workaholics have higher levels of work–life imbalance than non-workaholics (Aziz, Wuensch, & Brandon, 2010). As a consequence, they offer less social support to their partners (Bakker, Demerouti, & Burke, 2009). With regard to the work domain, workaholics are unwilling to delegate work (Spence & Robbins, 1992) and they promote stress in the workplace (Porter, 2001). Hence, both the workaholic and his or her (work) environment may benefit from combating workaholism.

The aim of this thesis was to examine workaholism using a comprehensive theoretical paradigm that also offers practical possibilities for reducing it. Using the Mood-as-Input (MAI) model (Martin, Ward, Achee, & Wyer, 1993) as well as a cognitive approach based on Rational Emotive Behavior Therapy (Ellis, 1962, 1994), we focused in this thesis on cognitive and affective predictors of workaholism. In this final chapter, we summarize and discuss the results of the studies that are reported in the previous chapters of this thesis. As outlined in the introduction, we focused on four research questions. Our concluding chapter starts with a brief summary of the answers to each of those questions.

### 8.2. Summary of main findings

*Research question 1. How are mood and stop rules related to workaholism and work engagement?*

Both workaholics and work engaged employees work long hours and have difficulties detaching themselves from work (Schaufeli, Taris, & Bakker, 2008). Still,

these two states of mind can be empirically distinguished (Schaufeli, Taris, & Bakker, 2006; Schaufeli, Shimazu, & Taris, 2009). We used the MAI perspective (Martin et al., 1993) to gain a better understanding of the different persistence mechanisms underlying workaholism and work engagement. The basic tenet of the MAI model is that, dependent on a personal rule ("stop rule") used, a different mood state may lead to persistence. When individuals evaluate whether they still enjoy an activity (*an enjoyment stop rule*), a positive mood would signal enjoyment, resulting in persistence. On the other hand, when individuals evaluate whether they have done enough (*an enough stop rule*), a negative mood would signal discontentment, which would also result in persistence.

In Chapters 2 and 3, we set out to examine the mechanisms underlying workaholism and work engagement by examining their relationships with mood and stop rules. In line with the basic premises of the MAI model, we expected that workaholics use the enough stop rule and that work engaged use the enjoyment stop rule for determining work persistence. In addition, we hypothesized that workaholism is positively related to negative mood whereas work engagement is positively related to positive mood. We furthermore expected that, the interpretation of negative mood by workaholics, and the evaluation of positive mood by engaged employees, in the light of their stop rules (i.e., interactions of mood and stop rules), may foster their persistence in working. Using short descriptions of a hypothetical employee, the first exploratory study (Chapter 2) showed, as expected, that workaholics are inclined to continue working as long as there is an option to do more, and that they stop only then when they feel that they have done enough (an enough stop rule). Against our expectations, work engaged employees did *not* indicate that they continued as long as they enjoyed their work, or that they stopped if they did not like it anymore (an enjoyment stop rule). This study also showed, as expected, that workaholics tend to report a negative mood, whereas employees who are engaged in their work tend to report a positive mood. Unexpectedly though, and not in line with MAI predictions, neither a strengthening effect of negative mood on the relationship between the enough stop rule and workaholism was found, nor a reinforcement of positive mood on the relationship between the enjoyment stop rule and work engagement.

To further examine the suitability of the MAI model as an explanatory mechanism for (the difference between) workaholism and work engagement, a second study was conducted (Chapter 3). It was argued that reasons to quit working might be not the same as reasons to continue working. Therefore, we distinguished explicitly between reasons to stop and reasons to continue working. In a preliminary study, we developed and tested a questionnaire for measuring work persistence rules; the Work Persistence Rules Checklist (WoPeC). In creating

the persistence rules subscales, we therefore distinguished between reasons to stop (“termination rules”) and to continue working (“continuation rules”). In line with our expectations, the results revealed that not only a distinction could be made between enough and enjoyment rules, but also between rules to stop and rules to continue working. In other words, our findings point out that continuing to work because one enjoys it is not the opposite of stopping with work because one does not enjoy working anymore. The WoPeC appeared to be a reliable measure to tap four specific reasons for stopping or continuing work: (1) enough continuation rules, (2) enjoyment continuation rules, (3) enough termination rules, and (4) enjoyment termination rules.

The study in Chapter 3 furthermore showed that workaholics continue working because they feel that not enough has been done. In contrast, engaged employees continue working because it is fun. Whereas workaholics experience a negative mood, engaged employees report that they experience a positive mood. Neither workaholics nor engaged employees reported to stop working because enough has been done, or because work was no fun anymore. Apparently, these reasons to *stop* working are less relevant for workaholics and engaged employees than the reasons to *continue* working. Also, the results show that neither the mood of workaholics nor that of engaged employees seems to have an impact on the individual's reasons to continue working.

In sum, the results of Chapters 2 and 3 establish that mood and continuation rules have a unique effect on workaholism and work engagement. Moreover, in none of our studies evidence was found for a mood-as-input effect. That is to say, neither workaholics nor engaged employees seem to use their mood as source of information for evaluation their motive to persist working. Below, in section 8.3., we elaborate on this null finding. To answer our research question, both mood and continuation rules seem vital in explaining the difference between workaholics and work engaged employees, but do not directly interact with each other.

*Research question 2. What types of work-related cognitions are associated with workaholism?*

In addition to the investigation of the interaction between mood and persistence rules, we examined the influence of a broader range of “irrational” work-related cognitions on workaholism. These beliefs are irrational in the sense that they contain unrealistic expectations and wrong expectations of the consequences of unpleasant events. For the purpose of our studies, a questionnaire was developed called the Work-related Irrational Beliefs Questionnaire (WIB-Q) that assessed four types of work-related irrational beliefs that were assumed to be relevant to

workaholism. In Chapter 4, it was shown that the WIB-Q has a theory-based and reliable factor structure. Four types of irrational beliefs were distinguished referring to: (1) performance demands (2) coworker approval, (3) failure, and (4) control. The results of Chapter 4 revealed that workaholics hold in particular the idea that they have to do their job flawlessly. In other words, they pursue unrealistically high performance standards. Workaholics also seemed to hold the belief that the consequences of failure are unbearable. However, on closer inspection, their negative mood was actually responsible for their irrational beliefs of failure. Against expectations, workaholics do not have the tendency to cling to irrational beliefs about gaining coworker approval or the inability to deal with ambiguous, uncertain work situations.

In Chapter 5, we examined cross-lagged effects of work-related cognitions on both dimensions of workaholism, that is, working excessively and working compulsively. We specifically investigated whether workaholism would result from applying an enough rule at work, and from basing one's self-esteem on work performances. As was elucidated earlier, workaholics seem to use such an enough rule at work and also adhere to high performance standards for themselves, making it plausible that they derive their self-worth from their work achievements. To examine the associations between work-related cognitions and workaholism longitudinally, a two-wave full panel design was used with a 6-month time lag. It was found that a compulsive work drive over time is predicted by an enough continuation rule and a performance-based self-esteem at baseline. Using an enough continuation rule was the only predictor of working excessive hours over time. We also investigated reversed cross-lagged relationships and found that a compulsive drive at baseline predicts future use of the enough continuation rule indicating that each contributes to the etiology and maintenance of the other.

To conclude, Chapters 4 and 5 show that workaholics are prone to holding performance-related cognitions. In contrast, they are less inclined to hold beliefs regarding approval, failure, and control. Our longitudinal study elucidated that continuing with work because not enough has been done is reciprocally related to working compulsively, and predicts working excessively. Basing one's self esteem on performance seems to predict working compulsively 6 months later.

*Research question 3. How are emotions related to recovery experiences and work hours and is this different for workaholics and non-workaholics?*

In Chapters 2 to 4, it was demonstrated that workaholics tend to experience a negative mood. In Chapter 6, we examined to what extent mood was related to recovery. In order to answer this question, we first investigated whether workaholism is related over time to indicators of poor recovery (i.e., burnout

symptoms). Although there are indications that workaholism may lead to burnout (Andreassen et al., 2007; Taris, Schaufeli, & Verhoeven, 2005; Taris, Geurts, Schaufeli, Blonk, & Lagerveld, 2008), this has not been tested longitudinally so far. The results of Chapter 5 indicate that working compulsively at baseline is strongly and positively related to future exhaustion 6 months later. Surprisingly, working excessively was not related to exhaustion 6 months later. So it seems that instead of working hard, the obsession with work is most exhausting. Furthermore, exhaustion was found to have reversed relationships with the two dimensions of workaholism, indicating that also exhaustion itself may promote workaholism. In other words, workaholism has unfavorable consequences in terms of exhaustion, but is an outcome of severe exhaustion at the same time.

Given the fact that workaholism is related to depleted energetic and affective resources, it is likely that the recovery process of workaholics is hampered. As we have seen that negative affect is prevalent in workaholics, we examined the daily recovery process of workaholics specifically looking at the influence of negative emotions (Chapter 6). Our results suggest that when experiencing a relatively high level of negative emotions at the end of the workday, recovery during the evening is more impeded for workaholics than for non-workaholics. It was also shown in Chapter 6 that workaholics spend more time on work-related activities during the evening than non-workaholics when experiencing a relatively high level of negative emotions at the end of the workday. Finally, it was found that poor recovery in the evening leads to more negative and less positive emotions the next morning for both workaholics and non-workaholics.

In conclusion, negative emotions play an important role in the recovery of workaholics. When experiencing these emotions, workaholics are inclined to work more and to recover less. For non-workaholics these negative emotions do not play such a crucial role. Moreover, when employees do not recover adequately, they experience more negative emotions and less positive emotions the next morning. This is the case for all employees, not only for workaholics.

*Research question 4. What types of interventions described in the literature are most appropriate for reducing workaholism?*

While the previous three research questions were answered empirically, this question is addressed on the basis of a literature review of interventions for workaholism. Our review shows that there are several possible prevention and intervention strategies for targeting workaholism. Primary prevention of workaholism, that is, the reduction of the risk of workaholism among healthy, non-workaholic employees, may take place, for instance, through changing the organizational culture. Secondary prevention, which focuses on those who are at

risk of workaholism, could occur through increasing the resilience of those who work in jobs that might promote workaholism by time-management training and social skills training. Tertiary prevention, concerning the treatment and recovery process of those suffering from workaholism, involves counseling services to workaholics. For instance, because workaholics generally lack the motivation to change, motivational interviewing might be a helpful method for increasing their readiness to change, and thus their adherence to the treatment protocol. Intuitively, self-help groups (Workaholics Anonymous) and family systems counseling seem beneficial as counseling strategy. Nevertheless, based on evidence from intervention studies for other (behavioral) addictions, it appears that the most promising way to treat workaholism is by applying the principles of cognitive and behavioral therapy through comprehensive treatment programs such as Cognitive Behavioral Therapy (CBT) or REBT. This is in line with our definition of workaholism, namely that workaholism has both a cognitive (working compulsively) and a behavioral (working excessively) component. This is also consistent with our findings that rigid beliefs and negative affect play a central role in stimulating workaholic behavior. Unfortunately, so far, no studies on the effectiveness of these treatment programs have been conducted among workaholics, but studies among other behavioral addictions, such as excessive buying or gambling, show encouraging results.

Specific barriers for the treatment for workaholics have been identified. For instance, workaholics may not seek treatment due to denial of their problem, embarrassment, or lack of time. Internet-based interventions have the advantage of increased anonymity and reduced time constraints, making it more likely that workaholics will participate and adhere to treatment. Taking into account these considerations, we have developed an internet-based intervention for workaholics based on the principles of cognitive behavioral therapy. The intervention is designed to promote a healthy work-life balance among workaholics and to reduce workaholics' compulsive work drive by providing them with the knowledge and skills necessary for behavior change. Participants for the intervention were recruited via an email newsletter to all employees on the mailing list of a consultancy firm, and by means of flyers distributed at a university department. Unfortunately, the response rate was low and the sample size is therefore too small to draw conclusions about the effectiveness of the intervention. Further examination should reveal the causes of the low response rate. Perhaps it mainly reflects how difficult it is to motivate workaholics for treatment.

In sum, cognitive behavioral interventions seem to provide an integrative, evidence-based and useful approach to combating workaholism. It appears that delivering interventions online has additional advantages for workaholics.

Nevertheless, more attention should be paid to effective recruitment methods for interventions.

### 8.3. Theoretical implications and suggestions for future research

#### *The application of the MAI model to the work context*

The MAI model has been successfully applied to explain compulsive behaviors, such as rumination (Watkins & Mason, 2002) and worrying (Davey, Startup, MacDonald, Jenkins, & Patterson, 2005). Nevertheless, in our studies, no interactions between mood and stop rules were found for explaining workaholism and work engagement (Chapters 2 and 3). There are several explanations for this lack of significant interaction effects. Most likely, it can be attributed to (1) the lack of robustness of the MAI model in general, (2) its application to work behavior, (3) the sample characteristics, (4) the time of assessment, and (5) the study design.

Firstly, the lack of mood-as-input effects may question the *robustness of the MAI model* in general. Earlier evidence for the mood-as-input account was mainly derived from laboratory-based studies. In the majority of these studies, instead of assessing the “natural” stop rules as used by the subjects, the use of stop rules was experimentally manipulated by means of instructions. When people apply rules because they have been instructed to do so, their behavior is likely not to be performed for intrinsic reasons but for extrinsic reasons, for instance, to please the instructor or out of fear for punishment (Deci & Ryan, 2002). Only a few studies applied the MAI model in a field setting or using a clinical sample. In one of the three studies that employed a clinical sample, the mood by stop rule interaction was also not found (Karsdorp, Nijst, Goossens, & Vlaeyen, 2010). In another study, the mood-as-input effect was only demonstrated for the enough (“as many as can”) stop rule (Watkins & Mason, 2002). So this leaves only one field study in which indications were found for a interaction effect of mood and stop rule (Karsdorp & Vlaeyen, 2011). This unequal proportion of experimental versus applied studies may represent a publication bias, or more specifically a file drawer problem (Rosenthal, 1979). That is, it might be possible that more field studies on the MAI model have been conducted but never have been reported (i.e., got lost in the drawer), due to non-significant results or results that are inconsistent with the theory, whereas the experimental studies with statistically significant results are published. As a consequence, the published studies may bias our perception of the strength or direction of the actual relationships.

Secondly, our null findings may also illustrate that *the MAI model is not suitable in a work context*. First of all, complex tasks or work environments may make it difficult or even impossible to demonstrate mood-as-input effects. Other factors besides mood may determine how long an employee continues working. Moreover,

in work settings employees have a specified amount of time to complete their assignments and switch tasks during the day. Persistence rules may also be less applicable in a work context because there are often natural moments to stop working. For instance, an employee may have to go home at 6 o'clock because the office closes each day around that time. These constraints are less of an issue in other compulsive behaviors, such as compulsive checking.

Thirdly, certain *sample characteristics* may facilitate or impede the use of mood as information when assessing progress on a task. If individuals aim to change their mood, the mood state is more likely to be used as information (Clark & Isen, 1982; Schwarz & Clore, 1983). For workaholics, doing enough work is perhaps less tightly linked with the reduction of negative mood. It could be the case that workaholics prefer to revel in their negative feelings (Killinger, 2006), so no active attempt is made to reduce these. Furthermore, when individuals are aware of the cause of their negative mood, they will not use their mood as input for the evaluation of goal progress (Schwarz & Clore). This phenomenon is called the discounting effect, meaning that affect is utilized as an information source unless "alternative plausible causes for an effect are made salient" (Schwarz & Clore, p. 518). This would mean that workaholics are to some extent aware of the origin of their negative mood, and therefore no interaction between mood and stop rule occurs. On the other hand, according to Meeten and Davey (2011), individuals are more likely to use mood to evaluate goal achievement if they do not possess the skills to make objective judgments about their progress, due to poor-problem solving skills or lack of self-efficacy. The fact that no interaction effects were found between mood and stop rules neither for workaholism nor for work engagement possibly signifies that workaholics and engaged employees are at least to some extent capable of making rather objective judgments about their goal achievement. However, the lacking interaction effects do not exclude the possibility that workaholics and engaged employees use other types of subjective experiences as input for the evaluation of their goal progress, such as compliments of colleagues, or feelings of self-efficacy. Future studies could focus on inputs other than mood that workaholics and engaged employees use for the evaluation of progress towards their goals.

A fourth reason for failing to find the postulated interaction effect may lie in the *time of assessment*. Mood may be less influential during the maintenance of workaholic behavior than during the development of compulsive work patterns. That is, if behavior patterns and the associated beliefs are ingrained in an individual's life, they are less sensitive to moment-to-moment variations in feelings and cognitions. It is possible that mood states produce variations in work motivation of young employees at the start of their careers, but not in older, more



experienced employees, who have already developed particular work habits and routines. Nevertheless, in Chapter 6, we demonstrated that fluctuations in emotions can indeed influence work behavior, but on a daily basis.

Finally, our null finding could be attributed to the *design of the studies*. Firstly, generally speaking, it seems more difficult to demonstrate moderator effects in field studies than in experiments (McClelland & Judd, 1993). This is due to non-optimal distributions of the independent variables in field studies, which means that the residual variance of the interaction term is comparatively lower, which, in turn, reduces the efficiency of the moderator parameter estimate and the statistical power. Possibly, this has decreased the likelihood of detecting an interaction effect in our study as well. Secondly, by specifying a direction in the persistence rules (to stop or to continue), we perhaps already captured an interaction between mood and personal rules. To clarify, the direction of work behavior (i.e., stop or continue) that is supposed to be caused by mood is already integrated in the persistence rules. An interaction may be more easily to detect when framing the persistence rules as general achievement (e.g., “My goal is to do as much as possible”) versus hedonic goals (e.g., “My goal is to have fun at work”) (Karsdorp & Vlaeyen, 2011), instead of persistence rules.

To increase our understanding of the applicability of the MAI model to the work context, the model should be validated using other designs (e.g., quasi-experimental or longitudinal designs). This could lead to stronger conclusions about the potential moderating effect of mood on the relationship between persistence rules and work persistence.

#### *The difference between workaholism and work engagement*

Focusing on mood and persistence rules, the results presented in this thesis provide an additional empirical basis for the distinction between workaholism and work engagement (Chapters 2 and 3). Although no mood-as-input effects were demonstrated, the elements of the MAI model were found to play a unique role in differentiating both psychological states. Firstly, our findings indicate that workaholics and engaged employees differ with respect to the underlying reasons for working so hard. Workaholic employees are typically motivated by a need for achievement, as indicated by the use of the enough continuation rule. They continue working because they are not satisfied with their achievement (i.e. how much they have done), thus linking the workaholics’ perfectionist standards to their persistence. In contrast, engaged employees continue working because they obtain fulfillment and pleasure from their work. This enjoyment orientation appears to reflect their intrinsic motivation (Van Beek et al.) and may explain why they invest so much effort into their work and persist in the face of difficulties (Schaufeli,

Salanova, & González-Romá, 2002). The distinction between workaholism and work engagement based on persistence rules is in line with the dualistic model of passion as proposed by Vallerand et al. (2003). This model considers passion as a strong inclination toward an activity that one loves, values, and in which one invests a considerable amount of time and energy. The two forms of passion which have been identified are “harmonious passion” and “obsessive passion”. Harmonious passion refers to taking part in an activity voluntarily because it brings joy, without the activity overpowering one’s life. It is an autonomous internalization of an activity, meaning that the activity is integrated in one’s identity. Persistence occurs because positive returns (e.g., pleasure, fulfillment) are experienced and expected, bearing resemblance to the enjoyment continuation rule. In contrast, obsessive passion refers to engaging in an activity because one feels obliged to do so; it is a controlled internalization of the activity and therefore has power over the individual’s life. In the case of obsessive passion, persistence occurs rigidly despite the consequences, which has similarities to using the enough continuation rule. The supposed parallel between workaholism and work engagement on the one hand and obsessive and harmonious passion on the other hand confirms that two distinct mechanisms might underlie workaholism and work engagement.

Secondly, the finding that the drive of workaholics to work hard is strongly associated with negative affect, whereas work engagement is related to positive affect, is an additional confirmation of the fundamental difference between the two psychological states. It corroborates that workaholism is related to unwell-being, whereas work engagement is related to well-being (Shimazu & Schaufeli, 2009). According to Broaden and Build theory (Fredrickson, 2001), positive emotions are beneficial to wellbeing by (1) broadening one’s attention and behavior repertoire, and by (2) building physical, social, intellectual and psychological resources. In contrast, negative emotions narrow one’s thought–action repertoires in such a way that resources are used to deal with the problematic situation (Fredrickson & Branigan, 2005). According to Conservation of Resources theory (COR; Hobfoll, 1989), people are inclined to obtain, retain, and protect their resources. Central to the theory are the loss and gain cycles of resources, which represent cumulative and reciprocal processes of resource loss and gain (Hobfoll, 2002). That is, initial loss intends to activate a chain of reduced resources (i.e., produce a loss cycle) whereas resources may strengthen each other over time (i.e., produce a gain cycle). In line with COR theory, Salanova, Llorens, and Schaufeli (2011) demonstrated that positive emotions and work engagement are part of a “gain cycle” of wellbeing. In a similar vein, our results may suggest that negative emotions and workaholism constitute a “loss cycle” of unwell-being.

The difference in affect found for workaholism and work engagement may

also convey another meaning. A central idea of Carver and Scheier's (1998) model of self-regulation is that affect is a function of our perception of the rate at which we are approaching our goals. More specifically, the individual's perception of a discrepancy between the expected rate of advancement toward goal achievement and the actual rate of progress, results in change in affect. Individuals experience positive emotions, such as excitement or joy, when they are approaching their goals at a faster rate than was expected. Conversely, individuals will experience negative emotions, such as anger or depression, when progress toward achieving their goals is slower than was expected. This model would predict that for workaholics negative affect arises because goals are achieved very slowly or not at all, which is in line with the finding that workaholics never feel that they have done a sufficient amount of work. Similarly, for engaged employees positive affect would arise because goals are successfully achieved. Further empirical research is needed to evaluate the merits of Carver and Scheier's self-regulation model for the difference in affect between workaholism and work engagement.

Taken together, our findings support the assumption that workaholism and work engagement are two fairly different and independent notions, both driven and characterized by opposite cognitive and affective factors. In the case of workaholism the underlying motivation for persistence seems negative and extrinsic, whereas in the case of engagement it appears positive and intrinsic. In prospective studies, it would be interesting to examine whether persistence rules and mood are causes, correlates, or consequences of workaholism and work engagement. This could provide more theoretical and practical insights in the different persistence mechanisms underlying workaholism and work engagement.

#### *The effect of work-related cognitions on workaholism*

Many scholars have speculated about beliefs and assumptions that cause workaholics to put so much time and effort into their work. For instance, it has been suggested that some workaholics work hard because they extremely enjoy their work (Spence & Robbins, 1992), whereas others proposed that workaholics work hard to obtain approval and success (Killinger, 1991). The results of the current thesis provide a test of a cognitive model of workaholism by examining work-related beliefs of workaholics. Summarizing the results of our first four studies, we find unequivocal relationships between work-related cognitions and workaholism. As outlined in the previous paragraph, we found that workaholics continue working because they are not satisfied with their work achievements. Out of four irrational work-related cognitions, rigid performance demands were most strongly associated with workaholism. Apparently, workaholics have a strong focus on output, which appears a manifestation of internalized external performance

standards (Van Beek, Hu, Schaufeli, Taris & Schreurs, 2011). This is in line with earlier suggestions that workaholics are perfectionists (Spence & Robbins) and have a strong motivation to achieve (Ng et al., 2007). Finally, we showed that not only achievement-based persistence, but also performance-based self-esteem was related to the compulsive component of workaholism. Workaholics base their identity on their performance (Fassel, 1990; Robinson, 2007); they have to perform in order to accept themselves as a person. Nevertheless, striving for self-validation is associated with rather negative health consequences (Crocker, 2002; Hallsten, Voss, Stark, Vingård, & Josephson, 2011), in particular when experiencing negative events in the domains on which self-worth is staked (Crocker & Park, 2004). Furthermore, individuals high in performance-based self-esteem will probably have difficulties in finding a healthy balance between internal needs and external demands (Persson, Albertsen, Garde, & Rugulies, 2011).

A more complete understanding of the purposes of the workaholic's achievement striving might be acquired by the achievement goal approach. In the contemporary achievement goal model (Elliot & McGregor, 2001), achievement goals consists of separate combinations of two basic dimensions: definition (mastery vs. performance) and valence (approach vs. avoidance). Individuals with mastery goals aim to understand or master a task, or to improve their knowledge and skills, whereas those with performance goals compare their own performance to other people's performances. In addition, individuals holding approach goals are aimed at trying to attain a positive outcome (e.g., success), whereas individuals holding avoidance forms of regulation are focused on trying to avoid a negative outcome (e.g., failure). When combined, these dimensions constitute a 2 by 2 achievement goal framework, comprising mastery-approach goals, mastery-avoidance goals, performance-approach goals, and performance-avoidance goals, respectively. Positive relationships have been found between need for achievement and perfectionism on the one hand, and holding a performance approach goal on the other hand (Van Yperen, 2006). In the same study, perfectionism was also positively associated with holding a performance avoidance goal. When linking this achievement goal framework to the findings of our studies, one might speculate that focusing on doing better than others, and the fear of performing worse than others may explain the performance-related cognitions of workaholics. An interesting direction for future research is therefore to compare the achievement goals to the performance beliefs, as used in our studies. Adopting 2 x 2 achievement goal framework for examining the influence of different achievement goals on workaholism may provide a more complete account of the valence (i.e., avoidance of approach orientation) of performance-related beliefs.

How and why do these beliefs develop? The family system is thought to be

of central importance for the origins of these dysfunctional achievement beliefs. Because children internalize the values and behaviors of their parents from a young age (Frost, Lahart, & Rosenblate, 1991), it is likely that parental behaviors may have influenced achievement strivings (or perfectionism) among workaholics. Examples of such types of parental behaviors are: (1) being critical and authoritarian, (2) holding high expectations and setting high performance standards, and/or (3) modeling perfectionist attitudes and behaviors (Frost et al.). Moreover, it has been suggested that the social work environment may also stimulate workaholism, for instance, by means of the beliefs transmitted through a competitive work culture (Fassel, 1990; Schaeff & Fassel, 1988). To illustrate, Burke (2001) found that workaholics scored lower on organizational values supporting work-personal life balance and higher on values supporting work-personal life imbalance than other employees.

In spite of the fact that these findings advance our understanding of workaholism from a cognitive perspective, it would be premature to claim that achievement-related cognitions act as precursors of workaholism. Future research should point out to what extent the co-occurrence of these cognitions and workaholism is dependent upon factors such as personality, socio-demographic variables and work environment. This would provide a more complete account of which groups are at risk for workaholism, but also provides an understanding of why workaholics set high performance standards and derive their self-esteem from their performance.

#### *The role of affect in workaholism*

In four of the five studies, we examined the role of (mainly negative) affect in workaholism. The finding that negative affect is strongly and positively associated with workaholism, is in line with previous research suggesting that negative affect is a risk factor for the development of addictions (cf. Cooper, Frone, Russell, & Mudar, 1995; Young & Wohl, 2009). For instance, gambling may be provoked by distracting from negative emotional states (Young & Wohl). The same might be true for workaholics. It has been proposed that working compulsively hard may provide a sense of distraction from negative emotional states (Burke, 1999; Killinger, 1991; Porter, 1996). In that sense, negative emotions could be an important factor for the development of workaholism. In our diary study (Chapter 6), we found some support for this phenomenon. On a daily level, negative emotions at the end of the workday promoted work persistence for workaholics, but not for non-workaholics. Overall, this finding seems to point to a down-regulation of negative affect by working. However, conclusions are complicated by issues of causality because it is also possible that workaholics (but also non-workaholics) might experience

negative affect as a *consequence* of their work behavior through the depletion of energetic and mental resources (Hagger, Wood, Stiff, & Chatzisarantis, 2010). In our diary study (Chapter 6), we found support for this interpretation. Higher levels of negative emotions and lower levels of positive emotions in the morning appeared to be the result of a lack of recovery the previous evening for both workaholics and non-workaholics. In others words, negative affect may also be a consequence of inadequate recovery.

Altogether, these findings suggest that negative affect plays a diverse role in workaholism: for example, negative emotions stimulate work persistence and impede recovery experiences, but also appear to be a consequence of inadequate recovery. Future research is needed to unravel the relationship between negative affect and workaholism in more detail. Such research could be conducted on affect (dys)regulation in workaholics using a method that is sensitive to within-person processes. For instance, event-sampling recording methodology (Reis & Gable, 2000) may help to gain insight into the origin and implications for workaholics and non-workaholics of affective experiences across situations occurring over a period of time. Furthermore, an interesting issue to examine in future studies is to what extent working compulsively hard genuinely relieves negative affect. If so, negative affect may increase one's level of workaholism by providing an additional incentive for working compulsively. Finally, as negative affect is a broad construct that is composed of a number of distinct emotions (e.g., sadness, anger; Watson & Clark, 1992), it might be relevant to examine the connotation of these specific emotions for workaholics.

## 8.4. Limitations and strengths

### *Limitations*

#### *Use of solely self-report measures*

A limitation of our survey studies is that all data are based on self-reports. Reliance on self-report may weaken the validity of the study results for several reasons. First of all, self-report accounts may be subject to distortion and inaccuracy due to social desirability responses. This occurs because individuals are inclined to over-report (vs. under-report) activities that are perceived to be socially desirable (vs. undesirable) (Zerbe & Paulhus, 1987). Social desirability bias might specifically apply to the study of workaholism, because workaholics are often in denial about their inner work drive and as a consequence report lower estimates of workaholism. Nevertheless, Burke and Ng (2007) demonstrated that there was considerable agreement between self- and coworker reports of workaholism. Thus, although one would expect that workaholics tend to choose socially desirable responses, no evidence has yet been found to support this notion. Secondly, according to some

scholars the use of self-reports may affect the estimations of the reported relationships between variables due to common method variance. Common method variance is the shared amount of spurious covariance between variables because of the common method utilized (i.e., self-reports). When different sources of data are used in an empirical study, but yield similar results, it is less likely that the findings are a result of self-report bias or common method variance. Yet, several studies have shown that the influence and severity of common method variance itself is overestimated (Semmer, Grebner, & Elfering, 2004; Spector, 2006). Nevertheless, we believe that future research could greatly benefit from using additional non-self-report data. More objectively measured variables, such as company records of sickness absence or performance, could be used. In addition, a more complete picture can be obtained by gathering data about mood, persistence rules and workaholism levels of the individual by questioning managers, co-workers, friends and family members (Aziz & Zickar, 2006; Burke & Ng, 2007; Robinson, Carroll, & Flowers, 2001).

#### *Selection bias*

All studies described in this thesis are based on voluntary participation. Such studies, of course, suffer from non-response, which may, if systematic, lead to selection biases. Whether individuals will respond or not to an invitation for participation in a study can be expected to depend on a variety of factors. For instance, personality factors, such as low agreeableness, openness to experience, conscientiousness (Marcus & Schutz, 2005; Rogelberg et al., 2003), but also aspects of the work situation, such as low organizational support (Spitzmüller, Glenn, Barr, Rogelberg, & Daniel, 2006), decrease the likelihood of participation. In our studies, a plausible selection bias is that "real" workaholics did not respond. Workaholics may be reluctant to participate in studies on work motivation for reasons of denial and avoidance. Moreover, they are likely to have no time to participate in a survey study because they are very busy and work excessively hard, and, as a result, are underrepresented. Only in one study, we carefully selected subgroups consisting of workaholics and non-workaholics. Consequently, we may have underestimated the relationships between cognitions, affect and workaholism.

#### *Not taking into account personality or organizational factors*

A final limitation of this thesis is that we did not take into account the influence of other possible relevant variables on workaholism, such as personality factors and organizational inducements (Liang & Chu, 2009). This fact makes it impossible to rule out alternative explanations for the established effects. For instance, the relationship between cognitions and affect on the one hand and workaholism on the other hand might reflect the effect of personality factors. In earlier studies, personality has been shown to be a valid correlate of workaholism.

Some of the Big Five factors, particularly neuroticism (Andreassen, Hetland & Pallesen, 2010; Aziz & Tronto, 2011; Burke, Matthiesen, & Pallesen, 2006), but also other personality constructs, such as perfectionism and narcissism (Clark, Lelchook, Ariel, & Taylor, 2010) were found to strongly relate to workaholism.

As described earlier, organizational factors may also be important for the development and maintenance of workaholism (Harpaz & Snir, 2003). For instance, workaholism has been associated with low organizational support of work-life balance (Burke, 2001) and high organizational demands (Schaufeli, Bakker, Van der Heijden, & Prins, 2009). Hence, the difference between workaholism and work engagement based on persistence rules and mood could actually be the consequence of particular work situation differences. Therefore, future research should include organizational and work characteristics to examine their influence on workaholism.

### *Strengths*

#### *Innovative approach to differentiating workaholism from work engagement*

The current thesis takes an innovative approach to explaining the conceptual distinction between workaholism and work engagement. First, the MAI model (Martin et al., 1993) was used to formulate differential hypotheses concerning the relationship between mood, persistence, and engagement and workaholism. It is one of the first times that the MAI model was applied to the work context (see George & Zhou, 2002 for an exception). Although our results do not support a mood-as-input account, the elements of the MAI model have proven to provide an interesting explanation of work persistence.

Furthermore, the current thesis not only describes, but also provides an explanation for the persistence of workaholics and work engaged employees. By investigating the reasons to stop and continue working, we found out that workaholics continue working for different reasons than engaged employees. Furthermore, by using a diary design, we showed that, unlike non-workaholics, workaholics tend to continue working when they feel negative emotions at the end of the day. All in all, our findings provide insight into the mechanism underlying a workaholic's (versus an engaged or non-workaholic employee's) work persistence.

#### *Development of questionnaires*

An important contribution of the current thesis is the development and validation of two questionnaires, i.e. the Work Persistence Rules Checklist (WoPeC) and the Work-related Irrational Beliefs Questionnaire (WIB-Q). The former taps the reasons employees have to stop and continue working on workdays, whereas the latter provides detailed information about four different types of work-related irrational beliefs individuals might hold. We constructed both questionnaires



because no valid instruments were available for assessing persistence rules and work-related irrational beliefs, respectively. Both scales showed satisfactory internal consistency. These scales provide a quick and easy-to-use method to explore and identify persistence rules and irrational beliefs among employees, and thus, risk factors for workaholism.

#### *Association between workaholism and recovery*

Schaufeli, Bakker et al. (2009) suggested that workaholics have too little opportunities to recover because they work long hours. As a result, they exhaust their energy backup, which is supposed to lead to burnout in the long run. Although the relationship between workaholism and burnout has been established in cross-sectional studies (Andreassen et al., 2007; Taris et al., 2005; Taris et al., 2008), our study is the first to show that compulsive work behavior indeed leads to exhaustion, but also, surprisingly, seems a consequence of exhaustion over time. This reciprocal relationship possibly reflects another “loss cycle” in which one is strengthening the other (Hobfoll, 2002). In addition, the current thesis is one of the first to link research on workaholism to that on recovery (cf. Burke & El-Kot, 2009; Bakker, Oerlemans, & Sonnentag, 2012; Schaufeli, Bakker et al., 2009 for an exception). Our results confirm that workaholics are inclined to continue with their work and have less recovery experiences during the evening than non-workaholics, but only when they experience negative emotions at the end of the day. Hence, this thesis not only establishes a link between work addiction and recovery, but also elucidates a possible underlying psychological process.

### **8.5. Practical implications**

The results of this thesis have practical implications for occupational health professionals, organizations, and (workaholic) employees.

#### *Implications for occupational health professionals*

First, as far as occupational health professionals are concerned, our findings illustrate that cognitive and affective factors play an important role in workaholism. This emphasizes the psychological vulnerabilities of workaholism and suggests that workaholics should benefit from interventions designed to improve their affective and cognitive responses tendencies. Combined with the results from our review of interventions for workaholism, we suggest that a cognitive behavioral approach is most appropriate. Considering its integrative view on cognitions, emotions and behavior, Ellis’ REBT (1962, 1994) may offer a promising intervention strategy for workaholics. Although some aspects of the REBT have received more empirical support than others (cf. Bond & Dryden, 1996; David, Montgomery, Macavei, & Bovbjerg, 2005), critical reviews conclude that effect of this therapeutic approach

show encouraging results for a large range of clinical diagnoses (e.g., anxiety disorders, Type A Behavior Pattern, and depression) and is equally efficient for clinical and non-clinical populations (Dryden & David, 2008; Engels, Garnefski & Diekstra, 1993; Lyons & Woods, 1991).

The general principle of REBT is that behavior change is achieved by disputing irrational beliefs and replacing them with more adaptive rational cognitions (Ellis, 1994). As far as irrational beliefs are concerned, we recommend that when treating workaholics, the focus should be on disputing the workaholic's unrealistically high performance standards and replacing them with more realistic beliefs. Given the salience of performance-related beliefs for workaholics, it is likely that it is most effective to target these particular beliefs, rather than focusing on irrational beliefs concerning approval of coworkers, failure and control over work situations. More specifically, other beliefs, than performance-related beliefs, may actually mask irrational performance demands.

Furthermore, our results suggest that focusing interventions on the affective level is in particular a promising approach to facilitating recovery and reducing compulsive work persistence. For targeting negative emotions, Fredrickson (2000) argues that intervention strategies that promote positive emotions are particularly suitable. Positive emotions have largely been neglected by REBT (Collard & O'Kelly, 2011), but could provide a useful extension. In view of the notion that negative emotions narrow an individual's momentary thought-action repertoire, positive emotions could undo this effect by their inherent effect of broadening the momentary thought-action repertoire, and thus loosening the grip of negative emotions (Fredrickson, Mancuso, Branigan, & Tugade, 2000). Treatment methods focused on promoting positive feelings, behaviors, or cognitions are called "positive psychology interventions". In a meta-analysis, Sin and Lyubomirsky (2009) showed that such positive psychology interventions effectively improve well-being and decrease depressive symptoms. Recently, Ouweneel, Le Blanc, and Schaufeli (2012) demonstrated that positive interventions are also effective in promoting positive emotions among employees. It is therefore likely that workaholic clients will benefit from interventions aimed at building positive emotions and other resources (e.g., satisfying relationships with family members and co-workers) (Burwell & Chen, 2008).

In addition, the WIB-Q could be of practical relevance for the assessment of irrational beliefs. Occupational health professionals could utilize the instrument to identify and thus address irrational beliefs dominating the employee's thinking patterns. Moreover, the questionnaire could be potentially useful in the evaluation of changes irrational beliefs in workaholics over the course of treatment. Finally, the WIB-Q could contribute to the assessment of whether a particular employee is

potentially at risk for workaholism. Screening and early detection is important, because it can contribute to an effective prevention of workaholism (Chapter 7).

#### *Implications for organizations*

Our findings also have several practical implications for organizations because they illustrate that employees, who are not easily satisfied with their work output, are susceptible to develop workaholism. This implies that it is important for organizations to be aware of the work-related (irrational) beliefs their employees hold, and of the risk that is associated with such performance-related beliefs. Organizations may unintentionally reinforce the inappropriately high and unrealistic demands workaholics impose on themselves by rewarding extra-role behaviors. In some organizations, long work hours and sacrificing one's private life to the benefit of the company may have become the standard, which could stimulate workaholic behavior. According to some scholars (Porter, 1996; Schaeff & Fassel, 1990), organizational leaders indeed play a crucial role in this process by means of creating and approving a selection, socialization and reward system that encourages workaholic behavior. In addition, these leaders, superiors, and executives are often workaholics themselves (Brett & Stroh, 2003). If organizations would like to combat workaholism, they may have to change the organizational culture, including their reward systems, as well as the role models of their leaders (Fassel, 1990). Organizations could cultivate healthy work behavior among employees by stimulating realistic performance standards and clearly communicating expectations. In order to prevent workaholism, it is important that organizations create conditions for employees to switch-off from work during leisure time. Organizations can do this, for instance, by promoting a workplace culture which encourages employees to pursue non-work interests, and thus stimulates sufficient recovery opportunities. Finally, as workaholics seem to have low problem awareness, organizations could help workaholics by confronting them with their detrimental behavior and encourage them to engage in counseling programs (Vodanovich & Piotrowski, 2006).

#### *Implications for employees*

For employees, our results suggest that when an employee is driven by high, self-imposed performance standards and when his or her work behavior is associated with negative emotions, this might be a sign of an underlying workaholic tendency. In that case, an employee has to be alert to the impact of his or her negative emotions at the end of the workday on the urge to continue working. Furthermore, for workaholics it is important to break the never-ending cycle of working hard to get a reward that will always be out of reach, like "a carrot on a stick". Their

achievement striving provides comfort, but will not strengthen their self-confidence and self-respect. Therefore, these employees need to find support for developing a stable sense of personal worth that is not contingent on their achievements and successes at work. Working long hours by itself is not necessarily a problem, at least when enjoyment is the underlying reason to do so and the work behavior is associated with positive emotions. Therefore, employees should not ask themselves how hard they work, but why they work hard.

## **8.6. Conclusion**

This thesis takes a rather innovative perspective to workaholism by examining the role of cognitions and affect. Despite the fact that no support was found for the Mood-as-Input model (Martin et al., 1993) as such, the current thesis provides support for a cognitive-affective approach to workaholism. That is, this thesis has established that achievement-related cognitions and negative emotions play an important role in workaholism and recovery. Taken together, this thesis contributed to our *understanding* of workaholism by identifying some of its major antecedents, notably, negative affect and irrational beliefs, thereby setting the stage for *changing* it into healthier work behavior.

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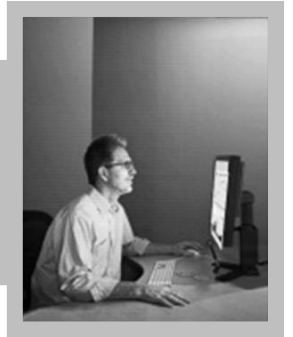


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## Chapter 8

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# Summary





## Introduction

Many people invest a great amount of time and effort in their work. Some people who work extremely long hours might do this just for the fun of it; it reflects their high level of work engagement. Such engaged employees work with passion and take great pleasure in their work, and consequently they work longer hours than prescribed. Work engagement refers to a positive, fulfilling, work-related state of mind, which consists of three dimensions: (1) vigor, (2) dedication and (3) absorption in work. However, working extremely long hours may also be a sign of work addiction. Rather than being motivated by enjoyment of work, such as the work engaged employee, or by external factors such as financial problems, a poor marriage, social pressure or career advancement, a typical work addict is motivated by an obsessive internal drive that (s)he cannot resist. In this thesis, we distinguish between two main characteristics of workaholism: (1) a strong inner drive to work; and (2) working excessively hard. In other words, we define workaholism as an irresistible inner drive to work excessively hard. Contrary to work engagement, workaholism seems to have negative consequences for the individual, his or her family as well as for the organization. Hence, both the workaholic employee and his or her (work) environment may benefit from preventing and reducing workaholism. As earlier studies have shown no difference in the number of work hours of workaholics and work engaged employees, we assume that differences in the work motivation are involved. Despite the fact that scientific attention for workaholism is growing, existing empirical studies generally use simple, descriptive, correlational designs that do not reveal much about its underlying psychological mechanisms. The aim of this thesis was therefore to examine antecedents of workaholism using a comprehensive theoretical framework that also offers practical possibilities for reducing it. Using the Mood-as-Input (MAI) model as well as a cognitive approach based on Rational Emotive Behavior Therapy (REBT), we focused in this thesis on cognitive and affective antecedents of workaholism. As outlined in Chapter 1, our central question is “What affective and cognitive factors contribute to workaholism?” To answer this general question, we addressed four specific research questions. The main results and implications are summarized below.

## Main findings and theoretical implications

*Research question 1. How are mood and stop rules related to workaholism and work engagement?*

In Chapters 2 and 3, the MAI model served as an explanatory framework for disentangling the different underlying motivations that drive workaholic and engaged employees to work excessively hard. The MAI model assumes that,

dependent upon the stop rule used, a different mood state may lead to work persistence. When individuals evaluate whether they still enjoy an activity (*an enjoyment stop rule*), a positive mood would signal enjoyment, resulting in persistence. On the other hand, when individuals evaluate whether they have done enough (*an enough stop rule*), a negative mood would signal discontentment, which would also result in persistence. In line with the basic premises of the MAI model, we expected that workaholics use the enough stop rule and that work engaged use the enjoyment stop rule for determining work persistence. In addition, we hypothesized that workaholism is positively related to negative mood, whereas work engagement is positively related to positive mood. We furthermore expected that, the interpretation of negative mood by workaholics, and the evaluation of positive mood by engaged employees, in the light of their stop rules (i.e., interactions of mood and stop rules), may foster their persistence in working.

In Chapter 2, the associations between mood and stop rules on the one hand, and workaholism and work engagement on the other hand were examined using a convenience sample of 173 employees. The results showed that, as expected, workaholism is positively related to negative mood and to using an enough stop rule to determine when to stop working. In addition, and also as expected, work engagement is related to positive mood, however, not to using an enjoyment stop rule to determine when to stop working. Contrary to expectations, the analyses did neither show a significant interaction of negative mood with the enough stop rule for workaholism nor a significant interaction of positive mood with the enjoyment stop rule for work engagement. This means that neither workaholic nor work engaged employees use their mood as input to their stop rules in order to determine to stop or continue working. In order to acquire more information about the suitability of the MAI model for explaining the differential motivational underpinnings of workaholism and work engagement, we conducted an additional study, which is described in the next chapter.

In Chapter 3, we again used the MAI model to explain the difference in work persistence of workaholic and work engaged employees, this time using a homogeneous sample of 270 employees of a Dutch consultancy firm. As both work engaged and workaholic employees seem to have a specific focus on continuing instead of stopping with their work, it can be argued that reasons to stop working might be different from reasons to continue working. So instead of using *general* stop rules, we distinguished between reasons to stop and reasons to continue working. For this purpose, we developed the Work Persistence rules Checklist (WoPeC), a questionnaire that distinguishes rules to stop ("termination rules") and rules to continue ("continuation rules"), which together are called "persistence rules". Results of a Confirmatory Factor Analysis provided support for the

hypothesized four factor structure of the WoPeC that includes: (1) enough continuation rules, (2) enjoyment continuation rules, (3) enough termination rules, and (4) enjoyment termination rules. Interestingly, path analysis revealed that the use of an enough rule and the use of an enjoyment rule for determining when to continue working were related to workaholism and work engagement, respectively. In contrast, the enough and enjoyment termination rules were neither related to workaholism nor to work engagement. Furthermore, it was found that negative mood was positively related to workaholism, whereas positive mood was associated with work engagement. However, the expected interactions between mood and persistence rules regarding workaholism and work engagement could not be demonstrated.

In sum, the results of Chapters 2 and 3 do not support a mood-as-input process whereby workaholics use their negative mood as an evaluation of how much they have done, and whereby work engaged employees analyze their positive mood to assess to what extent they still enjoy their work. In Chapter 8, we speculate that the absence of interactions between mood and persistence rules can be attributed to (1) the lack of robustness of the MAI model in general, (2) its application to work behavior, (3) the sample characteristics, (4) the time of assessment, and (5) the study design. Nevertheless, the results show that mood and persistence rules by itself may be useful for explaining differences in motivation underlying workaholism and work engagement. Our findings confirm the assumption that although on the surface workaholics and work engaged employees do not seem to differ with respect to their work behavior, they do have inherent different reasons to work persistently. Workaholics continue working because they feel that they have not completed enough work; they are driven by the desire to live up to their own and others' expectations, seemingly without considering their enjoyment of work. In contrast, work engaged employees continue to work because they take pleasure from their work; they seem to be driven by the joy of working. In addition, the results of Chapters 2 and 3 demonstrate that there is a clear difference in affect between workaholic and work engaged employees; the former experience a negative mood, whereas the latter experience a positive mood. This is in line with the idea that workaholism is considered an inherently "bad" form, and work engagement an essentially "good" form of work motivation.

*Research question 2. What types of work-related cognitions are associated with workaholism?*

In Chapters 2 and 3, we demonstrated that workaholics cognitively evaluate whether they have done enough for deciding whether or not to continue working. Many scholars have speculated about other beliefs and assumptions that cause

workaholics to put so much time and effort into their work. In Chapters 4 and 5, we aimed to examine the influence of a broader range of work-related irrational cognitions on workaholism. In Chapter 4, a scale was developed to assess four types of work-related irrational beliefs that were assumed to be relevant to workaholism, dubbed the Work related Irrational Beliefs Questionnaire (WIB-Q). Results of a study among a convenience sample of 913 employees revealed that the WIB-Q has a reliable four factor structure that includes irrational beliefs referring to: (1) performance demands, (2) coworker approval, (3) failure, and (4) control. Results revealed that workaholics “suffer” mainly from unrealistically high performance standards. Against expectations, they did *not* have the tendency to cling to irrational beliefs about coworker approval, failure or control in work situations. Apparently, the workaholic’s behavior is a function of the need to perform, and not of external social contingencies, overestimation of the consequences of bad events, and also not very likely the result of intolerance of ambiguity.

In Chapter 5, we tried to integrate our earlier research findings. We examined the effects of work-related cognitions (i.e., an enough continuation rule and a performance-based self-esteem) on both dimensions of workaholism, (i.e., working excessively and working compulsively) in a longitudinal design. We employed a two-wave full panel design with a time lag of 6 months, and used a sample of 191 employees of a Dutch university. It was found that, over time, a compulsive work drive resulted from an enough continuation rule and a performance-based self-esteem at baseline. Using an enough continuation rule was the only predictor of working excessive hours. Examination of reversed cross lagged relationships revealed that a compulsive drive at baseline predicts future use of the enough continuation rule, indicating that each of the two factors contributes to the etiology and maintenance of the other.

In sum, the results of the studies that are reported in Chapters 4 and 5 show that workaholics are primarily prone to holding performance-related cognitions (i.e., performance demands, enough continuation rule and performance-based self-esteem). In other words, the workaholic’s work drive appears a manifestation of internalized external standards. More specifically, they feel that they have to perform in order to be able to accept themselves as valuable persons.

*Research question 3. How are emotions related to recovery experiences and work hours and is this different for workaholics and non-workaholics?*

Due to their compulsive drive to work excessively hard, workaholics spend much time and energy at work, leaving little time for doing other things. As a result, they seem to neglect their need for recovery. In Chapters 2 and 3, it was demonstrated that workaholics tend to experience a negative mood. Given the findings from other



studies that negative emotions can have an impact on employee's behaviors and well-being, we examined to what extent emotions are related to the recovery process of workaholics. In order to answer this question, we first investigated to what extent workaholism is related over time to indicators of poor recovery, i.e. burnout symptoms (Chapter 5). Although there are indications that workaholism may lead to burnout, so far, this has not been tested longitudinally. In Chapter 5, it is demonstrated that working compulsively has unfavorable consequences in terms of exhaustion, but, together with working excessively, is an outcome of severe exhaustion at the same time. This suggests that workaholism and burnout are part of a "loss cycle" in which one is strengthening the other. All the more reason to focus on the recovery processes of workaholics, as sufficient recovery might interrupt this cycle and consequently prevent burnout. In Chapter 6, using a 5-day diary design in a sample of 118 employees working in a wide range of jobs, we examined the daily recovery process of workaholics and non-workaholics, specifically looking at the influence of negative emotions. Our results suggest that when experiencing a relatively high level of negative emotions at the end of the workday, recovery during the evening is more impeded for workaholics than for non-workaholics. It was also shown that workaholics spend more time on work-related activities during the evening than non-workaholics when experiencing a relatively high level of negative emotions at the end of the workday. Finally, it was found that poor recovery in the evening leads to more negative emotions and less positive emotions the next morning for both workaholics and non-workaholics.

In conclusion, the results of Chapters 5 and 6 demonstrated that workaholics seem vulnerable to inadequate recovery. In addition, negative emotions play an important role in the recovery process. As negative emotions at the end of the workday promoted work persistence for workaholics, and not for non-workaholics, working compulsively hard may for workaholics function as a way to distract themselves from their negative emotional states. Furthermore, workaholics (but also non-workaholics) might experience more negative emotions and less positive emotions in the morning as a *consequence* of insufficient recovery experiences during the previous evening. These findings emphasize the importance of strategies to replenish resources during the evening.

*Research question 4. What types of interventions are most appropriate for reducing workaholism?*

For answering this question, we performed a systematic review of the literature. Our review shows that there are several possible prevention and intervention strategies for targeting workaholism. Based on evidence from intervention studies for other (behavioral) addictions, it seems that the most promising way to treat

workaholism is by applying the principles of cognitive and behavioral therapy through comprehensive treatment programs such as REBT. This is consistent with our definition of workaholism, that is, that workaholism has both a cognitive (working compulsively) and a behavioral (working excessively) component. Also, it is in line with our findings that rigid beliefs (rational aspect) and negative affect (emotive aspect) play a central role in stimulating workaholic behavior. Furthermore, it is explained in this chapter that internet-based interventions have several advantages over traditional interventions for treating workaholics as they deal with some of the barriers that have been identified in their treatment (e.g., their lack of time). In view of this fact, we have developed an internet-based intervention for workaholics based on the principles of cognitive behavioral therapy, called "Improve your work-life balance". This intervention is designed to promote a healthy work-life balance among workaholics and to reduce workaholics' compulsive work drive by providing them with the knowledge and skills necessary for behavior change. Unfortunately, due to a low response rate, the sample that was recruited was too small to draw conclusions about the effectiveness of the intervention.

### **Recommendations for future studies**

By examining the role of affect and cognitions, we have gained new insight into the differences in work motivation of work addicted and engaged employees. Yet, in order to further deepen our understanding of this topic, more empirical work is required. We propose that, in future studies, it would be interesting to examine whether persistence rules and mood are causes, correlates, or consequences of workaholism and work engagement. This could provide even a better theoretical understanding of the different persistence mechanisms underlying workaholism and work engagement, and could thus also lead to more detailed, practical strategies to prevent workaholism. More research should be conducted to disentangle the different implications of negative affect for workaholism. As negative affect is a broad construct that is composed of a number of distinct emotions (e.g., sadness, anger), it is relevant to examine which specific emotions are related to workaholism. Event-sampling recording methodology offers promising possibilities to gain insight into the origin and implications of affective experiences across situations occurring over a period of time. Furthermore, an interesting issue to examine in future studies is to what extent working compulsively hard genuinely relieves negative emotions. If so, negative affect may increase one's level of workaholism by providing an additional incentive for working compulsively. Finally, future research should point out to what extent performance-related cognitions are dependent upon factors such as personality and work environment.

This would provide a more complete account of which groups are at risk for workaholism, but also provides an understanding of why workaholics set high performance standards and derive their self-esteem from their performance.

### **Practical implications**

The results of this thesis have practical implications for occupational health professionals, organizations, and (workaholic) employees. For occupational health professionals, the results suggest that REBT offers a promising intervention strategy for workaholics. As far as irrational beliefs are concerned, we recommend that when treating workaholics, the focus should be on disputing the workaholic's performance standards and replacing them with more realistic beliefs. Furthermore, our results suggest that targeting interventions on the affective level is in particular a promising approach to facilitating recovery and reducing compulsive work persistence. Finally, occupational health professionals could utilize the Work-related Irrational Beliefs Questionnaire instrument to (1) identify and address irrational beliefs dominating the employee's thinking patterns, (2) evaluate changes in irrational beliefs among workaholics over the course of treatment, and (3) assess the risk of workaholism in their organization.

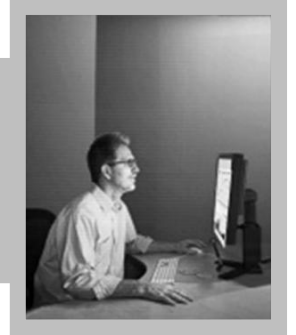
As performance-related beliefs contribute to the risk of workaholism, our results imply that it is important for organizations to be aware of the work-related (irrational) beliefs that their employees hold. In addition, organizations that would like to combat workaholism, should also consider changing the organizational culture if it is competitive and primarily performance-oriented. Organizations could cultivate healthy work behavior among employees by (1) stimulating realistic performance standards, (2) clearly communicating expectations, and (3) creating conditions for employees to switch-off from work during leisure time. Furthermore, as workaholics seem to have low problem awareness, organizations could help workaholics by confronting them with their detrimental behavior and encourage them to engage in counseling programs.

On the individual level, our results suggest that when an employee is driven by high, self-imposed performance standards and when his or her work behavior is associated with negative emotions, this might be a sign of an underlying workaholic tendency. In that case, an employee has to be alert to the impact of his or her negative emotions at the end of the workday on the urge to continue working. In addition, workaholic employees need to find assistance for developing a true and stable sense of self-esteem, and not one that is contingent on their achievements and success at work. Working long hours by itself is not necessarily a problem, at least when enjoyment is the underlying reason to do so and when the work behavior is associated with positive emotions.

## **Conclusion**

This thesis has established that cognitions and emotions play an important role in workaholism, work engagement and recovery. Taken together, our results contributed to our *understanding* of workaholism by identifying some of its major antecedents, notably, performance-related cognitions and negative affect, thereby setting the stage for *changing* it into healthier work behavior.

# Samenvatting





## Introductie

Een groot aantal mensen investeert relatief veel tijd in hun werk. Sommige mensen die extreem veel werken doen dit eenvoudigweg voor hun plezier; het weerspiegelt hun bevrologenheid in werk. Dergelijke bevrologen werknemers werken met passie en halen veel voldoening uit hun werk, en werken daarom meer uren dan nodig is. Bevrologenheid verwijst naar een positieve gemoedstoestand van opperste voldoening ten aanzien van het werk, die bestaat uit drie dimensies: (1) vitaliteit, (2) toewijding en (3) absorptie in het werk. Extreem hard werken kan echter ook een teken zijn van werkverslaving. In plaats van te worden gedreven door bevrologenheid, of door externe factoren, zoals financiële problemen, een slecht huwelijk, sociale druk of loopbaanontwikkeling, wordt een typische werkverslaafde gemotiveerd door een obsessieve interne drang die hij of zij niet kan weerstaan. In dit proefschrift maken we onderscheid tussen twee centrale kenmerken van werkverslaving: (1) een sterke innerlijke drang om te werken, en (2) excessief hard werken. Samenvattend definiëren we werkverslaving als een onweerstaanbare innerlijke drang om hard te werken. In tegenstelling tot bevrologenheid lijkt werkverslaving negatieve gevolgen te hebben voor het individu, zijn of haar familie en de organisatie. Daarom kunnen zowel de workaholic en zijn of haar (werk)omgeving baat hebben bij het voorkómen en tegengaan van werkverslaving. Aangezien eerdere studies hebben aangetoond dat er geen verschil is in het aantal werkuren van workaholics en bevrologen werknemers, kunnen we ervan uitgaan dat er sprake is van een verschil in hun motivatie om hard te werken. Ondanks het feit dat de wetenschappelijke aandacht voor werkverslaving toeneemt, hanteren bestaande empirische studies over het algemeen eenvoudige, beschrijvende, correlatieve onderzoeksdesigns die weinig inzicht bieden in onderliggende psychologische mechanismen. Het doel van dit proefschrift was dan ook om antecedenten van werkverslaving te onderzoeken vanuit een theoretisch kader dat ook praktische mogelijkheden biedt voor het behandelen van werkverslaving. Met behulp van het *Mood-as-Input-model* (MAI-model) en een cognitieve benadering op basis van Rationeel-Emotieve Gedragstherapie, hebben we ons in dit proefschrift gericht op de cognitieve en affectieve antecedenten van werkverslaving. Zoals beschreven in Hoofdstuk 1 luidt onze probleemstelling: "Welke affectieve en cognitieve factoren dragen bij aan werkverslaving?" Om deze algemene vraag te beantwoorden, hebben we vier specifieke onderzoeksvragen geformuleerd.

## Belangrijkste bevindingen en theoretische implicaties

*Onderzoeksvraag 1. Hoe zijn stemming en stopregels gerelateerd aan werkverslaving en bevrologenheid?*

In Hoofdstuk 2 en 3 werd het MAI-model als een verklarend theoretisch kader

toegepast om onderscheid te maken tussen de verschillende onderliggende redenen die workaholics en bevlogen werknemers motiveren om hard te werken. Het MAI-model gaat ervan uit dat, afhankelijk van de gehanteerde stopregel, zowel een negatieve als een positieve gemoedstoestand kan leiden tot volharding met een bepaalde (werk)activiteit. Wanneer mensen beoordelen of zij nog van de betreffende activiteit genieten (*een plezier-stopregel*), zullen zij een positieve stemming interpreteren als een aanwijzing dat ze er nog plezier in hebben, wat hen doet volharden in datgene waarmee ze bezig zijn. Echter, wanneer mensen beoordelen of zij genoeg hebben gedaan (*een genoeg-stopregel*), interpreteren zij een negatieve stemming als een teken van ontevredenheid, hetgeen eveneens leidt tot volharding. In overeenstemming met de principes van het MAI-model, verwachten we dat workaholics de genoeg-stopregel gebruiken, terwijl bevlogen werknemers gebruik zullen maken van de plezier-stopregel bij hun volharding. Daarnaast toetsen we de hypothese dat werkverslaving positief gerelateerd is aan een negatieve stemming, terwijl bevlogenheid positief gerelateerd is aan een positieve stemming. We verwachten bovendien dat de interpretatie van de negatieve stemming door workaholics, en de beoordeling van de positieve stemming door de bevlogen werknemers, in combinatie met hun stopregel (dat wil zeggen de interacties tussen stemming en stopregel), hun volharding in werk kunnen stimuleren.

In Hoofdstuk 2 werden de relaties tussen stemming en stopregels aan de ene kant en werkverslaving en bevlogenheid aan de andere kant onderzocht, gebruikmakend van een gelegenheidssteekproef van 173 werknemers. De resultaten toonden aan dat werkverslaving inderdaad positief gerelateerd is aan een negatieve stemming en aan het gebruik van een genoeg-stopregel. Daarnaast lieten de resultaten eveneens een positief verband zien tussen bevlogenheid en het ervaren van een positieve stemming, maar geen verband tussen bevlogenheid het gebruik van een plezier-stopregel. In tegenstelling tot onze verwachtingen, lieten de analyses geen significante interactie zien tussen een negatieve stemming en de genoeg-stopregel op werkverslaving, noch een significante interactie tussen een positieve stemming en de plezier-stopregel op bevlogenheid. Dit betekent dat noch workaholics, noch bevlogen werknemers hun stemming als input voor hun stopregels gebruiken om te bepalen wanneer te stoppen of verder te werken. Desondanks hebben we gevonden dat workaholics een negatieve stemming ervaren, terwijl bevlogen werknemers een positieve stemming ervaren, en dat workaholics gebruik maken van de genoeg-stopregel voor het bepalen van hun volharding met werk. Om meer kennis te vergaren over de bruikbaarheid van het MAI-model voor het verklaren van het verschil in werkmotivatatie tussen workaholics en bevlogen werknemers, voerden we een nieuwe studie uit, welke is



beschreven in het volgende hoofdstuk.

In Hoofdstuk 3 hebben we opnieuw het MAI-model gehanteerd om het verschil in volharding in werk tussen workaholics en bevlogen werknemers te verklaren. We maakten ditmaal gebruik van een homogene steekproef van 270 werknemers van een Nederlands trainings- en adviesbureau. Gezien het feit dat zowel workaholics als bevlogen werknemers een specifieke focus lijken te hebben op doorgaan in plaats van stoppen met werken, is het aannemelijk dat redenen om te stoppen met werken verschillen van redenen om door te gaan met werken. Dus in plaats van *algemene* stopregels te meten, hebben we een onderscheid gemaakt tussen redenen om te stoppen en redenen om door te gaan met werken. Hiervoor ontwikkelden we de Werk Persistentieregels Checklist (WoPeC), een vragenlijst die onderscheid maakt tussen regels om te stoppen ("stopregels") en regels om door te gaan ("continuatieregels") met werk, welke samen "persistentieregels" worden genoemd. Resultaten van een Confirmatieve Factor Analyse ondersteunde de veronderstelde vier-factor structuur van de WoPeC: (1) genoeg-continuatieregels, (2) plezier-continuatieregels, (3) genoeg-stopregels, en (4) plezier-stopregels. Uit een vervolganalyse bleek dat het gebruik van een genoeg-continuatie regel en het gebruik van een plezier-continuatieregels gerelateerd zijn aan respectievelijk workaholicisme en bevlogenheid. Genoeg- en plezier-stopregels waren daarentegen niet gerelateerd aan werkverslaving noch aan bevlogenheid. Bovendien werd gevonden dat een negatieve stemming positief gerelateerd was aan werkverslaving, terwijl een positieve stemming werd geassocieerd met bevlogenheid. Echter, de verwachte interacties tussen stemming en persistentieregels voor werkverslaving en bevlogenheid werden wederom niet aangetoond.

Kortom, de resultaten van Hoofdstuk 2 en 3 bieden geen ondersteuning voor een *mood-as-input* proces waarbij workaholics gebruik maken van hun negatieve stemming als een signaal van hoeveel ze gedaan hebben, en waarbij bevlogen werknemers hun positieve stemming peilen om te beoordelen in welke mate ze nog steeds plezier hebben in hun werk. In Hoofdstuk 8 speculeren we dat het ontbreken van de interacties tussen stemming en persistentieregels kan worden toegeschreven aan (1) het gebrek aan robuustheid van het MAI-model in het algemeen, (2) de toepassing van het MAI-model op werkgedrag, (3) de kenmerken van de gebruikte steekproeven (4) het moment van meten, en (5) de onderzoeksopzet. De resultaten laten desondanks zien dat stemming en persistentieregels op zichzelf nuttig kunnen zijn voor het verklaren van verschillen in de motivatie die ten grondslag ligt aan werkverslaving en bevlogenheid. Immers, onze bevindingen ondersteunen de veronderstelling dat workaholics en bevlogen werknemers, hoewel ze op het eerste gezicht niet lijken te verschillen met betrekking tot hun werkgedrag, verschillende redenen hebben om voortdurend te

werken. Workaholics blijven werken vanwege het gevoel dat ze niet genoeg werk voltooid hebben. Ze worden gedreven door het verlangen om te voldoen aan hun eigen en andermans verwachtingen, ogenschijnlijk zonder rekening te houden met het feit of ze al dan niet plezier in hun werk hebben. Daarentegen blijven bevlogen werknemers werken omdat ze plezier hebben in hun werk; zij lijken te worden gedreven door de voldoening die ze uit hun werk halen. Daarnaast laten onze resultaten zien dat er een duidelijk verschil is in stemming tussen workaholics en bevlogen werknemers; eerstgenoemden ervaren over het algemeen een negatieve stemming, terwijl laatstgenoemden een positieve gemoedstoestand hebben. Dit is in overeenstemming met het idee dat werkverslaving wordt beschouwd als een inherent “slechte” vorm, en bevlogenheid een in essentie “goede” vorm van arbeidsmotivatie.

*Onderzoeksvraag 2. Welke typen werkgerelateerde cognities zijn gerelateerd aan werkverslaving?*

In Hoofdstuk 2 en 3 hebben we aangetoond dat workaholics beoordelen of ze genoeg hebben gedaan om al dan niet door te gaan met werken. Veel onderzoekers hebben gespeculeerd over eventuele andere overtuigingen en veronderstellingen die ervoor zouden kunnen zorgen dat workaholics zoveel tijd en energie te steken in hun werk. In Hoofdstuk 4 en 5 hebben we geprobeerd om de invloed van een breder scala aan werk-gerelateerde irrationele cognities op werkverslaving te onderzoeken. In Hoofdstuk 4 werd een schaal ontwikkeld om vier typen werk-gerelateerde irrationele overtuigingen te meten, die verondersteld werden relevant te zijn voor werkverslaving, en welke de Werkgerelateerde Irrationele Overtuigingen Vragenlijst (Work-related Irrational Beliefs Questionnaire; WIB-Q) is genoemd. Uit resultaten van het onderzoek onder een gelegenheidssteekproef van 913 werknemers is gebleken dat deze vragenlijst een betrouwbare vier-factorstructuur heeft, die betrekking heeft op irrationele overtuigingen ten aanzien van: (1) prestatie-eisen, (2) goedkeuring van collega's, (3) falen, en (4) controle. De resultaten lieten zien dat workaholics voornamelijk onrealistisch hoge prestatie-eisen hebben met betrekking tot zichzelf. Tegen onze verwachting in, hebben workaholics niet de neiging om vast te houden aan irrationele overtuigingen met betrekking tot goedkeuring van collega's, falen of controle over hun werksituatie. Blijkbaar is het gedrag van de workaholic het resultaat van een sterke prestatiedrang, en niet van externe sociale bekrachtiging, een overschatting van de gevolgen van vervelende gebeurtenissen, en ook zeer waarschijnlijk niet het gevolg van het slecht kunnen omgaan met onzekerheden in het werk.

In Hoofdstuk 5 hebben we geprobeerd om onze eerdere onderzoeksresultaten te integreren. We hebben het effect van werk-gerelateerde

cognities onderzocht (dat wil zeggen, de genoeg-continuatieregels en een op prestatie gebaseerde zelfwaarde) op beide dimensies van workaholisme (dat wil zeggen, excessief werken en compulsief werken). We gebruikten een *full panel design* bestaande uit twee metingen met een tijdsinterval van 6 maanden in een steekproef van 191 werknemers van een Nederlandse universiteit. Het bleek dat een genoeg-continuatieregels en een op prestatie gebaseerde zelfwaarde bij baseline voorspellende factoren zijn voor een compulsieve werkdrang. Het gebruik van een genoeg-continuatieregels was de enige voorspeller van excessief werken een half jaar later. Een analyse van de tegengestelde relaties toonde aan dat een compulsieve werkdrang bij baseline toekomstig gebruik van de genoeg-continuatieregels voorspelt, hetgeen aangeeft dat het één bijdraagt aan het ontstaan en de instandhouding van het andere.

Kortom, de resultaten van de studies die worden beschreven in Hoofdstuk 4 en 5 laten zien dat workaholics vooral gevoelig zijn voor prestatiegerelateerde cognities (d.w.z. prestatie-eisen, genoeg-continuatieregels en een op prestatie gebaseerde zelfwaarde). Met andere woorden, de drang van workaholics lijkt een manifestatie van geïnternaliseerde externe normen. Nog specifieker, workaholics moeten presteren om zichzelf te kunnen accepteren en respecteren als persoon.

*Onderzoeksvraag 3. Hoe zijn emoties gerelateerd aan herstelervaringen en werkuren en is dit anders voor workaholics dan voor niet-workaholics?*

Dankzij hun drang om hard te werken, besteden workaholics veel tijd en energie aan het werk, waardoor er weinig tijd overblijft voor andere dingen. Als gevolg hiervan lijken workaholics hun behoefte aan herstel te verwaarlozen. In Hoofdstuk 2 en 3 werd aangetoond dat workaholics geneigd zijn om een negatieve stemming te hebben. Gezien de aanwijzingen uit andere studies dat negatieve emoties invloed kunnen uitoefenen op het gedrag en het welzijn van werknemers, hebben we onderzocht in welke mate emoties zijn gerelateerd aan het herstelproces van workaholics versus non-workaholics. Om deze vraag te beantwoorden, hebben we in Hoofdstuk 5 eerst onderzocht in hoeverre werkverslaving gerelateerd is aan tekenen van onvoldoende herstel, dat wil zeggen, symptomen van burn-out. Hoewel er aanwijzingen zijn dat werkverslaving kan leiden tot burn-out, is dit tot nu toe niet longitudinaal getoetst. In Hoofdstuk 5 wordt aangetoond dat dwangmatig werken ongunstige gevolgen heeft in termen van ernstige uitputting, maar op hetzelfde moment samen met excessief werken, ook een gevolg is van uitputting. Dit suggereert dat werkverslaving en burn-out onderdeel zijn van een zogenaamde “loss cycle” waarin het één het ander versterkt. Des te meer reden om ons te concentreren op de herstelprocessen van workaholics, omdat voldoende herstel dit circulaire proces wellicht kan onderbreken en dus burn-out kan

voorkomen. In Hoofdstuk 6 werden de relaties tussen workaholisme, herstel en negatieve emoties onder de loep genomen in een steekproef van 118 werknemers met gevarieerde beroepen. Door deze werknemers te vragen om 5 dagen lang een dagboek bij te houden, onderzochten we het dagelijkse herstelproces van workaholics en niet-workaholics, in het bijzonder kijkend naar de invloed van negatieve emoties. Onze resultaten lieten zien dat workaholics minder herstelervaringen hebben wanneer ze veel negatieve emoties ervaren aan het einde van de werkdag, wat minder het geval is voor niet-workaholics. Er werd ook aangetoond dat workaholics meer tijd besteden aan werkgerelateerde activiteiten tijdens de avond dan niet-workaholics wanneer er een relatief hoog niveau van negatieve emoties ervaren wordt aan het einde van de werkdag. Ten slotte werd gedemonstreerd dat gebrekkig herstel tijdens de avonduren leidt tot meer negatieve emoties en minder positieve emoties de volgende ochtend, voor zowel workaholics als niet-workaholics.

Kortom, de resultaten van Hoofdstukken 5 en 6 tonen aan dat workaholics onvoldoende herstellen en dat negatief affect daarbij een belangrijke rol lijkt te spelen. Aangezien het hebben van negatieve emoties aan het einde van de werkdag volharding in werk stimuleert voor workaholics, en niet voor niet-workaholics, lijkt dwangmatig hard werken voor workaholics een manier te zijn om te ontsnappen aan de ervaren negatieve gemoedstoestand. Bovendien is gevonden dat workaholics (maar ook niet-workaholics) 's ochtends meer negatieve emoties en minder positieve emoties ervaren als *gevolg* van onvoldoende herstelervaringen de avond ervoor. Deze bevindingen benadrukken het belang van herstelervaringen gedurende de avonduren.

*Onderzoek vraag 4. Welke soorten interventies zijn het meest geschikt voor het verminderen van werkverslaving?*

Om deze vraag te beantwoorden, hebben we een systematisch literatuuronderzoek uitgevoerd. De uitkomst laat zien dat er verschillende preventie- en interventiestrategieën mogelijk zijn voor het aanpakken van werkverslaving. Gebaseerd op de uitkomsten van interventiestudies gericht op andere (gedrags)verslavingen, lijkt het toepassen van de principes van cognitieve therapie en gedragstherapie door middel van uitgebreide behandelprogramma's, zoals Rationeel Emotieve Gedragstherapie, de meest veelbelovende manier om werkverslaving te behandelen. Dit is overeenkomstig met onze definitie van werkverslaving, dat wil zeggen dat werkverslaving zowel een cognitieve (compulsief werken) als een gedragsmatige (excessief werken) component heeft. Het is ook in lijn met onze bevindingen dat rigide overtuigingen (rationeel aspect) en negatief affect (emotioneel aspect) een centrale rol spelen in het stimuleren van

werkverslaafd gedrag. Verder wordt in dit hoofdstuk uiteengezet dat *online* interventies een aantal voordelen hebben ten opzichte van traditionele interventies voor de behandeling van workaholics, omdat ze een aantal typische barrières ondervangen die relevant lijken voor workaholics (bijv. gebrek aan tijd). Op basis van deze overwegingen, hebben we een internetinterventie voor workaholics ontwikkeld welke is gebaseerd op de principes van de cognitieve gedragstherapie, “Verbeter de balans tussen werk en privé” genaamd. Deze interventie is ontworpen met als doel om een gezonde werk-privé balans onder workaholics te bevorderen en om hun compulsieve werkdrang te verminderen door hen kennis en vaardigheden bij te brengen die nodig zijn voor gedragsverandering. Als gevolg van een lage respons, was de steekproef echter te klein om conclusies te trekken over de effectiviteit van de interventie.

### **Aanbevelingen voor toekomstig onderzoek**

Aan de hand van de rol van affect en cognities hebben we meer inzicht gekregen in de verschillen in werkmotivatatie tussen workaholics en bevlogen werknemers. Meer empirisch onderzoek is echter nodig om onze kennis over dit onderwerp verder te verdiepen. Wij suggereren daarom dat het interessant zou zijn om in toekomstige studies uitgebreider te onderzoeken of persistentieregels en stemming oorzaken, correlaties, of consequenties zijn van werkverslaving respectievelijk bevlogenheid. Dergelijk onderzoek kan nieuwe theoretische inzichten opleveren ten aanzien van de verschillende onderliggende persistentiemechanismen die een rol spelen bij werkverslaving en bevlogenheid, en kunnen leiden tot gedetailleerde, praktische strategieën om werkverslaving te voorkomen. Het is bovendien noodzakelijk dat meer onderzoek wordt uitgevoerd naar de verschillende implicaties van negatief affect voor werkverslaving. Omdat negatief affect een breed construct is, dat bestaat uit een aantal verschillende emoties (bijv. verdriet, boosheid), zou het relevant zijn om te onderzoeken welke specifieke emoties verband hebben met werkverslaving. De “event-sampling” onderzoeksmethode kan helpen om in kaart te brengen in welke situaties deze emoties ontstaan, en wat hiervan de gevolgen zijn. Bovendien is het een interessante kwestie om in toekomstig onderzoek na te gaan in hoeverre compulsief werken daadwerkelijk vermindering biedt van negatief affect. Als dat het geval is, zouden negatieve emoties kunnen resulteren in werkverslaving doordat ze dwangmatig werken stimuleren. Ten slotte moet toekomstig onderzoek uitwijzen in welke mate prestatiegerelateerde cognities afhankelijk zijn van factoren zoals persoonlijkheid en werkomgeving. Dit zou een beter inzicht bieden in de risicofactoren voor workaholisme, maar ook meer duidelijkheid over waarom workaholics hoge eisen stellen aan zichzelf en hun gevoel van eigenwaarde ontleen aan hun prestaties.

### **Praktische implicaties**

De resultaten van dit proefschrift kunnen praktische implicaties hebben voor arbeidsdeskundigen, organisaties en (werkverslaafde) werknemers. Met betrekking tot arbeidsdeskundigen impliceren de resultaten van ons literatuuronderzoek dat Rationeel Emotieve Gedragstherapie een veelbelovende interventiestrategie is voor workaholics. Wat irrationele overtuigingen betreft, zou bij de behandeling van workaholics de nadruk moeten liggen op het cognitief uitdagen van hun irrationale prestatie-eisen en deze te vervangen door meer realistische overtuigingen. Bovendien laten onze resultaten zien dat vooral interventie op het affectieve niveau een veelbelovende aanpak is om het herstelproces van workaholics te bevorderen en hun dwangmatige werkvolharding te verminderen. Tot slot zouden arbeidskundigen gebruik kunnen maken van de Werkgerelateerde Irrationale Overtuigingen Vragenlijst om (1) dominante irrationele overtuigingen te identificeren en te beïnvloeden, (2) veranderingen te evalueren in irrationele overtuigingen onder workaholics gedurende hun behandeling, en (3) een inschatting te maken van het risico op werkverslaving in de betreffende organisatie.

Gezien het feit dat prestatiegerelateerde overtuigingen bijdragen aan het risico op werkverslaving, lijken organisaties er baat bij te hebben om zich bewust te zijn van de werkgerelateerde (irrationele) overtuigingen die hun werknemers hebben. Daarnaast zouden organisaties die werkverslaving willen tegengaan ook moeten overwegen om hun organisatiecultuur te veranderen wanneer deze wordt gekenmerkt door competitie en prestatiegerichtheid. Organisaties kunnen gezond werkgedrag onder werknemers bevorderen door (1) het stimuleren van realistische prestatie-eisen, (2) het duidelijk communiceren van verwachtingen, en (3) het scheppen van voorwaarden die werknemers helpen om “los te komen” van hun werk in hun vrije tijd. In ogenschouw nemend dat workaholics een beperkt probleeminzicht lijken te hebben, kunnen organisaties workaholics helpen door hen te confronteren met hun ongezonde werkgedrag en hen aan te moedigen om deel te nemen aan interventieprogramma's.

Op individueel niveau laten onze resultaten zien dat wanneer een werknemer wordt gedreven door hoge, zelfopgelegde prestatienormen, en wanneer zijn of haar werkgedrag wordt geassocieerd met negatieve emoties, dit een teken kan zijn van een onderliggende neiging tot werkverslaafd gedrag. In dat geval is de werknemer erbij gebaat alert te zijn op de impact van negatieve emoties aan het einde van de werkdag op zijn of haar drang om te blijven werken. Daarnaast lijken workaholics ondersteuning nodig te hebben bij het ontwikkelen van een stabiel gevoel van eigenwaarde, dat wil zeggen, een gevoel van zelfwaarde dat niet afhankelijk is van prestaties en succes op het werk. Veel tijd besteden aan het werk

hoeft niet noodzakelijkerwijs een probleem te vormen, tenminste als plezier de onderliggende reden is om dit te doen en wanneer het werk gedrag wordt geassocieerd met positieve emoties.

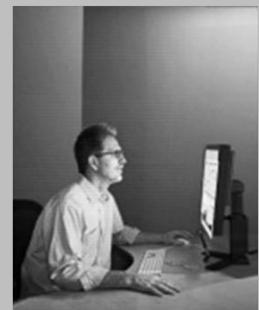
### **Conclusie**

Dit proefschrift heeft aangetoond dat cognities en emoties een belangrijke rol spelen bij werkverslaving, bevlogenheid en werkgerelateerde herstelprocessen. Alles overziend, dragen onze onderzoeksresultaten bij aan een beter *begrip* van werkverslaving door het onderscheiden van een aantal belangrijke antecedenten, met name prestatiegerelateerde cognities en negatief affect, hetgeen de weg baant voor het *veranderen* van werkverslaving in gezonder werkgedrag.





# Dankwoord



## *My Tribute*

How can I say thanks  
For all the things You have done for me?  
Things so undeserved, yet You gave  
To prove Your love for me  
The voices of a million angels  
Could not express my gratitude  
All that I am, and ever hope to be  
I owe it all to Thee

To God be the glory

*~Andraé Crouch~*



## Dankwoord

Achter mijn naam op de kaft staat in onzichtbare inkt de uitdrukking “et al”, afkorting van het Latijnse “et alii”, oftewel “en anderen”. Aan mijn onderzoek en aan de totstandkoming van dit proefschrift hebben een groot aantal mensen, allemaal op hun eigen manier, een bijdrage geleverd. Enkele mensen wil ik in het bijzonder bedanken.

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