

**Understanding the dark and bright sides
of heavy work investment:
Psychological studies on workaholism and work engagement**

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**Understanding the dark and bright sides
of heavy work investment:
Psychological studies on workaholism and work engagement**

**Naar een beter begrip van de positieve en negatieve kanten
van hard werken:
Psychologisch onderzoek naar werkverslaving en bevlogenheid
(met een samenvatting in het Nederlands)**

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit Utrecht op gezag van de
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door

Ilona van Beek

geboren op 13 juni 1985 te Amersfoort

Promotoren: Prof.dr. W.B. Schaufeli
Prof.dr. T.W. Taris

“One can live magnificently in this world if one knows how to work and how to
love...”

Troyat, 1967, p. 158



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Chapter 1
General introduction



1.1 Heavy work investment

About 74 percent of the Dutch employees works overtime (Koppes et al., 2012). Although the majority of employees works only "incidentally" overtime, about 27 percent works "structurally" overtime. These numbers have not changed notably during the last years (e.g., Smulders, Van den Bossche, & Hupkens, 2007; Koppes, Klein Hesselink, Mol, & Van den Bossche, 2009), suggesting that a substantial group of employees spends more hours on working than formally agreed upon.

This phenomenon has been fostered by particular changes in the world of work in the last decades. Due to global competition, a high pace of innovation, the tendency to assign employees to projects rather than to jobs, and the economic crisis, a growing group of employees worries about losing their job (Koppes et al., 2012). Employees must compete with others, they are asked to do more in less time, they need to brush up their knowledge continuously, and they should invest in their social networks (Frese, 2008). Furthermore, modern ICT allows modern employees to work wherever and whenever they want. Today, more employees work at home than a decade ago and also the number of hours spent on work at home has increased the last decade (Koppes et al., 2012). So, it seems that the boundary between work and private life is blurred (Frese, 2008). For instance, it has become rather usual that employees read work-related emails on their smart phones in leisure time. These developments make work demanding and stimulate heavy work investment in terms of time *and* effort (Frese, 2008). Hence, heavy work investment is currently an important issue and will undoubtedly remain an important issue in the future.

Employees may invest heavily in work for different reasons (Taris & Schaufeli, 2007). Some may work hard to pay a high mortgage. Others may work hard because they have a bad marriage or because they want to make a career. In these cases, employees work hard for the sole purpose of achieving some kind of reward. However, this seems not to apply to workaholic employees and engaged employees. Workaholic employees work hard due to a strong and irresistible inner drive (Schaufeli, Taris, & Van Rhenen, 2008): they are "pushed" to work. In contrast, engaged employees are characterized by passion for their work (Schaufeli & Bakker, 2010): they are "pulled" to work. The *principal aim* of the present thesis is to clarify the psychological mechanisms underlying workaholism and work engagement. Furthermore, working hard for different reasons may have different consequences. The *second aim* of the present thesis is therefore to examine how workaholism and work engagement relate to four possible work outcomes: burnout, turnover intention, job satisfaction, and performance.

This introductory chapter starts with a brief discussion of workaholism and work engagement. Thereafter, three different perspectives – a trait-based

perspective, a developmental perspective, and a situational-based perspective – are addressed from which the motivational origins of workaholism and work engagement are examined. This chapter then presents a heuristic model showing how each of the two types of heavy work investment could relate to the work outcomes. To conclude, an outline of the present thesis is provided.

1.2 Workaholism versus work engagement¹

The term “workaholism” was coined in 1971 by the American pastoral counselor Warren E. Oates. In his role as pastoral counselor, Oates worked with alcoholics and realized that his own attitude toward work was much like his clients’ attitude toward alcohol. In his book *Confessions of a workaholic*, Oates (1971) defined workaholism as “the compulsion or the uncontrollable need to work incessantly” (p. 10). This compulsion or uncontrollable need is so strong that it can be harmful for one’s health, can diminish one’s happiness, and may negatively affect the quality of one’s interpersonal relations and social functioning (Schaufeli, Taris, & Bakker, 2006). Therefore, many scholars view workaholism as a phenomenon that is inherently bad (e.g., Cherrington, 1980; Robinson, 2007).

However, this view is not universally shared. From an organizational perspective, some scholars consider workaholism as a positive phenomenon (Scott, Moore, & Miceli, 1997). For instance, based on an interview study, Machlowitz (1980) linked workaholism to satisfaction and high productivity. Likewise, Korn, Pratt, and Lambrou (1987) called workaholic employees “hyper-performers”. Furthermore, Peiperl and Jones (2001) stated that workaholic employees find their work enjoyable and get a lot out of it. More recently, Baruch (2011) argued that workaholism is not only linked to high productivity, but also that workaholic employees may function as a role model to other employees in competitive environments. However, it should be noted that these positive views are generally based on research that was conducted years ago and that used a qualitative research design (Scott et al., 1997).

Other scholars discriminate between “good” and “bad” types of workaholism, and provide an explanation for the contrary opinions regarding workaholism. The most important proponents of this view are Spence and Robbins (1992), who introduced the so-called workaholic triad. To classify different types of employees, they use three dimensions, including work involvement (i.e., the degree to which employees are highly committed to their work and spend much time on it),

¹ This section is based on Taris, T.W., Van Beek, I., & Schaufeli, W.B. (resubmitted). The beauty versus the beast: On the motives of engaged and workaholic employees. In I. Harpaz and R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes and future directions*. New York: Taylor & Francis/Routledge.

drive (i.e., the degree to which employees feel forced to work due to inner pressures), and work enjoyment (i.e., the degree to which employees experience their work as enjoyable). The combination of these three dimensions lead to eight different types of employees and three of these types refer to a specific kind of workaholism: (a) work addicts, who are high in involvement and drive, but low in enjoyment; (b) enthusiastic workaholics, who are high in involvement, drive, and enjoyment; and (c) work enthusiasts, who are high in involvement and enjoyment, but low in drive.

In the present thesis, Spence and Robbins' (1992) work addicts (apparently the "bad" type of workaholism) are regarded as the "real" workaholics. Workaholism is defined as "the tendency to work excessively hard and being obsessed with work, which manifests itself in working compulsively" (Schaufeli, Shimazu, & Taris, 2009, p. 322). This definition covers the three core features of workaholism identified by Scott, Moore, and Miceli (1997). First, workaholic employees spend an excessive amount of time on their work activities when given the discretion to do so. Second, workaholic employees are unwilling to disengage from their work activities and persistently think about their work. They even think about their work when they are not at work. Third, workaholic employees work beyond what is reasonably be expected from them in order to meet economic or organizational requirements. In a sense, the third feature is an extension of the first two features. It emphasizes that workaholic employees work hard due to an inner compulsion and not due to external factors such as financial rewards or an overtime-promoting organizational culture. Hence, the two main aspects of workaholism are working excessively and working compulsively (Schaufeli, Taris, & Van Rhenen, 2008).

Interestingly, Spence and Robbins' (1992) description of the typical work enthusiast (apparently the "good" type of workaholism) strongly resembles that of the engaged employee (cf., Snir & Harpaz, 2012). In comparison with workaholism, work engagement is a relatively new concept that has emerged in the wake of the positive turn that occupational health psychology took at the end of the last century (Schaufeli & Bakker, 2013). Work engagement is defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Vigor refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence. Dedication refers to being strongly involved in one's work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption refers to being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work. Like work enthusiasts, engaged employees lack the strong compulsion to work hard that is typical for

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workaholism. However, engaged employees do work hard because they enjoy their work (cf. Schaufeli et al., 2001).

Instead of discriminating between “good” and “bad” types of workaholism, the present thesis discriminates between workaholism as an overall bad type of heavy work investment and work engagement as an overall good type of heavy work investment (cf. Schaufeli et al., 2006). Such a distinction contributes to conceptual clarity and agrees with Porter’s (1996) recommendation to return to the origin of the term workaholism as a starting point for future research.

1.3 The why of workaholism and work engagement

The principal aim of the present thesis is to examine the psychological mechanisms underlying workaholism and work engagement, that is, *why* workaholic and work engaged employees work hard. Few studies have addressed this issue, and even fewer studies have explicitly compared the motivational correlates of these two types of heavy work investment. A plausible explanation for this void is that traditional models address work-related stress and ignore heavy work investment. Although the job demands-resources model describes how work-related factors influence work engagement, it provides only limited insight into the psychological processes that play a role (Schaufeli & Taris, 2013). In the absence of a theoretical model that addresses the motivation underlying heavy work investment, the present thesis presents a first attempt to explain workaholism and work engagement using existing theories from different psychological areas. More specifically, the present thesis addresses the motivational origins of workaholism and work engagement from three different perspectives, namely (1) a *trait-based perspective*, based on Reinforcement Sensitivity Theory (Gray, 1990) and Regulatory Focus Theory (Higgins, 1998), (2) a *developmental perspective*, drawing on Attachment theory (Bowlby, 1988), and (3) a *situational-based perspective* using Self-Determination Theory (Deci & Ryan, 2000).

1.3.1 A trait-based perspective

It is conceivable that workaholic and engaged employees can be distinguished from other employees and from each other on basis of their personality (McMillan, O’Driscoll, & Burke, 2003). Personality refers to “the propensity to show a specific pattern of behavior or mood across different situation” (Van der Linden, Beckers, & Taris, 2007, p. 891). Two theories that relate to personality are Reinforcement Sensitivity Theory (RST; Gary, 1990) and Regulatory Focus Theory (RFT; Higgins, 1997; 1998).

RST explains the nature of individual differences in personality at the neurobiological level. RST posits that anxiety and impulsivity are two basic

dimensions of personality that correspond with individual differences in sensitivity of two neurobiological systems to specific sets of stimuli (Carver & White, 1994). The behavioral inhibition system (BIS) is reactive to conditioned stimuli associated with punishment, nonreward, and novelty, and inhibits movement toward goals that may lead to negative outcomes. In contrast, the behavioral approach system (BAS) responds to conditioned stimuli associated with reward, non-punishment, and escape from punishment. It stimulates movement toward goals that may lead to positive outcomes (Franken, Muris, & Rassin, 2005).

Employees face threatening and rewarding stimuli and situations at work every day and RST suggests that activation of the BIS and BAS determines their reaction to these stimuli and situations. Therefore, it is likely that these two systems play a role when it comes to workaholism and work engagement. That is, workaholic and engaged employees may work hard to avoid bad outcomes or to achieve positive outcomes. This leads to the following question:

Question 1: How is response sensitivity (i.e. BIS- and BAS-activation) related to heavy work investment (i.e. workaholism and work engagement)?

RFT (Higgins, 1997; 1998) is another theory that explains the nature of individual differences. This theory assumes that individuals approach pleasure and avoid pain, and that individuals use different strategies to achieve this. Specifically, two motivational systems are distinguished: the promotion system and the prevention system. These systems differ in terms of needs to be satisfied, goals to be pursued, and psychological situations deemed salient (Brockner & Higgins, 2001). Basically, RFT assumes that prevention-focused individuals seek to satisfy the need for security. They are sensitive to the pleasurable absence or painful presence of negative outcomes and are likely to avoid mismatches to desired goals (i.e., safety and non-losses). In contrast, promotion-focused individuals seek to satisfy the need for growth and development, and are sensitive to the pleasurable presence or painful absence of positive outcomes. They are likely to approach matches to desired goals (i.e., hopes, wishes, and aspirations).

Since the promotion and prevention systems are differently linked to how individuals pursue different goals, RFT may be useful in examining the motivational correlates of workaholism and work engagement. Therefore, the following question is formulated:

Question 2: How is regulatory focus (i.e., prevention and promotion focus) related to heavy work investment (i.e., workaholism and work engagement)?

Although RST and RFT both involve motivational dispositions, these theories also differ from each other (Elliot & Thrash, 2010). Whereas RST concerns psychological processes that are rooted in neurobiology, RFT concerns psychological processes that are rooted in socialization.

1.3.2 A developmental perspective

Workaholic and engaged employees may also be distinguished from other employees and from each other on the basis of their attachment styles that have developed during infancy.

Attachment theory (Bowlby, 1988) describes how individual differences in attachment to important others influence behavior. Attachment theory postulates that infants need to explore their physical and social environment to gain knowledge of and become skilled at interacting with it (Hazan & Shaver, 1990). Since exploration is not without risk, a caregiver who is available and responsive is desirable. Attachment theory distinguishes different kinds of affective bonds (i.e., attachment styles) that can develop between infants and caregivers. These affective bonds will affect future relationships and work experiences (Hazan & Shaver, 1990). That is, work activities can be considered as a kind of exploration behavior and a source of competence, and close, romantic relationships can serve as a secure base from which employees can operate. Employees who experience their partner as sufficiently available and responsive (i.e., who are securely attached) will enjoy their work and will be successful at work. However, employees who worry about their partner's availability and responsiveness (i.e., who are insecurely attached) work for the sake of pleasing others. They may work to gain admiration from others and may fear rejection by others due to poor performance. Alternatively, insecurely attached individuals may fully concentrate on their work to avoid being close with others. This leads to the following question:

Question 3: How are attachment styles (secure or insecure attachment) related to heavy work investment (i.e. workaholism and work engagement)?

1.3.3 A situational-based perspective

The third perspective on the motivational antecedents of workaholism and work engagement draws on the idea that specific work- and environmental characteristics

satisfy particular psychological needs, and that the extent to which these needs are met determines the type of employee motivation. This is the basic tenet of Self-Determination Theory (SDT; Deci & Ryan, 2000),

SDT proposes that individuals are active, growth-oriented organisms. This growth-oriented tendency requires fulfilment of three innate psychological needs: the needs for autonomy (i.e., the need for experiencing freedom of choice and initiating behavior), competence (i.e., the need for accomplishing challenging tasks successfully), and relatedness (i.e., the need for experiencing positive relationships with others). SDT posits that motivation, optimal functioning, and psychological well-being are affected by the extent to which the social (or work) environment allows satisfaction of and individuals can find or create the conditions necessary to satisfy these needs (Deci & Ryan, 2000).

SDT makes a distinction between intrinsic and extrinsic motivation. Individuals who are intrinsically motivated for an activity perform that activity because they find it interesting, enjoyable, and satisfying. They engage in that activity for its own sake and act with a full sense of volition (Gagné & Deci, 2005; Ryan & Deci, 2000a). Therefore, intrinsically motivated behaviors are considered self-determined. To foster intrinsic motivation, need satisfaction is required. Conversely, individuals can be externally motivated for an activity. In this case, an activity is performed because of its instrumental value (Gagné & Deci, 2005; Ryan & Deci, 2000b). For externally motivated employees, the outcome of an activity is important and differs from the activity itself.

SDT distinguishes among four different types of extrinsic motivation: external regulation, introjected regulation, identified regulation, and integrated regulation. Depending on the degree to which the three innate psychological needs are fulfilled, the type of extrinsic motivation varies as well as the extent to which behavior is self-determined (Deci & Ryan, 2000). Externally regulated behavior is motivated by external contingencies involving threats of punishments, and material or social rewards. This type of behavior is regulated by the social environment and, thus, fully controlled (i.e., non-self-determined). Introjected regulation is a product of an internalization process, in which individuals adopt external standards of self-worth and social approval without fully identifying with them. Thus, individuals must comply with partially internalized external standards that may conflict with their personal preferences (Ryan & Deci, 2000a). Therefore, introjected regulation is experienced as somewhat controlled. When individuals also accept and identify themselves with the underlying value of a particular activity, their motivational regulation is identified. Since some ownership of behavior is experienced, identified regulation is to some extent considered as autonomous (i.e., self-determined). When the underlying value of a particular behavior is experienced as consistent with other

important values and constitutes an integral part of the self, the regulation is integrated (Ryan & Deci, 2000a). Individuals experience their behavior completely as their own and, thus, as fully autonomous. However, integrated regulation will not be examined in the present thesis because it shows a strong resemblance with intrinsic regulation (Ryan & Deci, 2000a) and because it is psychometrically difficult to differentiate between items that measure integrated regulation and items that measure the other types of motivation (Gagné et al., 2010).

It is possible that these different types of motivation explain why workaholic and engaged employees work hard. Therefore, the following question will be examined:

Question 4: How is motivational regulation (i.e., external, introjected, identified, and intrinsic regulation) related to heavy work investment (i.e., workaholism and work engagement)?

1.4 The possible consequences of workaholism and work engagement

Work engagement is primarily associated with positive outcomes (e.g., Salanova, Agut, & Peiró, 2005; Schaufeli & Bakker, 2004; Schaufeli, Taris, & Van Rhenen, 2008). However, when it comes to workaholism and its outcomes, research findings are not always consistent, which is most likely due to the different views on the conceptualization of workaholism outlined previously. Therefore, the second aim of the present thesis is to examine how workaholism and work engagement relate to four different work outcomes: burnout, turnover intention, job satisfaction, and performance. The effort-recovery model (Meijman & Mulder, 1998) may explain possible relations between the two types of heavy work investment and work outcomes directly or indirectly.

The effort-recovery model (Meijman & Mulder, 1998) focuses on the consequences of high effort expenditure for health and well-being. Basically, the model proposes that goal-directed behavior requires effort expenditure that leads to two types of outcomes. On the one hand, it may bring about the desired goal (e.g., successful completion of a work task); on the other hand, it will result in short-term physiological (e.g., high blood pressure) and psychological (e.g., fatigue) reactions. These short-term reactions are adaptive: they signal that recovery from effort expenditure is needed. Recovery takes typically place when individuals have a rest (e.g., engage in leisure activities or take a break) or switch to other – less demanding – activities. However, persistent effort expenditure in combination with insufficient opportunities to recover (i.e., sustained activation) leads to an accumulation of physiological and psychological strain (i.e., allostatic load), and an increased need for recovery (Hockey, 1997). In the long run, these reactions may turn into serious

consequences, such as burnout (Sonnentag, 2001; Ursin & Eriksen, 2004). Therefore, burnout can be studied as an outcome of (lack of) recovery (e.g., Taris et al., 2006). Burnout is a state of exhaustion in which employees are cynical about the value of their occupation and doubtful of their capacity to perform (Maslach, Jackson, & Leiter, 1996). Furthermore, employees with a high need for recovery will lack the energy to participate in family life (Demerouti, Taris, & Bakker, 2007). They are likely to use their leisure time to rest and to recharge their energy levels, while their family members will expect their full participation in family life. This may lead to emotionally loaded situations and stress at home, and may prevent effective recovery. Chronic feelings of exhaustion then lead to more work pressure, and a vicious circle may evolve (Demerouti, Geurts, & Kompier, 2004). In the long run, this may lead to job dissatisfaction and probably an increased intention to quit one's job. Moreover, exhaustion affects employees' performance in a negative way by reducing their ability to concentrate, to divide attention between tasks, and to solve problems. Therefore, it is conceivable that high effort expenditure and the extent to which employees are able to recover are also related to turnover intention, job satisfaction, and performance.

Although there is no study exclusively devoted to the possible consequences of workaholism and work engagement in this thesis, different studies address this issue. Therefore, statements can be made about the possible consequences of these two types of heavy work investment. The following overarching question is formulated:

Question 5: How is heavy work investment (i.e., workaholism and work engagement) related to burnout, turnover intention, job satisfaction, and performance?

1.5 The outline of this thesis

The present thesis is organized according to the three different perspectives on the motivational origins of workaholism and work engagement.

Chapter 2 consists of a study that is based on Gray's Reinforcement Sensitivity Theory (RST; Gray, 1990). It is expected that BIS-activation is positively associated with overcommitment to one's studies and that BAS-activation is positively associated with study engagement. Study activities bear a strong resemblance with work activities: both students and employees are involved in structured, coercive activities that require substantial effort to bring about specific goals (cf. Salanova, Schaufeli, Martínez, & Bresó, 2010). Hence, from a psychological perspective the activities of employees and students are equivalent and may likewise be considered as "work". Therefore, in this thesis,

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overcommitment to one's studies and study engagement are investigated as well as workaholism and work engagement. Furthermore, this study examines how the two types of heavy work investment relate to three different outcomes: exhaustion, the intention to quit one's studies, and academic performance. It is expected that overcommitment to one's studies is positively associated with exhaustion and the intention to quit one's studies, but negatively associated with performance. It is also hypothesized that study engagement is negatively related to exhaustion and the intention to quit one's study, and positively related to performance. The hypotheses are tested in a cross-sectional study among students ($N = 565$).

Chapter 3 consists of a study that is based on Regulatory Focus Theory (RFT; Higgins, 1997; 1998). It is expected that a prevention focus is positively associated with workaholism and that a promotion focus is positively associated with work engagement. Furthermore, this study includes three different work outcomes: turnover intention, job satisfaction, and performance. It is assumed that workaholism is positively associated with turnover intention, and negatively associated with job satisfaction and job performance. Also, it is hypothesized that work engagement is negatively related to turnover intention, but positively related to job satisfaction and job performance. The hypotheses are tested in a cross-sectional study among employees in the financial services sector ($N = 680$).

Chapter 4 consists of a study that is based on Attachment theory (Bowlby, 1988). It is hypothesized that workaholism is positively associated with insecure attachment and that work engagement is positively associated with secure attachment. Also, this study explored the relation between the two types of heavy work investment and in-role and extra-role performance, as work outcomes. It is expected that workaholism is negatively linked to in-role and extra-role performance, and work engagement is positively linked to in-role and extra-role performance. The hypotheses are tested in a cross-sectional study among a heterogeneous group of employees ($N = 201$).

Chapters 5-7 consist of three studies that are based on Self-Determination Theory (Deci & Ryan, 2000). Specifically, *Chapter 5* presents a study that compares four different types of employees – workaholic employees, engaged employees, engaged workaholics (i.e., employees who are both workaholic and engaged), and non-workaholic/non-engaged employees (i.e., employees who are non-workaholic and non-engaged) – on their motivation, working hours, and levels of burn-out. It is expected that both workaholic employees and engaged workaholics are more strongly driven by controlled motivation (i.e., external regulation and introjected regulation) than engaged employees and non-workaholic/non-engaged employees. Furthermore, it is expected that engaged employees and engaged workaholics are more strongly driven by autonomous motivation (i.e., identified regulation and

intrinsic motivation) than workaholic employees and non-workaholic/non-engaged employees. As regards working hours, it is assumed that non-workaholic/non-engaged employees spend least time and engaged workaholics spend most time on work. Lastly, it is assumed that workaholic employees experience more burnout and engaged employees experience less burnout than other employees. These hypotheses are tested in a cross-sectional study among visitors of an internet site addressing career-related issues ($N = 1,246$).

Chapter 6 contains a study that examines the relation between different types of motivation on the one hand and workaholism, work engagement, and burnout on the other hand. It is expected that workaholism and burnout are positively associated with controlled motivation, and that work engagement is positively associated with autonomous motivation. These hypotheses are tested in a cross-sectional study among Chinese health care professionals (544 nurses and 216 physicians).

Chapter 7 builds on the studies reported in Chapter 5 and Chapter 6, and comprises a study that explores how need satisfaction affects motivation across time, and how motivation affects workaholism and work engagement across time. It is hypothesized that need satisfaction has a negative effect on external regulation, but a positive effect on introjected regulation, identified regulation, and intrinsic regulation. Furthermore, it is expected that introjected regulation and identified regulation have a positive effect on workaholism, while intrinsic regulation has a negative effect on workaholism. Additionally, it is assumed that identified regulation and intrinsic regulation have a positive effect on work engagement. These hypotheses are tested in a two-wave study among visitors to an internet site addressing career-related issues ($N = 314$).

Chapter 8 consists of a general discussion. In this chapter, the results and conclusions of the empirical studies are summarized, and their theoretical implications, practical implications, and limitations are discussed. This chapter concludes with recommendations for future research.

1.6 Concluding comment

By examining the motivational origins of workaholism and work engagement from three different perspectives (a trait-based perspective, a developmental perspective, and a situational-based perspective), the present thesis aims to fill a void in the literature. So far previous research has not addressed this issue quantitatively. Furthermore, it aims to provide insight in the relation between the two types of heavy work investment and several outcomes (burnout, turnover intention, job satisfaction, and performance), because neither theorizing nor research findings

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agree. Hence, the present thesis contributes to a better understanding of the dark and bright sides of heavy work investment.

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Chapter 2
BIS- and BAS-activation and study outcomes:
A mediation study

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2.1 Introduction

Building on Gray's (1987) original Reinforcement Sensitivity Theory, this study examines how individual differences in activation of the behavioral inhibition system (BIS) and behavioral approach system (BAS) influence students' functioning. We investigate whether the relations between BIS- and BAS-activation and three academically relevant outcomes (exhaustion, the intention to quit one's studies, and academic performance) are mediated through two forms of heavy study investment (overcommitment to one's studies and study engagement). By doing so, we aim to provide insight into the motivational antecedents and consequences of heavy effort expenditure.

2.1.1 Personality

Gray's (1987) Reinforcement Sensitivity Theory (RST) explains the nature of individual differences at the neurobiological level. It posits that anxiety and impulsivity are two basic dimensions of personality that correspond with individual differences in the sensitivity of two neurobiological systems to specific sets of stimuli. The behavioral inhibition system (BIS) responds to anxiety-provoking stimuli (Carver & White, 1994): it is reactive to conditioned stimuli associated with punishment, nonreward, and novelty, and inhibits movement toward goals that may lead to negative outcomes. Hence, the BIS controls aversive motivation. Furthermore, the BIS is associated with negative feelings such as anxiety, frustration, and sadness in response to anxiety-provoking stimuli. The behavioral approach system (BAS) responds to conditioned stimuli associated with reward, nonpunishment, and escape from punishment. It stimulates movement toward goals that may lead to positive outcomes, and impulsivity is the main dimension involved in this system (Franken, Muris, & Rassin, 2005). Hence, the BAS controls appetitive motivation. Furthermore, the BAS is associated with positive feelings such as hope, elation, and happiness (Carver & White, 1994). The third system in Gray's (1987) theory is the fight-flight system (FFS). The FFS is reactive to unconditioned, aversive stimuli and it is associated with defensive aggression or escape behavior (Smillie, Pickering, & Jackson, 2006). This system accounts for the experience of rage and fear, but has never clearly been related to personality.

When revising the original RST, Gray and McNaughton (2000) proposed that the BAS responds to appetitive stimuli, whereas the FFS reacts to aversive stimuli (Corr, 2004). The FFS also incorporates a freeze response and is referred to as the fight-flight-freeze system (FFFS). In the revised RST, the BIS responds to conflict, e.g., situations that include both reward (BAS) and punishment (FFFS) contingencies (Heym, Ferguson, & Lawrence, 2008). When activated, it inhibits ongoing behavior, directs attention to the conflicting sources, and weighs reward

and punishment against each other, leading to approach or avoidance behavior (Keiser & Ross, 2011).

Although these revisions are notable, they are not necessarily at variance with previous understandings of RST (Smillie et al., 2006). Furthermore, it is difficult to distinguish anxiety (BIS) from fear (FFFS) with techniques other than pharmacological methods and direct lesion. Conceptually and psychometrically they are often assumed to be similar: in practice the BIS often implicitly covers both systems. Due to these practical and theoretical reasons, this study draws on Gray's (1987) conceptualization of the RST.

2.1.2 Personality and study effort

BIS- and BAS-sensitivity involve motivational dispositions (Heimpel, Elliot, & Wood, 2006), and may therefore be relevant to students' academic functioning. The present study includes two such dispositions: overcommitment to one's studies and study engagement.

Overcommitment to one's studies involves being obsessed with one's studies and studying compulsively and excessively: it refers to a strong and uncontrollable inner drive to study hard (Schaufeli, Shimazu, & Taris, 2009). Since study activities strongly resemble work activities (both students and employees are involved in structured, coercive activities that require substantial effort to achieve specific goals; Salanova, Schaufeli, Martínez, & Bresó, 2010), study overcommitment is similar to the concept of workaholism.

Low self-esteem and high fear of failure are assumed to underlie working in an obsessive-compulsive manner (Killinger, 2006). These characteristics are also associated with high BIS-activation. Students with high BIS-activation are assumed to be biased toward negative attributes when evaluating themselves and to have strengthened self-protection concerns (Heimpel et al., 2006). They are likely to pursue goals that lead to avoiding negative evaluations or to achieving positive evaluations (Elliot & Church, 1997). To prove their competence and to reduce their concerns about failure, students with high BIS-activation might be overcommitted to their studies (cf. Elliot, McGregor, & Gable, 1999). Therefore, *BIS-activation will be positively associated with overcommitment to one's studies* (Hypothesis 1).

Study engagement is characterized by study-related vigor (i.e., high levels of energy and mental resilience), dedication (i.e., high involvement), and absorption (i.e., being fully concentrated and engrossed in one's studies; Schaufeli, Martínez, Marques-Pinto, Salanova, & Bakker, 2002). This conceptualization is similar to that of work engagement.

High self-esteem, self-efficacy, and optimism stimulate engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). These personal resources

are believed to be influenced by BAS-activation. Students with high BAS-sensitivity are presumed to be biased toward positive attributes when evaluating themselves and to hold self-enhancement concerns (Heimpel et al., 2006). They are likely to pursue goals that are related to the development of competence and task mastery, and that are linked to achieving positive evaluations (Elliot & Church, 1997). This might be reflected in a greater proneness to experience engagement (see also Elliot et al., 1999; Wolters, 2004). Since BAS-activation is positively related to employee engagement (Van der Linden, Beckers & Taris, 2007), *BAS-activation will be positively associated with study engagement* (Hypothesis 2).

2.1.3 Study effort and outcomes

Meijman and Mulder's (1998) effort-recovery model proposes that goal-directed behavior requires effort expenditure that leads to two types of outcomes: it may bring about the desired goal, and it will result in short-term physiological and psychological reactions. These short-term reactions signify that recovery from effort expenditure is needed. Recovery occurs when individuals have a rest or switch to other activities. However, prolonged high effort expenditure combined with insufficient opportunities for recovery means that additional effort is needed to reach one's goals. Consequently, physiological and psychological reactions accumulate and the need for recovery increases. Ultimately, this may have adverse consequences for health and well-being.

Following this reasoning, differences in BIS- and BAS-activation may affect students' exhaustion levels through the two forms of heavy study investment discussed above. Students who are overcommitted to their studies study excessively and compulsively, and should find it difficult to disengage from their study activities (Scott, Moore, & Miceli, 1997). This might be explained by their hypothesized BIS-sensitivity. They might be continuously reminded of negative possibilities that tend to provoke threat appraisals and anxiety (Heimpel et al., 2006). Consequently, they may have little time for recovery (Scott et al., 1997), leading to the accumulation of physiological and psychological reactions, possibly resulting in exhaustion. Hence, *overcommitment to one's studies will be positively associated with exhaustion* (Hypothesis 3).

Engaged students possess high levels of energy and mental resilience (Schaufeli et al., 2002). Furthermore, previous research found that engaged workers experience little work-home interference and do spend time on leisure activities (Schaufeli et al., 2001). Thus, engaged students should be able to disengage from their study activities. Their expected BAS-sensitivity might facilitate the development of a positive self-view in several ways, including directing students toward positive objects and opportunities (e.g., social relationships) in the

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environment (Heimpel et al., 2006). Consequently, engaged students will recover sufficiently from their effort expenditure and they will be less vulnerable to exhaustion than others. Thus, *study engagement will be negatively associated with exhaustion* (Hypothesis 4).

Further, students who are overcommitted to their studies will find their study activities neither enjoyable nor interesting (Van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012), and will struggle with unfavorable study conditions (Schaufeli, Taris, & Van Rhenen, 2008), including high demands (e.g., study load). Their expected sensitivity to stimuli associated with punishment, nonreward, and novelty might account for these findings. Consequently, *overcommitment to one's studies will be positively associated with the intention to quit one's studies* (Hypothesis 5).

Conversely, engaged students will personally value their study activities and consider them enjoyable and satisfying (Van Beek et al., 2012). Furthermore, they report favorable environmental conditions (Salanova et al., 2010): they can draw upon abundant resources and they experience relatively low demands. Their expected sensitivity to stimuli associated with reward, nonpunishment, and escape from punishment might explain these findings. Therefore, *study engagement will be negatively associated with the intention to quit one's studies* (Hypothesis 6).

As regards performance, individuals who engage in an activity because of self-protection concerns are distracted from performing effectively (Gagné & Deci, 2005). They might doubt their ability to achieve their goals and could therefore not be committed to these (Erez & Judge, 2001). Since negative self-evaluations and self-protection concerns are related to obsessive-compulsive study behavior, overcommitted students may perform worse than others. Hence, *overcommitment to one's studies will be negatively associated with academic performance* (Hypothesis 7).

Conversely, individuals with positive self-regard and who find their activities attractive, put relatively much effort in reaching their goals and are therefore likely to succeed (Erez & Judge, 2001). Thus, *study engagement will be positively associated with academic performance* (Hypothesis 8). Figure 2.1 summarizes our hypotheses.

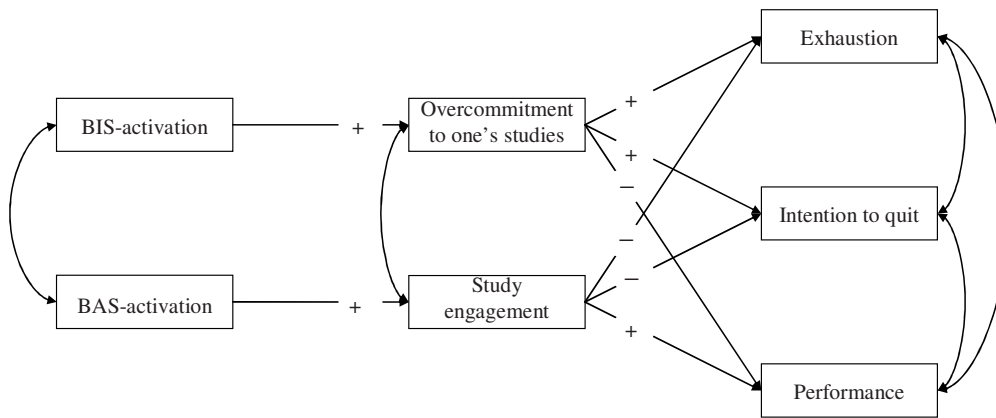


Figure 2.1. Research model.

2.2 Method

2.2.1 Participants

Students were recruited from different faculties and studies. They were asked individually whether they would like to complete a questionnaire about their study experiences. They received no compensation for their participation. The sample included 565 Dutch university students (68.1% female, M_{age} was 21.0 years, $SD = 2.2$). Most participants (82.5%) were enrolled in an undergraduate/bachelor program.

2.2.2 Instruments

BIS- and *BAS-activation* were measured with Franken et al.'s (2005) Dutch translation of Carver and White's (1994) BIS/BAS Scales. This questionnaire taps the BIS (7 items) and BAS (13 items). According to Carver and White (1994), the BAS-items cover three concepts: fun seeking, reward responsiveness, and drive. Since the distinction among these subscales lacks empirical evidence and relevance (Van der Linden et al., 2007), the overall BAS-scores were used. Items were scored on a 4-point scale (1 = "I do not agree at all", 4 = "I totally agree").

Overcommitment to one's studies was measured with an adaptation of the Dutch Work Addiction Scale (DUWAS; Schaufeli et al., 2009) which taps workaholism among employees. The DUWAS includes two subscales, Working Excessively (9 items) and Working Compulsively (7 items). The items were reworded to refer to the academic context.

To examine the factor structure of this scale, the sample was randomly split into two. Drawing on the first half of the sample ($N = 283$), covariance structure analysis (AMOS; Arbuckle, 2007) showed that a one-dimensional model fitted the data equally well as a two-dimensional model ($\chi^2(N = 283, df = 104) = 405.2$, TLI = .75, CFI = .78, RMSEA = .10; $\Delta\chi^2(N = 283, df = 1) = 3.65$, $p > .05$). The more parsimonious one-factor model was therefore preferred. Items showing low loadings on the latent factor ($< .40$) or high overlap with other items (as evidenced by significant modification indices) were removed. The resulting one-factor model fitted the data well ($\chi^2(N = 283, df = 14) = 39.34$, TLI = .93, CFI = .95, RMSEA = .08). Table 2.1 presents the scale items and their loadings. The reliability of this scale was good ($\alpha = .82$). This 7-item, one-factor model was then cross-validated using the second half of the sample ($N = 282$). A single-factor solution was acceptable ($\chi^2(N = 282, df = 14) = 39.12$, TLI = .93, CFI = .95, RMSEA = .08), as was its reliability ($\alpha = .80$). Summarizing, overcommitment to one's studies can reliably be measured with a 7-item scale (the Dutch Work Addiction Scale for students, DUWAS-S). Items were scored on a 4-point scale (1 = “(almost) never”, 4 = “(almost) always”).

Study engagement was measured with the 9-item Utrecht Work Engagement Scale – Students version (cf. Schaufeli, Martínez et al., 2002; Schaufeli, Bakker & Salanova, 2006). Although this questionnaire taps vigor, dedication, and absorption, engagement can be assessed with a composite score. Items were scored on a 7-point scale (0 = “never”, 6 = “always”).

Exhaustion was measured with the 5-item Exhaustion Scale of the Utrecht Burnout Scale – Student version (Schaufeli & Van Dierendonck, 2000). Items were scored on a 7-point scale (0 = “never”, 6 = “always”).

Intention to quit was measured with 3 items devised by Van Veldhoven and Meijman (1994) to examine employees' turnover intention. These were reworded to refer to student's intention to quit their studies (1 = “completely disagree”, 7 = “completely agree”). E.g., the item “I sometimes think about changing my job” became “I sometimes think about quitting my studies”.

Study performance was measured as the average of the grades participants received for their last four courses (range varying from 1 to 10). Thus, study performance referred to their performance during the six months preceding the present study. This number of grades was chosen because incorporating more grades could reduce the accuracy of this measure due to memory effects, whereas a smaller number might increase the chances of bias due to outliers.

Table 2.1. Items and factor loadings of the DUWAS-S

Items	Exploratory sample N = 283	Confirmatory sample N = 282
I study much harder than my fellow students.*	.59	.44
It is important to me to study hard, even when I do not enjoy it.**	.74	.73
I find myself thinking about my studies even when I want to get away from them for a while.**	.51	.46
I seem to have an inner compulsion to study hard: I have to, whether I want to or not. **	.79	.83
I put myself under pressure with self-imposed deadlines. *	.57	.52
I feel obliged to study hard, even when it is not enjoyable.**	.67	.72
It is hard for me to relax when I am not studying. *	.48	.53

Note. * Item was adapted from the Working Excessively scale, ** Item was adapted from the Working Compulsively scale.

Table 2.2. Means (*M*), standard Deviations (*SD*), internal consistencies (on the diagonal), and correlations between the variables (*N* = 565)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
<i>Personality</i>									
1 BIS-activation	2.84	.57	.81						
2 BAS-activation	3.02	.36	-.10*	.76					
<i>Heavy study investment</i>									
3 Overcommitment to one's studies	2.09	.59	.30**	.05	.81				
4 Study engagement	3.34	.96	-.03	.19**	.23**	.89			
<i>Outcomes</i>									
5 Exhaustion	2.03	1.05	.29**	.03	.42**	-.08	.80		
6 Intention to quit	2.42	1.33	.07	.02	.03	-.34**	.24**	.73	
7 Performance	6.95	.81	.02	-.03	.08	.24**	-.16**	-.15**	-

Note. * $p < .05$, ** $p < .01$.

2.2.3 Statistical analyses

Table 2.2 presents the descriptive statistics. Preliminary analyses indicated that the data were approximately normally distributed.

The hypotheses were tested using covariance structure analysis methods (AMOS; Arbuckle, 2007) and maximum likelihood estimation methods. Our initial model (Figure 2.1) fitted the data well ($\chi^2(N = 565, df = 8) = 29.78$, TLI = .86, CFI = .95, RMSEA = .07). The modification indices suggested an additional direct relation between BIS-activation and exhaustion. This adjusted model fitted the data significantly better than the original model ($\chi^2(N = 565, df = 7) = 13.46$, TLI = .95, CFI = .98, RMSEA = .04; $\Delta\chi^2(N = 565, df = 1) = 16.32$, $p < .05$). Finally, non-significant paths (overcommitment to one's studies \rightarrow performance and intention to quit \leftrightarrow performance) were removed, resulting in a final model that met the criteria for good fit ($\chi^2(N = 565, df = 9) = 17.58$, TLI = .95, CFI = .98, RMSEA = .04).

To examine the indirect effects of BIS- and BAS-activation on exhaustion, intention to quit, and academic performance through overcommitment to one's studies and study engagement, bootstrapping techniques (2,000 iterations) were used (Preacher & Hayes, 2008). When testing the indirect effect of BIS-activation on exhaustion, the path coefficient for the direct effect of BIS-activation on exhaustion was set to zero.

2.3 Results

Figure 2.2 presents the results for the final model, including only statistically significant paths ($p < .05$). Hypothesis 1 stated that BIS-activation would be positively associated with overcommitment to one's studies. Figure 2.2 shows that this hypothesis was confirmed ($\beta = .31$). Furthermore, Hypothesis 2 stated that BAS-activation would be positively associated with study engagement. Likewise, the analyses supported this expectation ($\beta = .18$). Hence, students with high BIS-activation score high on overcommitment, whereas students high on BAS-activation score high on engagement.

Hypotheses 3 and 4 focused on the association between study investment and well-being. As expected, overcommitment to one's studies was positively related to exhaustion ($\beta = .41$), whereas study engagement was negatively linked to exhaustion ($\beta = -.16$; Hypotheses 3 and 4 confirmed).

Hypothesis 5 predicted that overcommitment to one's studies would be positively associated with the intention to quit one's studies. As expected, these variables were positively related ($\beta = .11$). Furthermore, Hypothesis 6 that proposed that study engagement would be negatively associated with the intention to quit one's studies was also supported ($\beta = -.36$).

Lastly, whereas overcommitment to one's studies and academic performance were unrelated (Hypothesis 7 rejected), Hypothesis 8 (that proposed that study engagement would be positively associated with academic performance) was confirmed ($\beta = .24$). Thus, overcommitted students score high on exhaustion and intention to quit, whereas engaged students score low on these two outcomes and high on academic performance.

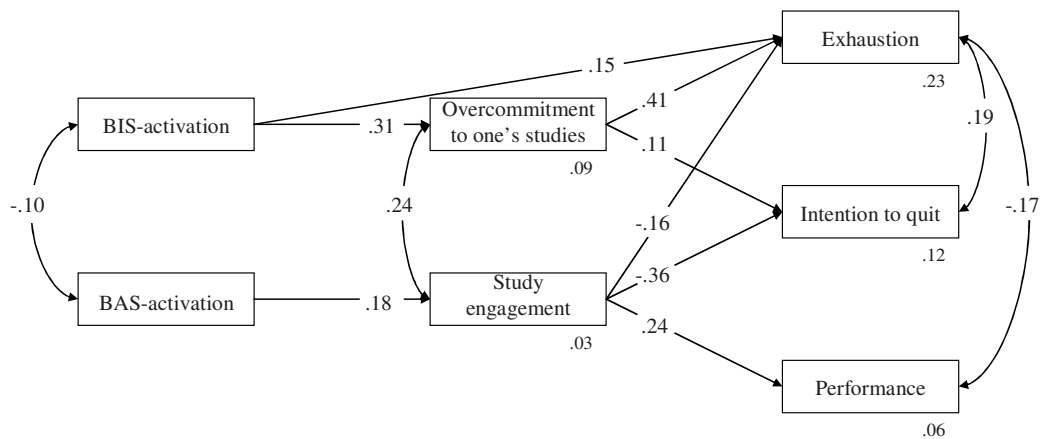


Figure 2.2. Final model with standardized path coefficients and squared multiple correlations. All paths are significant at $p < .05$.

2.3.1 Direct versus indirect effects

We found a direct effect between BIS-activation and exhaustion. Students with high scores on BIS-activation reported higher levels of exhaustion than others ($\beta = .15$). Regarding the indirect effects, Table 2.3 shows that all mediated paths presented in Figure 2.2 were significant. Two main trends are visible. First, the indirect paths linking BIS-activation to exhaustion and to intention to quit via overcommitment to one's studies were positive (indirect effects of $.14$ and $.03$, respectively), indicating that high BIS-activation is associated with negative outcomes. Second, the indirect paths linking BAS-activation to exhaustion and to intention to quit via study engagement were negative (indirect effects of $-.03$ and $-.06$, respectively), whereas the indirect path linking BAS-activation to academic performance via study engagement was positive (an indirect effect of $.04$). Thus, high BAS-activation is related to positive outcomes.

Table 2.3. *Estimates and confidence intervals for the indirect associations (N = 565)*

<i>x</i>	mediator <i>m</i>	outcome <i>y</i>	Bootstrapping		95% CI	
			Estimate	SE	Lower	Upper
BIS-activation	Overcommitment to one's studies	Exhaustion	.14*	.02	.10	.19
		Intention to quit	.03*	.01	.01	.06
BAS-activation	Study engagement	Exhaustion	-.03*	.01	-.05	-.01
		Intention to quit	-.06*	.02	-.10	-.03
		Performance	.04*	.01	.02	.07

Note. * $p < .01$.

2.4 Discussion

Building on Gray's (1987) original Reinforcement Sensitivity Theory, the present study examined how individual differences in BIS- and BAS-activation relate to overcommitment to one's studies and study engagement, and how these two types of heavy study investment relate to exhaustion, the intention to quit one's studies, and academic performance. The main findings are the following.

First, BIS-activation was positively associated with overcommitment to one's studies. Apparently, students who are sensitive to potentially threatening situations and negative outcomes of their behavior, and who are motivated to avoid such situations and outcomes (McNaughton & Corr, 2004) are likely to be overcommitted. Furthermore, BAS-activation was positively associated with study engagement, suggesting that students who are sensitive to positive incentives and who are motivated to achieve positive outcomes are likely to be engaged. Thus, the present study suggests that aversive motivation is accompanied by overcommitment to one's studies and appetitive motivation is accompanied by study engagement.

Second, overcommitment to one's studies was positively associated with exhaustion, whereas study engagement was negatively associated with exhaustion. This supports the reasoning that overcommitted students spend much effort on their studies while taking insufficient opportunities for recovery (Scott et al., 1997), resulting in exhaustion (Meijman & Mulder, 1998). Conversely, engaged students seem less vulnerable to exhaustion, suggesting that they have sufficient opportunities to recover from their effort expenditure (Schaufeli et al., 2001).

Third, overcommitment to one's studies was positively associated with the intention to quit one's studies, whereas study engagement was negatively associated with the intention to quit. Their low levels of intrinsic motivation (Van Beek et al., 2012) and unfavorable study conditions (Schaufeli et al., 2008) might explain why overcommitted students have a relatively strong intention to quit their studies. Since engaged students tend to value and enjoy their study activities (Van Beek et al., 2012), and experience favorable study conditions (Salanova et al., 2010), it is not surprising that they are not planning to quit their studies.

Fourth, study engagement was positively associated with academic performance, possibly due to the same reasons mentioned for the intention to quit one's studies. However, we found no relation between overcommitment to one's studies and academic performance. This disagrees with previous findings among employees that showed that excessive and obsessive-compulsive work behavior is negatively related to subjective performance (Shimazu & Schaufeli, 2009). It is possible that these individuals underrated their performance due to their low self-esteem (Jussim, Coleman, & Nassau, 1987).

Lastly, overcommitment to one's studies and study engagement mediated the relations between BIS- and BAS-activation on the one hand and exhaustion, intention to quit one's studies, and academic performance on the other hand. Specifically, a highly activated BIS was associated with negative outcomes through overcommitment, whereas a highly activated BAS was related to positive outcomes through engagement.

2.4.1 Study limitations

Three main limitations of this study are the following. First, the data were collected using self-reports, meaning that the relations between our study variables may have been overestimated due to common method bias. However, the magnitude of the correlations in Table 2.3 varies considerably, indicating that the relations among the study variables have not been biased by a common underlying process.

Second, this study started from Gray's original RST and Carver and White's corresponding BIS/BAS Scales rather than the revised RST. Following Heym et al. (2008), we examined whether the BIS-scale could be separated into two subscales that tapped the BIS and FSSS concepts needed for testing the revised version of the RST. However, comparison of a one-factor model and a two-factor model did not convincingly support the latter. Furthermore, both subscales related in a similar way to the other study concepts. In addition, even by separating the BIS-scale only a restricted range of behavior would have been covered (Heym et al., 2008). Our findings suggest that research building on the revised RST should employ measures that are devised for testing the revised RST rather than imperfect proxies thereof (cf. Smillie et al., 2006).

Lastly, due to its cross-sectional design, the present study cannot demonstrate causal relations. However, since RST focuses on the biological underpinnings of personality, it seems plausible that BIS- and BAS-activation affects study behavior rather than vice versa. Similarly, it appears reasonable to expect that overcommitment to one's studies and study engagement affect the intention to quit one's studies rather than the reverse: students are unlikely to invest heavily in their studies if they already intend to quit.

2.4.2 Study strengths and implications

The present study has several strengths and implications. First, it provides insight into the biological underpinnings of overcommitment to one's studies and study engagement. As a result, we may better understand why overcommitted and engaged students study hard.

Furthermore, overcommitment to one's studies and study engagement were differentially related to the study outcomes, suggesting that they are two different

Chapter 2

forms of heavy study investment. Therefore, teachers should be vigilant: high commitment to one's studies and high study engagement are fine, but *overcommitment* should be discouraged.

Lastly, our study introduced a brief scale tapping overcommitment to one's studies, which can be used in future research on excessive study behavior. For example, it would be interesting to examine whether overcommitted and engaged students persist in their respective effort expenditures when they enter the labor market. Our findings suggest that stable traits are partly responsible for differences in study behavior. Since study activities are psychologically similar to work activities, we expect that study overcommitment and engagement will "spill over" into the work domain. If confirmed, such findings would further underline the important role of the behavioral inhibition and approach system in everyday life.

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Chapter 2

Chapter 3

Heavy work investment: Its motivational make-up and outcomes

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3.1 Introduction

Although previous research has clearly shown that two types of heavy work investment (i.e., workaholism and work engagement) can be distinguished (e.g., Schaufeli, Taris, & Bakker, 2006; Schaufeli, Taris, & Van Rhenen, 2008), little is known about their underlying motives. Building on Higgins' (1997, 1998) Regulatory Focus Theory (RFT), the present study addresses this issue by examining the motivational correlates of workaholism and work engagement. Furthermore, the present study takes a process approach by investigating whether the associations between motivation and three selected work outcomes (job satisfaction, turnover intention, and job performance) are mediated through workaholism and work engagement. In this way, we aim to increase our understanding of the links between motivation, heavy work investment, and work outcomes.

Workaholism. Workaholism refers to "the tendency to work excessively hard and being obsessed with work, which manifests itself in working compulsively" (Schaufeli, Shimazu, & Taris, 2009, p. 322). Previous research has shown that workaholism is associated with a variety of negative outcomes, such as having poor social relationships outside work, dissatisfaction with life (Bonebright, Clay, & Ankenmann, 2000), job strain, and health complaints (Burke, 2000). However, at present, the relations between workaholism on the one hand and job satisfaction, turnover intention, and job performance on the other hand are still unclear. Specifically, some studies reported positive associations between workaholism and job satisfaction (Burke, 1999; Shimazu & Schaufeli, 2009), whereas other studies found negative relations (e.g., Burke & MacDermid, 1999). As far as turnover intention and job performance are concerned, virtually no empirical research has been carried out that examined their relation with workaholism (Schaufeli, Taris et al., 2006). To our knowledge, only one study examined the association between workaholism and turnover intention, showing that workaholic employees reported a greater intention to quit (Burke & MacDermid, 1999). Furthermore, workaholism appeared to be weakly, but positively related to extra-role performance in one study (Schaufeli, Taris et al., 2006) and negatively to overall job performance in a second study (Shimazu & Schaufeli, 2009). In spite of the inconsistent and limited amount of research, it appears reasonable to consider workaholism as a "bad" type of heavy work investment.

Work engagement. Work engagement refers to a positive, fulfilling, work-related state of mind. It is characterized by high scores on three dimensions: vigor (referring to energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties), dedication (i.e., high work involvement, a sense of significance, and high levels of enthusiasm,

inspiration, pride, and challenge), and absorption (i.e., being fully concentrated and deeply engrossed in one's work; cf. Schaufeli, Salanova, González-Romá, & Bakker, 2002).

Work engagement is mainly associated with positive outcomes, such as organizational commitment (Schaufeli et al., 2008), life satisfaction, mental and physical health (Schaufeli & Salanova, 2007), and personal initiative (Sonnentag, 2003). Further, engaged employees are satisfied with their job (Schaufeli et al., 2008), do not intend to quit their job (Schaufeli & Bakker, 2004), and perform well at work (Bakker & Demerouti, 2008, for an overview). Apparently, work engagement can be considered as a "good" type of heavy work investment.

3.1.1 Work motivation

One important and unanswered question is *why* workaholic and engaged employees work so hard. Since behavior is assumed to arise from (conscious or unconscious) motivations, studying the underlying motivations of workaholism and work engagement may answer this question. A motivational approach that could be useful here is Higgins' (1997, 1998) Regulatory Focus Theory (RFT), which extends the hedonic principle that asserts that individuals approach pleasure and avoid pain. Although the hedonic principle is often used to explain human behavior, it is unclear *how* individuals approach pleasure and avoid pain. RFT addresses this issue by proposing that individuals use different strategies to approach pleasure and to avoid pain. More specifically, RFT distinguishes between two motivational systems: the promotion system and the prevention system. These two systems differ in terms of the focal needs that are attempted to be satisfied, the goals that are pursued, and the psychological situations that matter (Brockner & Higgins, 2001). Promotion-focused individuals seek to satisfy the need for growth and development. They are sensitive to the pleasurable presence or painful absence of positive outcomes and they are likely to approach matches to desired goals, i.e., advancement and gains (hopes, wishes, and aspirations). For instance, a promotion-focused employee who considers good performance as an accomplishment is likely to approach matches to this desired goal by performing extra-role behavior. When desired goals are obtained, promotion-focused individuals experience cheerfulness-related emotions, such as enthusiasm and joy, while failing to obtain these goals leads to dejection-related emotions, such as disappointment and dissatisfaction.

Conversely, prevention-focused individuals seek to satisfy the need for security. They are sensitive to the pleasurable absence or painful presence of negative outcomes and they are likely to avoid mismatches to desired goals, i.e., safety and non-losses (duties, obligations, and responsibilities). For instance, a prevention-focused employee may construe good performance as a responsibility

and is likely to avoid mismatches to this desired goal by ensuring that everything goes perfectly well. For prevention-focused individuals, obtaining desired goals is associated with quiescence-related emotions, such as contentment and calmness, while failing to obtain these goals is linked to agitation-related emotions, such as feeling uneasy and afraid. Thus, RFT proposes that individuals with a promotion focus tend to approach matches to desired goals, whereas individuals with a prevention focus are inclined to avoid mismatches to desired goals.

Workaholism, work engagement, and work motivation. Since the promotion and prevention systems are differently linked to how individuals pursue different goals, RFT could be useful in examining the motivational correlates of workaholism and work engagement. As regards workaholism, there are at least two reasons to believe that workaholism is linked to a prevention focus. First, workaholism is related to a variety of negative personality characteristics, including neuroticism (Burke, Matthiesen, & Pallesen, 2006). Neurotic individuals are likely to report personal insecurity, are prone to experiencing stress, and are strongly affected by negative life events. This suggests that neurotic individuals are sensitive to the absence or presence of negative outcomes and they seem to avoid mismatches to desired goals. Previous research has supported this reasoning, showing that neuroticism relates positively to having avoidance goals (Elliot & Sheldon, 1997, 1998). Since workaholic employees are inclined to be neurotic, they are likely to pursue avoidance goals as well. Second, it has been proposed that workaholism develops in response to feelings of low self-worth and insecurity (Mudrack, 2006). As individuals with a negative self-view tend to pursue avoidance or prevention goals, i.e., to avoid negative outcomes (Judge, Bono, Erez, & Locke, 2005), it is likely that workaholic employees are propelled by avoidance motivation which is the hallmark of a prevention focus. Hence, both lines of reasoning lead to the expectation that *workaholism is positively associated with having a prevention focus* (Hypothesis 1).

Conversely, work engagement is positively related to a variety of personal resources, such as self-esteem, self-efficacy, and optimism (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007), indicating that engaged employees are confident about their capabilities and optimistic about the future. Individuals with a positive self-view are inclined to pursue self-concordant goals (Elliot & Sheldon, 1998; Elliot, Sheldon, & Church, 1997). Therefore, they are likely to pursue approach goals, i.e., positive outcomes like learning and development, or accomplishment through the achievement of aspirations (Judge et al., 2005). This suggests that engaged employees are propelled by approach motivation that is characteristic of a promotion focus. Hence, *work engagement is positively associated with having a promotion focus* (Hypothesis 2).

3.1.2 Work outcomes

The outcomes of workaholism and work engagement have been examined more frequently than their underlying motivations. However, it is still unclear how workaholism relates to job satisfaction, turnover intention, and job performance. For instance, workaholic employees spend much time on work and tend to work overtime (Schaufeli, Shimazu et al., 2009), but they do not find their work activities interesting, enjoyable, or satisfying (Van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012; Van Beek, Taris, & Schaufeli, 2011). At the same time, they experience relatively high job demands (such as workload) and relatively low job resources (such as autonomy and social support from their supervisors; Schaufeli et al., 2008). Job demands are associated with physiological and psychological costs, and can become job stressors when they require sustained effort from which one cannot adequately recover, while job resources have the potential to reduce job demands and foster learning and development (Bakker & Demerouti, 2007). Thus, workaholic employees must stand their ground in an unfavorable work situation that may hinder their personal growth and development (cf. Karasek & Theorell, 1990). Worse still, workaholic employees do not receive more rewards for their efforts than others (Burke, 2001). Therefore, we expect that *workaholism is negatively associated with job satisfaction* (Hypothesis 3) and *positively associated with turnover intention* (Hypothesis 4).

Workaholic employees work hard to preserve and enhance feelings of self-worth and self-esteem (Van Beek et al., 2012). It is suggested that such motives detract from effective job performance (Gagné & Deci, 2005). Unfavorable work characteristics may also affect job performance negatively. With relatively poor job resources at their disposal (Schaufeli et al., 2008), workaholic employees are less able to reduce the potentially negative impact of the high job demands that they experience (Bakker, Demerouti, & Verbeke, 2004) and have little access to the motivational potential that job resources may have (Bakker & Demerouti, 2007). Also, workaholic employees seem to have little opportunity to recover adequately from their work sufficiently (Van Beek et al., 2011). They not only work excessively, they also think about their work continuously, i.e., even when they are not working (Schaufeli, Shimazu et al., 2009). Compared to others, they report more work-home interference (Schaufeli, Bakker, Van der Heijden, & Prins, 2009). Over time, workaholic employees may become exhausted due to their high effort expenditure at work (Taris, Schaufeli, & Verhoeven, 2005). Furthermore, because workaholic employees display perfectionistic tendencies (Kanai, Wakabayashi, & Fling, 1996), they may find it difficult to delegate work tasks to their colleagues (Bonebright et al., 2000). Consequently, workaholic employees may not always achieve their work goals. Hence, it is expected that *workaholism is negatively associated with job*

performance (Hypothesis 5).

Unlike workaholic employees, engaged employees work hard because they want to. They value and enjoy their work activities, find these activities interesting, and derive satisfaction from working (Van Beek et al., 2011; Van Beek et al., 2012). Furthermore, engaged employees experience job resources and may report relatively high job demands (Schaufeli et al., 2008; Van Beek et al., 2012). Such a work situation stimulates personal growth, development, and learning (Bakker & Demerouti, 2007). Moreover, engaged employees experience a good work-home balance (Schaufeli et al., 2008). Therefore, we expect that *work engagement is positively associated with job satisfaction* (Hypothesis 6) and *negatively with turnover intention* (Hypothesis 7).

Since engaged employees experience their work as valuable, enjoyable, interesting, and satisfying, they are likely to go beyond what is necessary to fulfil their duty and to be successful in their job (Judge et al., 2005). At the same time, the resources that engaged employees experience in their jobs are likely to motivate them to go beyond their duties too and to perform work activities that are beneficial for the organization as a whole (Bakker & Demerouti, 2007; Bakker et al., 2004). Furthermore, having access to performance feedback, and support from supervisors and colleagues (two important job resources) contribute to good job performance (Bakker & Demerouti, 2007). Hence, it is expected that *work engagement is positively related to job performance* (Hypothesis 8). Figure 3.1 presents our research model.

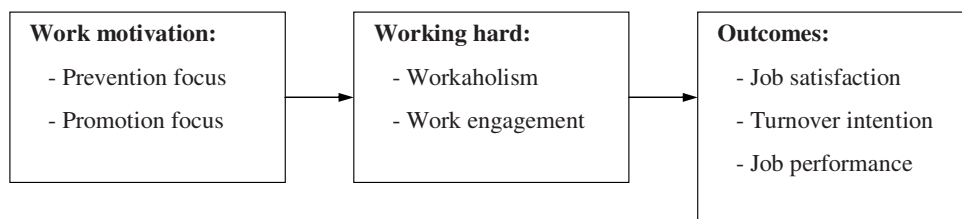


Figure 3.1. Heuristic research model.

3.2 Method

3.2.1 Sample and Procedure

Participants were recruited in a large organization in the banking industry. We contacted the HR manager of this organization who gave permission to collect data. Different HR officers invited in total 2,023 employees who held different positions, such as sales manager, advisor financial markets, controller, test manager,

commercial support manager, and project manager. Participants received an e-mail with the request to fill out a digital questionnaire on work motivation. They were informed about the nature and general aim of the study and they were told that participation was voluntary.

Of the 2,023 employees that were approached, 680 employees (464 males, $M_{\text{age}} = 41.1$ years, $SD = 9.2$, and 216 females, $M_{\text{age}} = 37.8$ years, $SD = 7.9$) responded to our call (33.6% response rate). The majority held a college or university degree (82.2%). On average, they had been working in their current position for 3.4 years ($SD = 3.7$) and worked 42.6 hours ($SD = 8.4$) per week.

3.2.2 Instruments

All study variables were measured with established, validated Dutch scales. *Workaholism* was measured with the Dutch Work Addiction Scale (DUWAS; Schaufeli, Shimazu et al., 2009), which consists of two subscales: Working Excessively and Working Compulsively. *Working excessively* was measured with 9 items ($\alpha = .75$), such as “I seem to be in a hurry and racing against the clock”, whereas *Working compulsively* was measured with 7 items ($\alpha = .78$), including “I feel that there’s something inside me that drives me to work hard” (1 = “(almost) never”, 4 = “(almost) always”). These subscales are adapted from Robinson’s (1999) Compulsive Tendencies scale and Spence and Robbins’ (1992) Drive scale, respectively.

Work engagement was measured with the 9-item short form of the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006). *Vigor* was measured with 3 items ($\alpha = .87$), including “At my work, I feel strong and vigorous”, *Dedication* was measured with 3 items ($\alpha = .90$), such as “I am enthusiastic about my job”, and *Absorption* was measured with 3 items ($\alpha = .71$) as well, including “I am immersed in my work” (0 = “never”, 6 = “always”).

Work motivation was measured with the promotion and prevention scales developed by Lockwood, Jordan, and Kunda (2002), and translated and adapted to the work situation by Brenninkmeijer, Demerouti, Le Blanc, and Van Emmerik (2010). *Prevention Focus* was measured with 9 items ($\alpha = .76$), including “I am focused on preventing negative events in my work.” *Promotion Focus* was also measured with 9 items ($\alpha = .80$), such as “I often think about how I will achieve success in my work” (1 = “not at all true of me”, 5 = “very true of me”).

Job satisfaction was measured with 3 items ($\alpha = .94$) devised by Van Veldhoven and Meijman (1994), including “I am satisfied with my current job” (1 = “completely disagree”, 7 = “completely agree”).

Turnover intention was also measured with 4 items ($\alpha = .85$) devised by Van Veldhoven and Meijman (1994), such as “I intend to change jobs during the

next year" (1 = "completely disagree", 7 = "completely agree").

Finally, *job performance* was measured with an item from the World Health Organization Health and Work Performance Questionnaire (HPQ; Kessler et al., 2003). Respondents were asked to rate their overall work performance during the last four weeks on a self-anchoring scale, ranging from 0 to 10 (representing the worst and best possible work performance a person could have on his/her job, respectively). This one-item scale can be considered a valid measure of overall job performance (cf. Kessler et al., 2003; Shimazu & Schaufeli, 2009).

3.2.3 Statistical analyses

Table 3.1 shows the mean values, standard deviations, and inter-correlations for all study variables. Structural Equation Modeling methods in AMOS (Arbuckle, 2007) were used to test our hypotheses simultaneously. Maximum likelihood estimation was used and the goodness-of-fit of the tested models was evaluated using the χ^2 test statistic, the Normed Fit Index (NFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). Values larger than .90 for NFI and CFI and .08 or lower for RMSEA signify acceptable model fit (Byrne, 2009).

Bootstrapping techniques (2,000 iterations) were used to examine the indirect effects of the regulatory foci on job satisfaction, turnover intention, and job performance through workaholism and work engagement. The indirect effect of a predictor variable x (i.e., a prevention or promotion focus) on an outcome variable y (turnover intention, job satisfaction, and performance) through a presumed mediator m (workaholism and work engagement) was examined by setting the path coefficient for the direct effect of the predictor variable x on the outcome variable y to zero, together with the path coefficients of all other paths linking x to y (that is, the paths involving the second mediator variable, cf. Preacher & Hayes, 2008; Ten Brummelhuis, Van der Lippe, & Kluwer, 2010). An indirect effect is rejected when the 95% confidence interval (CI) includes zero.

Table 3.1. Means (*M*), standard deviations (*SD*), and correlations between the variables with internal consistencies (Cronbach's α) on the diagonal (*N* = 680)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
<i>Working hard</i>												
1 Working excessively	2.13	.44	.75									
2 Working compulsively	1.89	.51	.68**	.78								
3 Vigor	4.70	1.07	-.08*	-.14**	.87							
4 Dedication	4.77	1.16	.00	-.12**	.78**	.90						
5 Absorption	4.16	1.15	.09*	.05	.66**	.72**	.71					
<i>Work motivation</i>												
6 Prevention focus	2.99	.55	.25**	.36**	-.19**	-.16**	-.01	.76				
7 Promotion focus	3.71	.45	.19**	.14**	.27**	.31**	.35**	-.01	.80			
<i>Work outcomes</i>												
8 Job satisfaction	5.60	1.20	-.11**	-.24**	.62**	.74**	.47**	-.21**	.20**	.94		
9 Turnover intention	3.74	1.46	.16**	.17**	-.39**	-.47**	-.30**	.09*	-.03	-.59**	.85	
10 Job performance	7.87	.87	-.07	-.10*	.27**	.26**	.19**	-.12**	.19**	.28**	-.13**	–

Note. * $p < .05$, ** $p < .01$.

3.3 Results

3.3.1 Testing the research model

The research model (Model 1) fitted the data well, $\chi^2(N = 680, df = 27) = 209.06$, NFI = .93, CFI = .94, RMSEA = .10, thus providing a good starting point for further analysis. Inspection of the modification indices suggested that paths between prevention focus and work engagement, promotion focus and workaholism, promotion focus and turnover intention, and promotion focus and job performance should be added. This modified model (Model 2) fitted the data well, $\chi^2(N = 680, df = 23) = 149.74$, NFI = .95, CFI = .96, RMSEA = .09, and significantly better than Model 1, $\Delta\chi^2(N = 680, df = 4) = 59.32, p < .001$. Finally, all non-significant paths were removed, resulting in the final model (Model 3) that is shown in Figure 3.2. The final model met the criteria for acceptable fit as well, $\chi^2(N = 680, df = 25) = 149.79$, NFI = .95, CFI = .96, RMSEA = .09.

3.3.2 Testing the hypotheses

Work motivation, workaholism, and work engagement. Hypothesis 1 stated that workaholism would be positively associated with having a prevention focus. The findings displayed in Figure 3.2 confirm this hypothesis by showing a positive effect for this association ($\beta = .38$). Analogously, Hypothesis 2 proposed that work engagement would be positively associated with having a promotion focus. In line with this hypothesis, we found a positive effect for this association ($\beta = .33$). Somewhat unexpectedly, we also found that high scores on workaholism were associated with high scores on promotion focus ($\beta = .17$) and that high scores on work engagement were linked to low scores on prevention focus ($\beta = -.16$). Thus, workaholic employees tend to score relatively high on both regulatory foci, whereas engaged employees tend to score high on promotion focus and low on prevention focus.

Workaholism, work engagement, and work outcomes. The findings displayed in Figure 3.2 show a negative relation between workaholism on the one hand and job satisfaction ($\beta = -.17$) and job performance ($\beta = -.10$) on the other hand, supporting Hypothesis 3 and Hypothesis 5 respectively. Hypothesis 4, stating that workaholism would be positively associated with turnover intention, was also confirmed ($\beta = .11$). Furthermore, the findings displayed in Figure 3.2 support Hypotheses 6-8. As expected, work engagement was positively related to job satisfaction ($\beta = .74$, Hypothesis 6 confirmed) and job performance ($\beta = .22$, Hypothesis 8 confirmed), but negatively related to turnover intention ($\beta = -.50$, Hypothesis 7 confirmed).

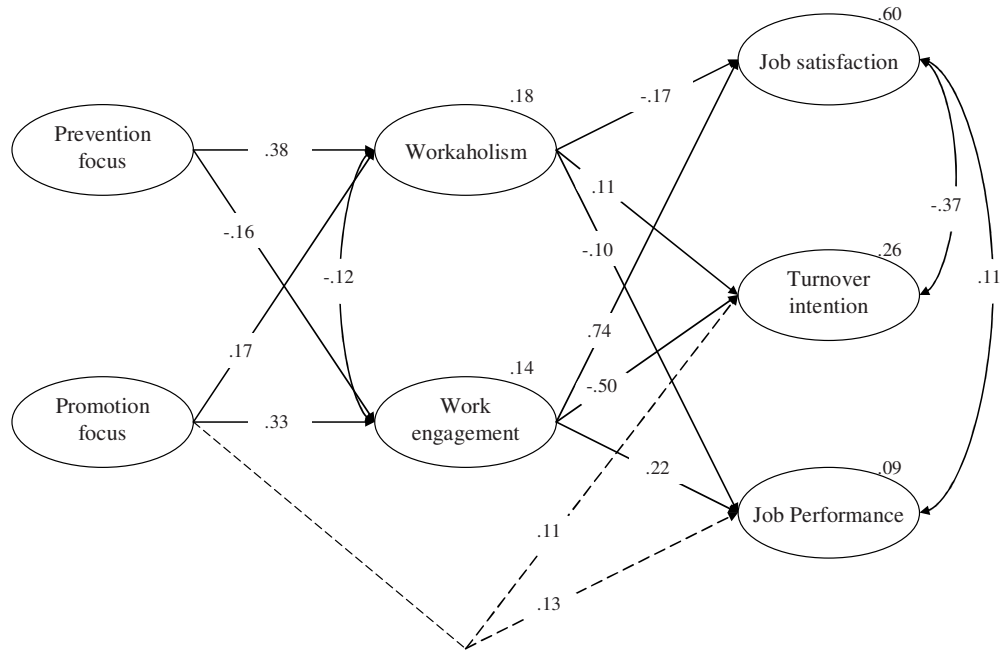


Figure 3.2. Final model with standardized path coefficients and squared multiple correlations. All paths are significant at $p < .05$.

3.3.3 Direct versus indirect effects

In addition to the hypothesized relations, we also found direct effects between a promotion focus and two of the three outcome variables (cf. Figure 3.2). Having a promotion focus was associated with higher scores on turnover intention ($\beta = .11$) and higher self-rated performance ($\beta = .13$).

Table 3.2. Standardized estimates and confidence intervals for the indirect associations ($x \rightarrow \text{mediator } m \rightarrow y$) between promotion/prevention focus and various work outcomes, with workaholism and work engagement as mediators ($N = 680$)

x	mediator m	outcome y	Bootstrapping			95% CI	
			Estimate	SE	Lower	Upper	
Prevention focus	Workaholism	Job satisfaction	-.06**	.01	-.09	-.04	
		Turnover intention	.04**	.02	.01	.07	
		Job performance	-.04*	.02	-.07	-.01	
	Work engagement	Job satisfaction	-.09**	.03	-.15	-.03	
		Turnover intention	.06**	.02	.02	.11	
		Job performance	-.03**	.01	-.05	-.01	
Promotion focus	Workaholism	Job satisfaction	-.03**	.01	-.06	-.02	
		Turnover intention	.03**	.01	.01	.06	
		Job performance	-.01	.01	-.03	.00	
	Work engagement	Job satisfaction	.26**	.03	.20	.32	
		Turnover intention	-.16**	.02	-.20	-.12	
		Job performance	.09**	.02	.06	.14	

Note. * = $p < .05$, ** = $p < .01$.

Regarding the indirect effects, Table 3.2 presents the findings for the bootstrapping analyses. The results show whether or not specific indirect paths differ significantly from zero, i.e., whether it is plausible that a predictor x is connected with an outcome y through a mediator m (Preacher & Hayes, 2008). Table 3.2 shows that all mediated pathways (i.e., all connections of the two regulatory foci to the three outcome variables, through the two mediator variables workaholism and work engagement) were significant, except for the path that linked promotion focus to job performance through workaholism. The general trends that emerge from this table are the following. As for the prevention focus, the indirect paths were all associated with overall negative outcomes. The indirect effects between prevention focus and the outcome variables job satisfaction and job performance were negative (indirect effects varying from .03 to .09), and the indirect effects between prevention focus and the outcome variable turnover intention were positive (indirect effects were .04 and .06). Thus, the effects of prevention focus on job satisfaction, turnover intention, and job performance were mediated by both workaholism and work engagement.

As for the promotion focus, the indirect effects showed a different pattern. The indirect paths involving work engagement were all associated with overall positive outcomes in terms of job satisfaction (an indirect effect of .26), turnover intention (an indirect effect of -.16), and job performance (an indirect effect of .09). However, we also found indirect paths linking promotion focus to work outcomes through workaholism, suggesting that having a promotion focus is associated with lower levels of job satisfaction (an indirect effect of -.03) and higher turnover intentions (an indirect effect of .03). Hence, the effects of promotion focus on job satisfaction and turnover intention were mediated by both workaholism and work engagement, but the effect of promotion focus on job performance was only mediated by work engagement.

3.4 Discussion

Building on Higgins' Regulatory Focus Theory (1997, 1998), the present study examined the motivational correlates of workaholism and work engagement. Specifically, we examined whether workaholic and engaged employees pursue different work goals and use different strategies to achieve these goals. By doing so, it advances our knowledge about the driving forces underlying these two forms of heavy work investment. Furthermore, the present study examined how workaholism and work engagement are related to three work outcomes: job satisfaction, turnover intention, and job performance. Although it was already known how these work outcomes relate to work engagement (Bakker & Demerouti, 2008; Schaufeli & Bakker, 2004; Schaufeli et al., 2008), their relations with

workaholism were still unclear. The most important findings are discussed below.

Workaholism and work motivation. The present study revealed that workaholism is first and foremost positively associated with having a prevention focus. Workaholic employees are sensitive to the absence or presence of negative outcomes. They use avoidance strategies, meaning that they are inclined to avoid mismatches to their work goals that include their obligations and responsibilities. Earlier research has shown that achievement of these goals is accompanied by quiescence-related emotions, while failure is accompanied by agitation-related emotions (Higgins, 1997, 1998). This finding supports the idea that workaholic employees work excessively hard to avoid distress and negative feelings, such as irritability, anxiety, shame, and guilt, that they experience when they are not working (Killinger, 2006). In addition, this finding is consistent with the idea that workaholic employees work excessively hard in response to feelings of low self-worth and insecurity (Mudrack, 2006): by working hard they may avoid having a negative self-view.

Although unexpectedly and to a much lesser extent, workaholism is also positively associated with having a promotion focus. This suggests that workaholic employees are to some extent sensitive to the presence or absence of positive outcomes and that they are likely to use approach strategies, i.e., to approach matches to work goals that include their hopes, wishes, and aspirations. Achieving these goals may well bring about cheerfulness-related emotions (cf. Higgins, 1998), qualifying the picture of workaholic employees as sad individuals who primarily work to avoid negative emotions (Killinger, 2006). This finding also suggests that having a promotion focus is not necessarily associated with positive outcomes. Taken together, these findings show that the motivational make-up of workaholism is more complex than is commonly assumed. Workaholic employees pursue divergent work goals, ranging from their obligations and responsibilities to their ideals, and they use both avoidance and approach strategies.

Work engagement and work motivation. As expected, the present study revealed a strong and positive association between work engagement and having a promotion focus. Engaged employees are sensitive to the presence or absence of positive outcomes (cf. Higgins, 1998). They use approach strategies, indicating that they are inclined to approach matches to their work goals that represent their hopes, wishes, and aspirations. Achievement of their work goals leads to cheerfulness-related emotions, whereas failing to achieve these work goals leads to dejection-related emotions. This is consistent with the finding that individuals with a positive self-view (such as engaged employees, Xanthopoulou et al., 2007) are likely to pursue self-concordant goals (Elliot & Sheldon, 1998; Elliot et al., 1997). This also supports the finding that engaged employees work hard because they identify

themselves with the underlying value of their work and because they are intrinsically motivated, i.e., they experience their work activities as enjoyable and interesting (Van Beek et al, 2012).

Interestingly, engaged employees are less likely to have a prevention focus than others. Thus, they are less likely to use avoidance strategies and may avoid to a lesser degree negative outcomes from happening than others in a similar situation might do (cf. Higgins, 1998). This suggests that in the process of achieving positive outcomes due to their strong promotion focus, engaged employees may sometimes be less inclined to avoid negative outcomes. It is tempting to consider the implications of this specific motivational make-up for the behavior of top-managers. Is it possible that engaged managers with a high promotion and a low prevention focus tend to neglect the risks that their decisions have for their company and its employees? The current study does not address this issue, but the relations between work engagement, regulatory focus, and the quality of decision making – either in the work context or elsewhere – would seem potentially interesting and relevant.

Workaholism and work outcomes. The present study revealed that workaholism is negatively associated with job satisfaction and job performance, and positively associated with turnover intention. Since workaholic employees do not experience their work in itself as interesting or enjoyable (Van Beek et al., 2011; Van Beek et al., 2012) and must deal with unfavorable work characteristics (Schaufeli et al., 2008; Van Beek et al., 2012), it is perhaps not surprising that they are often not satisfied with their job and have the intention to quit their job. Furthermore, besides their job dissatisfaction and the unfavorable work characteristics, their perfectionism as well as their difficulties with delegating work may hinder them in achieving their work goals (Bonebright et al., 2000; Kanai et al., 1996). Our findings are in line with the few studies addressing these relations (Burke & MacDermid, 1999; Shimazu & Schaufeli, 2009). All in all, the present study supports the idea that workaholism is mainly associated with adverse work outcomes (cf., Schaufeli et al., 2008).

Work engagement and work outcomes. The present study revealed that work engagement is positively associated with job satisfaction and job performance, and negatively associated with turnover intention. Since engaged employees find their work valuable, are intrinsically motivated for their work (Van Beek et al., 2011; Van Beek et al., 2012), and usually work in an environment that can be regarded as stimulating and challenging (Bakker & Demerouti, 2007; Schaufeli et al., 2008), it comes as no surprise that they are satisfied and do not intend to quit their job. These findings are in line with previous results (Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007; Schaufeli et al., 2008). Furthermore, engaged employees perform well. Since they evaluate their work activities positively (Van Beek et al., 2011; Van

Beek et al., 2012), and work in a stimulating and challenging work environment (Schaufeli et al., 2008), it is plausible that they are willing to go the extra mile and that they are motivated to perform (Judge et al., 2005; Taris & Schreurs, 2009). Furthermore, job resources such as feedback from supervisors and colleagues may affect their job performance positively (Bakker & Demerouti, 2007). Taken together, the present study supports the idea that work engagement is mainly associated with beneficial work outcomes.

Work motivation and work outcomes. Lastly, the present study revealed direct and indirect associations between the regulatory foci and the work outcomes. Specifically, having a promotion focus is positively associated with turnover intention and job performance. Although having a high turnover intention would seem to fit well with the notion of being opportunity-oriented, this finding shows that having a promotion focus is neither necessarily nor unequivocally associated with positive outcomes, at least not from an organizational point of view. Furthermore, workaholism and work engagement mediate the associations between prevention focus on the one hand and job satisfaction, turnover intention, and job performance on the other hand. In general, having a prevention focus is related to overall negative outcomes through workaholism and work engagement. Although the indirect relations between promotion focus and work outcomes via work engagement are associated with overall positive outcomes, the indirect relations via workaholism are associated with overall negative outcomes. However, it is likely that the latter will usually be compensated by the strong indirect effects of promotion focus through work engagement.

3.4.1 Study limitations

One limitation of the present study is that it relied exclusively on self-report data. Therefore, our results may have been vulnerable to common method bias and the wish to answer consistently that may have inflated the relations among the study variables (Conway, 2002). However, Spector (2006) argues that this concern has been distorted and exaggerated with the passage of time. Specifically, he discusses several studies that show that self-report studies do not guarantee significant results, that social desirability does not often inflate the correlations, and that there is no consistent evidence that negative affectivity influence the correlations. Moreover, Table 3.1 shows that the strength of the relations among the study variables differs substantially. This disagrees with the assumption that the associations among the variables have been biased by a common underlying process that influences these associations strongly. Thus, it is unlikely that common method variance has seriously affected our findings.

Secondly and more or less in line with the previous limitation, the present study revealed a negative association between workaholism and performance. Although this finding is suggestive, it must be noted that job performance was measured subjectively. As employees with a compulsion to work have the propensity to perceive a discrepancy between their job performance expectations and their job performance evaluations (Clark, Lelchook, & Taylor, 2010), workaholic employees may evaluate their own performance as below par, even if others would rate their performance as being acceptable or good. Therefore, it is desirable that future research incorporates objective job performance measures as well.

A third limitation of the present study is our homogeneous sample. Participants were all employed at the same company and were for the most part male, in their thirties or forties, and highly educated. This may have restricted the range of the true scores on the study variables and, in turn, may have decreased the strength of the relations among the study variables. However, the variances of workaholism and work engagement in the present study are comparable to that in previous research with a heterogeneous sample (Van Beek et al, 2011). Although examination of our hypotheses in a heterogeneous sample would increase the generalizability of our results, at present there is no reason to assume that the homogeneity of our sample has severely biased our findings.

Finally, the most important limitation of the present study is its cross-sectional design. Therefore, it cannot be concluded that a particular regulatory focus leads to a specific type of heavy work investment and that a particular type of heavy work investment leads to a specific work "outcome". For example, it would seem possible that low task performance would lead to lower work engagement because engaging unsuccessfully in a particular activity will probably lower one's commitment to and enthusiasm for that activity. Similarly, the fact that workaholic employees work harder than other employees could well mean that they are also more active than these others in thinking about ways to prevent bad things from happening or to be successful in their work. In order to address these competing explanations for the current findings, future research should preferably employ a longitudinal design.

3.4.2 Scientific implications

Despite these limitations, the present study advances our knowledge about heavy work investment in at least two respects. Firstly, as mentioned earlier, the present study provides insight into the driving forces underlying workaholism and work engagement. Although previous research provided some indications regarding the psychological mechanisms underlying these two forms of working hard (e.g., Schaufeli et al., 2006; Schaufeli et al., 2008), the present study is the first that was

based on Higgins' (1997, 1998) RFT. By doing so, it showed that RFT is useful in studying the work goals that workaholic and engaged employees pursue and the strategies they use to achieve these goals.

Secondly, the present study provides additional evidence for the associations between workaholism and work engagement on the one hand and the three work outcomes – job satisfaction, turnover intention, and job performance – on the other hand. Since workaholism is linked to adverse work outcomes and work engagement is related to beneficial work outcomes, the present study supports the idea that workaholism is a “bad” type of working hard and work engagement is a “good” type of working hard. In general, the present study demonstrates that the motivational correlates and work outcomes of workaholism and work engagement differ substantially and meaningfully, supporting the idea that workaholism and work engagement are two different forms of heavy work investment.

3.4.3 Practical implications

The present study paves the way for the development of adequate prevention and intervention programs for HRM practice. Like previous research has suggested (e.g., Schaufeli et al., 2008), organizations should discourage working hard due to a strong, irresistible inner drive, whereas there are no obvious objections against encouraging working hard due to a passion for work. Although the development of the prevention system as well as the promotion system is rooted in childhood (Higgins, 1997, 1998), the work context may influence the strength of these two systems (cf. Brockner & Higgins, 2001).

Organizations may shape their employee's regulatory foci by having managers serving as role models, use of language and feedback, and rewarding procedures (cf. Brockner & Higgins, 2001). For instance, individuals tend to deduce from others the appropriate ways to behave in uncertain situations, such as the work context. Therefore, behavior that is indicative for a promotion focus is likely to be followed by the same kind of behavior and regulatory focus. Furthermore, language and feedback that focus on hopes, wishes, and aspirations promote a promotion focus, whereas language and feedback that focus on duties and responsibilities promote a prevention focus. Also, reward systems in which employees are rewarded when they perform well and not rewarded when they fall short may stimulate a promotion focus. Conversely, reward systems in which employees are punished when they do not perform well and not punished when they do well may strengthen a prevention focus. However, some organizations pursue goals that are prevention-focused or promotion-focused by their very nature. For instance, an electricity supply firm only gets (negative) feedback from its customers

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when it fails to deliver electricity. In contrast, a consultancy firm gets (positive) feedback from its customers when it does provide adequate consultancy.

3.4.4 Concluding comment

In conclusion, the present study demonstrates that two types of heavy work investment, each with a unique motivational make-up and a unique pattern of work outcomes, can be distinguished. While workaholic employees work hard to achieve success and to avoid failure, engaged employees work hard to achieve success (and may neglect the risk of failure). Furthermore, of these two types of heavy work investment, workaholism is associated with negative work outcomes, whereas work engagement is linked to positive work outcomes. These findings show that workaholism should be considered a detrimental form of heavy work investment, whereas work engagement should be considered a beneficial form of heavy work investment.

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Chapter 4

**Are workaholism and work engagement differently
associated with adult attachment and performance?**

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4.1 Introduction

Love and work are two aspects in life that people value highly. Therefore, it is no surprise that *both* play an important role in some of the most influential theories of psychological well-being (Hazan & Shaver, 1990). A theory that accommodates love and work is Bowlby's (1988) Attachment theory (Hazan & Shaver, 1990). According to Attachment theory (Bowlby, 1988), early childhood experiences with caregivers affect human experiences and behaviors from the cradle to the grave. Infants' interaction with their caregivers leads to the development of different kinds of affective bonds that, in turn, impact on future relationships and work experiences (Hazan & Shaver, 1990). The present study examines how individual differences in affective bonds are related to employees' functioning. Specifically, it examines how adult attachment relates to workaholism and work engagement, and, in turn, how these two types of heavy work investment relate to in-role and extra-role performance.

4.1.1 Attachment

Attachment theory (Bowlby, 1988) postulates that infants need to explore their physical and social environment to gain knowledge and to become skilled (Hazan & Shaver, 1990). Since exploration is not without risk, it is important that infants have a caregiver who is available and responsive. Specifically, exploring the physical and social environment, and forming an affective bond with the caregiver are innate tendencies controlled by two interconnected behavioral systems: the exploration system and the attachment system. When a caregiver is sufficiently available and responsive, the attachment system will be relatively quiescent and the exploration system will function optimally. This means that attachment needs must be met so that the development of exploration may evolve normally.

The affective bonds (i.e., attachment styles) that develop between infants and caregivers relate to the way love is experienced and to expectations (i.e., internal working models) concerning romantic love relationships (Hazan & Shaver, 1987; 1990). These affective bonds also impact on one's orientation to work. Specifically, romantic love relationships and work can be considered as functionally parallel to the infant-caregiver relationship, and childhood play and exploration, respectively. Romantic love relationships can serve as a secure base from which individuals can operate and work activities can be considered as a major source of competence.

With respect to adult attachment, there are two fundamental dimensions: attachment-related anxiety and attachment-related avoidance (Brennan, Clark, & Shaver, 1998). Attachment-related anxiety reflects the extent to which individuals tend to worry about the availability and responsiveness of their romantic partner.

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Attachment-related avoidance refers to the extent to which individuals are uncomfortable opening up to their romantic partner and depending on him/her. Based on these two dimensions, four different kinds of attachment styles have been identified: secure, anxious-preoccupied, dismissive-avoidant, and fearful-avoidant (see Figure 4.1). The latter three attachment styles represent insecure attachment.

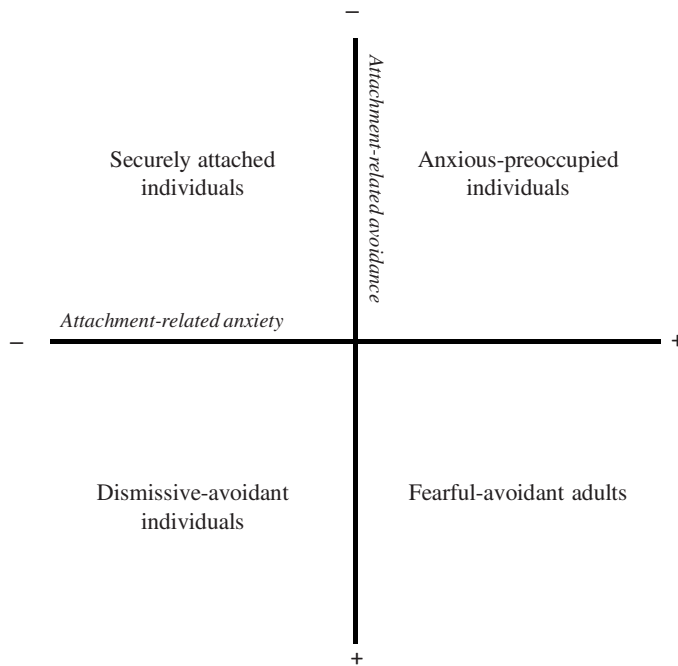


Figure 4.1. Adult attachment.

Securely attached individuals (low on attachment-related anxiety and low on attachment-related avoidance) are likely to view themselves, their romantic partner, and their romantic love relationship positively (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1990). These individuals feel worthy and they expect that their partner is generally accepting, available, and responsive. Therefore, their romantic love relationship may function as a safe haven that provides them confidence and support to face challenges and to follow their heart at work (Hazan & Shaver, 1990). In other words, they are assumed to have a "secure" orientation to their work. Compared to insecurely attached individuals, they have fewer work-related fears and worries about their performance and evaluation by colleagues.

Furthermore, although they value their work, they value their romantic relationship even more, suggesting that they have a healthy work-life balance.

Anxious-preoccupied individuals (high on attachment-related anxiety and low on attachment-related avoidance) are inclined to evaluate themselves negatively, but their romantic partner positively (Bartholomew & Horowitz, 1991). They feel unworthy, while they ascribe positive characteristics, such as trustworthiness, to others. Anxious-preoccupied individuals worry about their partner's availability and responsiveness, and they may use their work as a means of achievement to gain their partner's approval (Hazan & Shaver, 1990). They depend on others to maintain or enhance their positive self-regard (Bartholomew & Horowitz, 1991). It is assumed that anxious-preoccupied individuals prefer to work with others, that they feel strongly obligated to please others, and that they fear failure and loss of self-esteem.

Dismissive-avoidant individuals (low on attachment-related anxiety and high on attachment-related avoidance) tend to evaluate themselves positively, but have a negative disposition toward others (Bartholomew & Horowitz, 1991). They pursue a high level of independency and they avoid interactions with others (Hazan & Shaver, 1990). By doing so, they protect themselves against disappointment (Bartholomew & Horowitz, 1991). Dismissive-avoidant individuals are assumed to use their work to keep themselves busy and to reduce or avoid anxiety that is associated with their unmet attachment needs. Therefore, it is believed that these individuals work compulsively and feel upset when not working. They are reluctant to stop working or to take time off work so that working goes at the expense of their health.

Fearful-avoidant individuals (high on attachment-related anxiety and high on attachment-related avoidance) are likely to view themselves and their romantic partner negatively. They feel worthless and they expect that others are unreliable and rejecting (Bartholomew & Horowitz, 1991). Accordingly, they have mixed feelings: they need others' acceptance to obtain or preserve their positive self-image, but they feel uncomfortable in close relationships and do not want to involve themselves too much in such relationships. Fearful-avoidant individuals want to protect themselves against rejection by others. Therefore, it can be speculated that they use their work as a means of achievement to gain their partner's approval, but also as a means of avoiding close relationships. As adult attachment influences an individual's orientation toward work, it is conceivable that it plays a role in development of heavy work investment.

4.1.2 Attachment and heavy work investment

Two types of heavy work investment can be differentiated: work engagement and workaholism (Van Beek, Taris, & Schaufeli, 2011). Workaholism refers to “the tendency to work excessively hard and being obsessed with work, which manifests itself in working compulsively” (Schaufeli, Shimazu, & Taris, 2009, p. 322). Workaholic employees are unwilling and unable to disengage from work, and, consequently, they spend an excessive amount of time on their work (Scott, Moore, & Miceli, 1997). They think about their work constantly, even when they are off duty, suggesting that they are obsessed with their work. In addition, they experience a strong and uncontrollable inner compulsion to work, indicating that workaholic employees not only behave obsessively, but also compulsively. Since workaholism is primarily associated with negative outcomes, such as low levels of job satisfaction (Burke & MacDermid, 1999) and life satisfaction (Bonebright, Clay, & Ankenmann, 2000; McMillan & O’Driscoll, 2004), and high levels of job strain and health complaints (Burke, 2000), it is seen as a “bad” type of heavy work investment.

Work engagement is defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli, Salanova, González-Romá & Bakker, 2002, p. 74). Engaged employees experience high levels of energy and mental resiliency while working (vigor). They are strongly involved in their work and experience a sense of significance, enthusiasm, inspiration, pride, and challenge (dedication). Furthermore, they are fully concentrated on their work, while time passes quickly (absorption). Since work engagement is mainly related to positive outcomes, such as high levels of job satisfaction (Schaufeli, Taris, & Van Rhenen, 2008) and life satisfaction (Schaufeli & Salanova, 2007), and a good health (Schaufeli et al, 2008), it is seen as a “good” type of heavy work investment.

Although workaholism has been regarded as a family problem that arises from and is maintained by unhealthy family dynamics (Robinson, 1996), so far virtually no research has been conducted that relates workaholism (or – by way of contrast – work engagement) to adult attachment. As workaholic employees spend an excessive amount of time on their work as opposed to their spouse, previous research suggested that workaholism puts pressure on the marital bond and that it is likely to be a cause of divorce (Robinson, Flowers, & Carroll, 2001). Therefore, it is no surprise that workaholic employees report relatively poor family satisfaction (Burke & Koksall, 2002).

As far as the origins of workaholism are concerned, it is suggested that workaholic employees devote an excessive amount of time on their work because they fear not working. For them, not working is accompanied by distress and negative emotions, such as irritability and anxiety. By throwing themselves into

their work, they reduce and prevent distress and negative emotions (Killinger, 2006). It might well be that this distress and these negative emotions are caused by unmet attachment needs and that work is used to avoid close relationships with others, a scenario that reflects high levels of attachment-related avoidance (i.e., the dismissive-avoidant and fearful-avoidant attachment styles – see above). Furthermore, it is suggested that workaholic employees experience feelings of low self-worth and insecurity, and that they have a strong need to prove themselves and to gain approval from others (Mudrack, 2006). It is therefore also conceivable that they work so hard in order to attract their partner's attention and to gain their partner's approval, a scenario that mirrors high levels of attachment-related anxiety (i.e., the anxious-preoccupied and fearful-avoidant attachment styles – see above). Hence, it is hypothesized that *insecure attachment, as indicated by high levels of attachment-related anxiety and/or attachment-related avoidance, is positively associated with workaholism* (Hypothesis 1).

In contrast, work engagement is associated with healthy family dynamics. Engaged employees do not neglect their social life outside work (Schaufeli et al., 2008): they spend time with family and friends, and they engage in hobbies and volunteering. Moreover, having a fulfilling job has a positive effect on their family life (Grzywacz & Marks, 2000). For example, feelings of support from colleagues and supervisors, and the experience of control at work are job resources that are instrumental for adaptation in the family domain. In addition, affective support from one's partner and other family members is associated with positive spillover from the family domain to the work domain. Specifically, previous research showed that employees who take positive feelings from home to their work and vice versa have higher levels of work engagement compared to those who do not experience positive cross-over between both life domains (Montgomery, Peeters, Schaufeli, & Den Ouden, 2003).

Furthermore, engaged employees are self-confident and self-efficacious (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009): they believe in themselves and their ability to meet contextual demands. Also, engaged employees value and enjoy their work activities for their sake: they are intrinsically motivated (Van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012). So, in contrast to workaholics, engaged employees do not seem to work for the sake of pleasing others or avoiding close relationships with others. Hence, it is expected that *secure attachment, as indicated by low levels of attachment-related anxiety and attachment-related avoidance, is positively associated with work engagement* (Hypothesis 2).

4.1.3 Heavy work investment and performance

It is likely that workaholism and work engagement influence employees' performance because both workaholic and engaged employees work hard and spend much time on their work, albeit for different reasons (Van Beek et al., 2011). Performance refers to behavior as well as outcomes (Reijseger, Schaufeli, Peeters, & Taris, 2012). The present study addresses the actions that employees exhibit to achieve outcomes, or their in-role and extra-role performance. In-role performance refers to the extent to which employees fulfill their job requirements (Goodman & Svyantek, 1999). Extra-role performance refers to the extent to which employees engage in voluntarily actions that are not included in their job description and not explicitly rewarded, but beneficial to the organization (Organ, 1990).

So far, research findings on the relation between workaholism and performance have been inconclusive. Workaholism is weakly, but positively related to extra-role performance in one study (Schaufeli, Taris, & Bakker, 2006) and negatively related to overall job performance in two other studies (Shimazu & Schaufeli, 2009; Van Beek, Taris, Schaufeli, & Brenninkmeijer, 2014). Since workaholic employees spend much time on their work, it can be argued that workaholic employees are extremely productive and go beyond what is reasonably required by their job (Schaufeli, Taris, & Bakker, 2006). However, it can also be argued that workaholic employees perform poorly because they do not work smartly (Schaufeli, Taris, & Bakker, 2006). For instance, workaholism is associated with a broad range of adverse personal characteristics, such as inflexibility and having difficulties with delegating (Bonebright et al., 2000), that might interfere with performing well. Furthermore, workaholism is linked to high job demands (e.g., high work pressure) and low job resources (e.g., autonomy and social support; Taris, Schaufeli, & Verhoeven, 2005). Job demands require sustained effort from employees and are associated with physiological and psychological costs that may lead to stress and burnout in case of insufficient recovery (Bakker & Demerouti, 2007). While workaholic employees would go at great lengths to meet their high job demands, they do not have leeway to maneuver in their job and cannot take advantage of the help and support from others. In other words, they are not effective in reducing high job demands and are unable to mobilize job resources to achieve their work goals (Bakker & Demerouti, 2007). Also, workaholic employees do not find their work activities enjoyable or interesting (Van Beek et al., 2012). Therefore, it is expected that *workaholism is negatively associated with in-role performance* (Hypothesis 3) and *extra-role performance* (Hypothesis 4).

As mentioned above and in contrast to workaholism, work engagement is accompanied by personal resources, like self-esteem, self-efficacy, optimism, and organizational-based self-esteem (Xanthopoulou et al., 2009). These resources all

refer to resiliency and mirror the extent to which employees consider themselves capable of affecting their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Employees who are self-efficacious and optimistic, and who believe that they can satisfy their needs by indulging themselves in work roles, are likely to experience little job demands and to achieve their work goals. Moreover, it is conceivable that these employees believe that their capabilities fit their work goals (Judge, Bone, Erez, & Locke, 2005) and that they set higher or extra work goals. Furthermore, work engagement is related to positive work characteristics, such as high levels of autonomy, social support, and feedback (Schaufeli & Bakker, 2004). These work characteristics are likely to contribute to superior performance as well (Bakker & Demerouti, 2007). For example, social support and feedback from colleagues can help employees to achieve their work goals. In addition, engaged employees consider their work activities as valuable, enjoyable, and interesting (Van Beek et al., 2012), and they are satisfied with their job (Schaufeli et al., 2008). In the context of Social Exchange Theory (Cropanzano & Mitchell, 2005), employees who receive many resources and who are satisfied with their job might want to repay their organization by doing their best. According to this line of thought and previous research (Bakker & Bal, 2010; Bakker & Demerouti, 2008; Salanova, Agut, & Peiró, 2005; Schaufeli, Taris, & Bakker, 2006), engaged employees are willing to achieve the goals of their job and engage in activities that go beyond what is stated in their formal job description (Judge et al., 2005). Therefore, it is expected that *work engagement is positively associated with in-role performance* (Hypothesis 5) and *extra-role performance* (Hypothesis 6). Figure 4.2 summarizes our hypotheses.

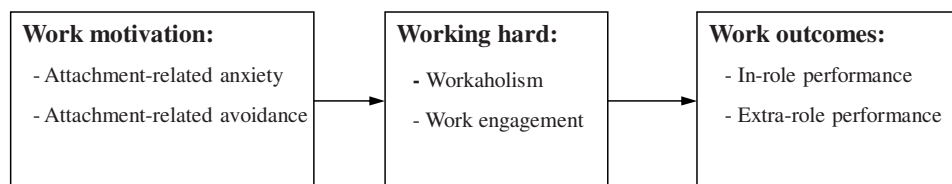


Figure 4.2. Heuristic research model.

4.2 Method

4.2.1 Sample and Procedure

Participants were recruited during several job-related exhibitions, like an ICT fair. They were individually approached and informed about the nature and general aim of the present study. Those who wanted to participate and currently had a job received an email with a link to our digital questionnaire.

In total, 257 participants completed the questionnaire. Of these 257 participants, 201 participants (99 males, $M_{\text{age}} = 43.5$ years, $SD = 10.8$, and 102 females, $M_{\text{age}} = 38.4$ years, $SD = 10.5$) were involved in a romantic love relationship. The majority held a college or university degree (78.6%). Participants were employed in different sectors (e.g., education, ICT, health care, welfare service) and worked on average 39.6 hours ($SD = 11.2$) per week.

4.2.2 Instruments

Workaholism was measured with the Dutch Work Addiction Scale (DUWAS; Schaufeli et al., 2009) which consists of two subscales: Working Excessively and Working Compulsively. The subscale *Working Excessively* contains 9 items ($\alpha = .78$). An example item is: “I find myself continuing to work after my co-workers have called it quits”. The subscale *Working Compulsively* contains 7 items ($\alpha = .79$). An example item is: “I feel that there is something inside me that drives me to work hard”. All items were scored on a 4-point frequency scale, ranging from 1 (“(almost) never”) to 4 (“(almost) always”).

Work engagement was measured with the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006) which consists of three subscales: Vigor, Dedication, and Absorption. *Vigor* contains 3 items ($\alpha = .87$), including “At my work, I feel strong and vigorous”; *Dedication* contains 3 items ($\alpha = .95$), such as “I am enthusiastic about my job” and *Absorption* also contains 3 items ($\alpha = .84$), including “I am immersed in my work”. Although this questionnaire consists of three subscales, a composite score was used to assess engagement (Schaufeli, Bakker, & Salanova, 2006). All items employed a 7-point frequency scale, ranging from 1 (“never”) to 7 (“always”).

Attachment was measured with the Experiences in Close Relationships–Relationship Structures questionnaire (ECR-RS; Fraley, Heffernan, Vicary, & Brumbaugh, 2011) that consists of two subscales: Anxiety and Avoidance. The combination of low scores on both (attachment-related) anxiety and (attachment-related) avoidance is indicative for secure attachment, whereas other combinations of scores on both dimensions are indicative for insecure attachment. In the present study we focused on romantic attachments, i.e., on the relationships with a romantic partner. The subscale *Anxiety* contains 3 items ($\alpha = .86$), including “I am afraid that my partner may abandon me”. The subscale *Avoidance* contains 6 items ($\alpha = .75$), such as “I prefer not to show my partner how I feel deep down”. All items were scored on a 7-point rating scale, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”).

Performance was measured by a shortened version (e.g., Nijhuis, Van Beek, Taris, & Schaufeli, 2012) of Goodman and Svyantek’s (1999) scale. *In-role*

performance was measured with 3 items ($\alpha = .80$), including “You achieve the objectives of your job”. *Extra-role performance* was measured with 3 items ($\alpha = .81$) as well, such as “You help colleagues when their work load increases or when they have other problems”. All items employed a 5-point frequency scale, ranging from 1 (“never”) to 5 (“always”).

4.2.3 Statistical analysis

Table 4.1 shows the mean values, standard deviations, and intercorrelations for the study variables. To test all hypotheses simultaneously, Structural Equation Modeling methods as implemented in AMOS 16.0 (Arbuckle, 2007) were used. Maximum likelihood estimation was used and the goodness-of-fit of the tested models was evaluated using the χ^2 test statistic, the Goodness-of-Fit Index (GFI), the Comparative Fit Index (CFI), the Normed Fit Index (NFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Values higher than .90 for GFI, CFI, NFI, and TLI, and .08 or lower for RMSEA signify acceptable model fit (Byrne, 2009). To compare non-nested models, the Akaike Information Criterion (AIC; Akaike, 1987) was used. A lower AIC indicates better model fit.

Bootstrapping techniques (2,000 iterations) were used to examine possible indirect effects of adult attachment on performance via both types of heavy work investment. The indirect effects of the predictor (attachment-related anxiety) on the outcome (in-role performance) through the two mediator variables (workaholism and work engagement) were examined by estimating the coefficients of one path (e.g., through workaholism) while fixing the coefficients for the other path (e.g., through work engagement) at zero, and vice versa (cf. Preacher & Hayes, 2008; Ten Brummelhuis, Van der Lippe & Kluwer, 2010). An indirect effect is significant when the 95% confidence interval (CI) does not include zero.

Table 4.1. Means (*M*), standard deviations (*SD*), and correlations between the variables with internal consistencies on the diagonal (*N* = 201)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
<i>Work motivation</i>												
1 Attachment-related anxiety	1.69	.87	.86									
2 Attachment-related avoidance	2.17	.86	.36**	.75								
<i>Heavy work investment</i>												
3 Working excessively	2.14	.49	.19**	.14	.78							
4 Working compulsively	1.93	.53	.25**	.09	.72**	.79						
5 Vigor	4.86	1.03	-.22**	-.18*	-.01	-.14*	.87					
6 Dedication	5.28	1.26	-.21**	-.16*	.01	-.11	.82**	.95				
7 Absorption	4.66	1.21	-.12	-.14*	.21**	.10	.70**	.72**	.84			
8 Work engagement	4.93	1.06	-.20**	-.18*	.08	-.05	.91**	.93**	.89**	.94		
<i>Work outcomes</i>												
9 In-role performance	3.98	.58	-.20**	-.16*	-.12	-.16*	.28**	.31**	.20**	.29**	.80	
10 Extra-role performance	3.65	.89	-.02	-.03	.11	.04	.19**	.20**	.19**	.21**	.31**	.81

Note. * $p < .05$, ** $p < .01$.

4.3 Results

4.3.1 Testing the research model

The research model (Model 1) fitted the data well, $\chi^2(N = 201, df = 8) = 13.64$, GFI = .98, CFI = .98, NFI = .95, TLI = .94, RMSEA = .06, AIC = 53.64, providing a good starting point for further analysis. Inspection of the path coefficients revealed no significant relations between attachment-related avoidance on the one hand and workaholism and work engagement on the other hand. Therefore, this variable was removed from the model. Furthermore, no significant relation between workaholism and extra-role performance was found. Therefore, this path was also removed from the model. The resulting model (Model 2) not only fitted the data well, $\chi^2(N = 201, df = 6) = 11.52$, GFI = .98, CFI = .97, NFI = .95, TLI = .94, RMSEA = .07, AIC = 41.52, but also better than Model 1, $\Delta AIC = 12.12$ (note that Models 1 and 2 are non-nested, meaning that a comparison of their chi-square values is not possible). Inspection of the modification indices of Model 2 suggested no direct effects, i.e., effects of attachment-related anxiety on in-role and extra-role performance. The final model is shown in Figure 4.3.

4.3.2 Post-hoc analysis

Although the Pearson product-moment correlation coefficients (Table 4.1) revealed a weak, but significant relation between attachment-related avoidance and work engagement ($r = -.18$), SEM analyses did not confirm this association. This might be explained by the fact that attachment-related anxiety and attachment-related avoidance share part of their variance ($r = .36$), which could affect the SEM-estimates of attachment-related avoidance. A model with attachment-related avoidance as the only predictor variable confirms our assumption, showing the expected significant association between attachment-related avoidance and work engagement ($\beta = -.18$).

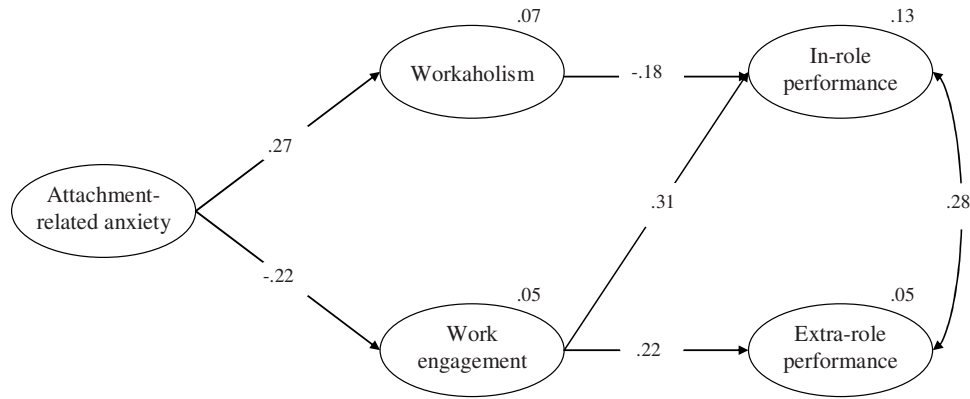


Figure 4.3. Final model with standardized path coefficients and squared multiple correlations.

4.3.3 Testing the hypotheses

Hypothesis 1 stated that insecure attachment, as indicated by high levels of attachment-related anxiety and/or attachment-related avoidance, would be positively associated with workaholism. The findings presented in Figure 4.3 show that attachment-related anxiety was positively associated with workaholism ($\beta = .27$), whereas *no* significant relation was found between attachment-related avoidance and workaholism. These findings indicate that workaholic employees tend to worry about the availability and responsiveness of their partner and, thus, that they are insecurely attached (Hypothesis 1 confirmed). With regard to the four different types of attachment, workaholic employees may be either anxious-preoccupied or fearful-avoidant attached (see Fig. 4.1).

Hypotheses 2 proposed that secure attachment, as indicated by low levels of attachment-related anxiety and attachment-related avoidance, would be positively associated with work engagement. In line with this hypothesis, we found a negative relation between attachment-related anxiety and work engagement ($\beta = -.22$). Engaged employees do *not* seem to worry about the availability and responsiveness of their partner. Furthermore, the bivariate correlation between attachment-related avoidance and work engagement was weak, but significant ($r = -.18$). Yet, the association between the two constructs did not reach significance when controlling for attachment-related anxiety. Apparently we are dealing with a suppressor effect caused by the moderate relation between attachment-related anxiety and attachment-related avoidance ($r = .36$). Therefore, it is likely that engaged

employees experience low levels of attachment-related avoidance, suggesting that they tend to feel comfortable with opening up to and depending on their partner.

Taken together, although the present findings provided indications that engaged employees are indeed securely attached (i.e., they reported lower levels of attachment-related anxiety and attachment-related avoidance), multivariate tests could only partially confirm the corresponding hypothesis (Hypothesis 2 partly supported).

Hypotheses 3 and 4 stated that workaholism would be negatively associated with in-role performance and extra-role performance, respectively. Figure 4.3 shows that workaholism was indeed negatively associated with in-role performance ($\beta = -.18$, Hypothesis 3 confirmed). However, we found no significant relation between workaholism and extra-role performance (Hypothesis 4 rejected). Hence, workaholic employees tend to deliver poor in-role performance.

Finally, Hypotheses 5 and 6 proposed that work engagement would be positively associated with in-role performance and extra-role performance, respectively. Both hypotheses were confirmed: work engagement was positively associated with in-role performance ($\beta = .31$) and extra-role performance ($\beta = .22$). Thus, unlike workaholic employees, work engaged employees tend to deliver high in-role and extra-role performance.

4.3.4 Indirect effects

Table 4.2 shows the results of the bootstrapping analyses. Bootstrapping analyses revealed that all indirect pathways were significant. Attachment-related anxiety had a negative effect on in-role and extra-role performance via workaholism and work engagement (indirect effects varying from $-.05$ to $-.07$). Hence, a general trend was observed: high levels of attachment-related anxiety were associated with poor performance, via heavy work investment.

86 Table 4.2. Standardized estimates and confidence intervals for the indirect associations ($x \rightarrow \text{mediator } m \rightarrow y$) between attachment-related anxiety and performance, with workaholism and work engagement as mediators

x	mediator m	y	Bootstrapping			95% CI	
			Estimate	SE		Lower	Upper
Attachment-related anxiety	Workaholism	In-role performance	-.06*	.04		-.15	-.00
	Work engagement	In-role performance	-.07**	.03		-.14	-.02
		Extra-role performance	-.05**	.02		-.10	-.02

Note. * $p < .01$; ** $p < .001$.

4.4 Discussion

Building on Bowlby's Attachment theory (1988), the present study examined the motivational correlates and outcomes of workaholism and work engagement. Specifically, the present study examined how individual differences in adult attachment relate to workaholism and work engagement, and, in turn, how these two types of heavy work investment relate to in-role and extra-role performance. By doing so, the present study is one of the first studies that considers adult attachment, with its roots in infancy, as a possible source of workaholism and work engagement. As a result, it advances our knowledge about the possible mechanisms underlying these two types of heavy work investment. Furthermore, the present study aims to clarify the relation between workaholism and performance, because previous research shows inconsistent findings. The most important findings from the current study are discussed below.

Attachment and heavy work investment. The present study revealed that, as expected, attachment-related anxiety is positively associated with workaholism. Individuals who worry about the availability and responsiveness of their romantic partner are likely to have obsessive-compulsive work habits. These individuals have a negative view of themselves and they may work to gain their partner's approval in order to boost their self-acceptance (Bartholomew & Horowitz, 1991). In other words, they may use their work to satisfy unmet attachment needs and this may lie at the core of workaholics' strong inner compulsion to work. Furthermore, and unexpectedly, attachment-related avoidance was unrelated to workaholism, suggesting that individuals who feel at ease *or* uncomfortable opening up to their romantic partner and depending on him/her, may work excessively and compulsively. The present findings suggest that insecure attachment, and particularly an anxious-preoccupied or fearful-avoidant attachment style, is associated with workaholism. This finding is in line with previous research that revealed a significant relation between non-safe attachment and workaholism (Tziner & Tanami, 2013). Hence, insecure attachment might underlie workaholism.

In contrast, and as expected, attachment-related anxiety is negatively related to work engagement. Individuals who do not worry about the availability and responsiveness of their romantic partner are likely to be engaged at work. Furthermore, and also as expected, there are indications that attachment-related avoidance is negatively related to work engagement: individuals who are comfortable opening up to their romantic partner and depending on him/her may be engaged at work as well. Although more research is needed on the relation between attachment-related avoidance and work engagement, it can be speculated that secure attachment is associated with work engagement. Securely attached individuals tend to view themselves and their romantic partner positively and their

attachment needs tend to be satisfied (Hazan & Shaver, 1990; Bartholomew & Horowitz, 1991). Therefore, they will perform their work activities with confidence and are likely to experience their work activities as inherently enjoyable and satisfying. In other words, they will be intrinsically motivated instead of extrinsically motivated (e.g., motivated to gain a partner's approval). Although an earlier study could not establish a significant relation between safe attachment and work engagement (Tziner & Tanami, 2013), this might be due to differences in sampling and operationalizing attachment. However, based on our findings, secure attachment might underlie work engagement.

Heavy work investment and performance. Furthermore, the present study revealed that workaholism is negatively associated with in-role performance. Workaholic employees are likely to have difficulties with fulfilling their formal job requirements. Personal characteristics, such as inflexibility and difficulties with delegating work (Bonebright et al., 2000), and unfavorable work characteristics, such as high job demands and low job resources (Taris et al., 2005), might hinder workaholic employees in achieving their work goals. In addition, workaholic employees do not experience their work in itself as interesting or enjoyable (Van Beek et al., 2012). Hence, it seems plausible that workaholism might lead to poor performance.

Work engagement is positively linked to in-role and extra-role performance. Work engaged employees are successful in meeting their formal job requirements and engage in activities that go beyond their formal job description. Personal resources, such as self-efficacy and optimism (Xanthopoulou et al., 2009), and a stimulating and challenging work environment (Schaufeli & Bakker, 2004) are likely to facilitate goal achievement and might stimulate work engaged employees to set higher or extra work goals. Also, work engaged employees consider their work activities as valuable, enjoyable, and interesting (Van Beek et al., 2012), what might explain why they are willing to go the extra mile. Thus, it seems plausible that work engagement might lead to good performance.

Attachment and performance. Lastly, the present study revealed indirect associations between adult attachment and performance. High attachment-related anxiety is associated with poor in-role and extra-role performance through workaholism and work engagement. More specifically, worrying about the partner's availability and responsiveness is related to poor in-role performance via workaholism and work engagement, and poor extra-role performance via work engagement.

4.4.1 Limitations

One potential limitation of the present study is that all data are based on self-report measures. This might have biased the magnitude of the reported effects due to common method variance or the wish to answer consistently (Conway, 2002). However, it is argued that one should not worry too much about this issue: self-report measures do not automatically inflate relations between variables and do not necessarily lead to significant results (Spector, 2006). In addition, the magnitude of the relations presented in Table 4.1 varies considerably, suggesting that these relations are not uniformly affected by a common underlying process. For future research, it might be interesting to ask colleagues and supervisors to assess a participant's performance (i.e., 360-degree performance ratings; e.g., Grave, Ruderman, Ohlott, & Weber, 2012) or to use company records.

The second potential limitation concerns the moderate correlation between the two attachment dimensions, attachment-related anxiety and attachment-related avoidance. Although it is often assumed that these dimensions should be uncorrelated (Mikulincer, Shaver, Sapir-Lavid, & Avihou-Kanza, 2009), it is also argued that this assumption is too strong (Fraley et al., 2011). For example, it is argued that two different concepts do not necessarily be statistically independent. Actually, previous research showed that both concepts are correlated (Finnegan & Cameron, 2009) and, therefore, it is advised to examine the unique contributions of the two dimensions by using multivariate tests (Fraley et al., 2011). Although we examined the unique contributions of attachment-related anxiety and attachment-related avoidance, this might have been a weakness as well. Namely, the relation between attachment-related avoidance and work engagement seems to be explained by the variance that attachment-related anxiety and attachment-related avoidance share.

Furthermore, the present study only tapped participants' attachment to their romantic partner. Previous research has demonstrated that the correlations of the attachment dimensions across different domains are positive, but not strong (Fraley et al., 2011). Individuals who find it difficult to open up and to depend on their mother, are likely to find it difficult to open up and to depend on their partner too. However, the weak correlations also indicate that there is within-person variation: individuals who are rejected by their parents and who have a responsive and available partner, might hold different working models for these relationships (Donahue, Robins, Roberts, & John, 1993). For future research, it might be interesting to examine the attachment dimensions in different relationship contexts.

The last limitation of the present study concerns the cross-sectional nature of our data, because it does not warrant causal inferences. So, it is premature to conclude that differences in adult attachment lead to different levels of workaholism

and work engagement, and that these two types of heavy work investment affect performance. Only a longitudinal design can identify such causal relations. Since adult attachment has its roots in infancy (Hazan & Shaver, 1987; 1990), it seems reasonable that adult attachment precedes heavy work investment. However, as it comes to the two types of heavy work investment and performance, reversed causal relations or reciprocal relations cannot be ruled out. For instance, successful performances might lead to work engagement by increasing one's self-efficacy beliefs (Schaufeli & Salanova, 2007). The present study suggests that it could be worthwhile to pursue a longitudinal study on the hypothesized relations.

4.4.2 Strengths and implications

Despite the potential limitations, the present study has its strengths and implications. First, it is one of the first studies that used Bowlby's Attachment theory (1988) to examine the development of workaholism and work engagement. As Hazan and Shaver (1990) stated "studies of love generally ignore its relation to work, studies of work tend to ignore its relation to love" (p. 270). The present study demonstrates that Attachment theory is not only a suitable theory for combining both topics, but also for understanding workaholism and work engagement. Since the infant-caregiver relationship influences adult attachment (Hazan & Shaver, 1987; 1990), workaholism and work engagement seem to be – at least partly – rooted in one's childhood.

Furthermore, the present study suggests how organizations can stimulate optimal work behaviors and performance among their employees. Secure attachment is related to a positive view of oneself and others, while insecure attachment is associated with a negative view of oneself and/or others (Bartholomew & Horowitz, 1991). Therefore, having a manager who is available, responsive, trustful, and accepting may change employees' view of others in a positive way (Thoomes-Vreugdenhil, 2006). Furthermore, having a manager who provides positive feedback may boost employees' self-esteem (Tziner & Tanami, 2013). For managers, it might be important to emphasize their employees' achievements, because individuals with low self-esteem blame themselves when they fail and assign successes to external factors, like others (Dijkstra, 2012). Individuals who accept themselves find it easier to open up to others and are less afraid of being abandoned. These suggestions may increase the likelihood of a secure orientation to others and to work, and, as a result, better performance might be achieved.

As for performance, the present study contributes to the literature by reducing the lack of clarity that exists regarding workaholic employees' performance and challenges one of the three core features of workaholism as stated by Scott and

colleagues (1997). Although workaholic employees spend an excessive amount of time on their work (first feature), and are unwilling to disengage from their work and persistently think about it (second feature), they do *not* work beyond what is reasonably expected from them in order to meet organizational requirements (third feature). Instead, workaholic employees report that they fulfill their job requirements poorly. However, some caution is required. It is suggested that workaholic employees are sensitive to stimuli associated with punishment and nonreward (Van Beek, Kranenburg, Taris, & Schaufeli, 2013) and that they are biased toward negative attributes when evaluating themselves (Heimpel, Elliot, & Wood, 2006).

4.4.3 Concluding comment

The present study shows that two different types of heavy work investment can be distinguished: workaholism and work engagement. Although both workaholic and engaged employees work hard (Van Beek et al., 2011), their reasons seem to differ, as well as their performance. Workaholism is associated with insecure attachment and poor performance, while work engagement seems to be linked to secure attachment and good performance. Therefore, the present study supports labeling workaholism as a bad type and work engagement as a good type of heavy work investment.

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Chapter 4

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Chapter 5

Workaholic and work engaged employees: Dead ringers or worlds apart?

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5.1 Introduction

People hold radically different ideas regarding the value and consequences of working hard. Whereas some hold that nobody ever died of working hard, others contend that the figures on *karoshi* (death due to overwork) and *karo-jisatsu* (suicide due to work overload) in Japan prove otherwise (Kanai, 2006). To date, there has been no compelling evidence for either of these positions. Although working long hours may have adverse consequences for employee health and well-being (Taris et al., 2011; Van der Hulst, 2003), the strength of this association is modest at best and depends on aspects such as rewards and the extent to which employees experience pressure from others to work overtime (Van der Hulst & Geurts, 2001). To complicate matters even more, moderate levels of working overtime have been found to be positively associated with health and well-being as well (e.g., Beckers et al., 2004), contesting that working hard does not necessarily have adverse consequences.

These diverging ideas and findings on high effort expenditure at work may be explained by the fact that different types of and different reasons for working hard can be distinguished. For example, Spence and Robbins (1992) distinguished among three types of workaholics (work addicts, work enthusiasts, and enthusiast workaholics) and three types of non-workaholics, depending on the extent to which employees (a) are involved in their work, (b) feel driven towards their work, and (c) enjoy their work – the so-called workaholic triad. This classification has been criticized by Mudrack (2006), who rightly argued that enjoyment is not a constituting element of work addiction, because workaholics may or may not enjoy their work. Moreover, enthusiastic workers are not necessarily work addicts, as they do not experience the inner compulsion that is characteristic of any addiction. More recently, Schaufeli, Taris, and Van Rhenen (2008) distinguished between a "bad" and a "good" type of working hard: workaholism (this category is similar to Spence and Robbins' work addicts) and work engagement (this category overlaps with Spence and Robbins' work enthusiasts), respectively. In our view, workaholism is characterized by "the tendency to work excessively hard and being obsessed with work, which manifests itself in working compulsively" (Schaufeli, Shimazu, & Taris, 2009, p. 322). Workaholic employees spend an excessive amount of time on their work and they work harder than their colleagues and harder than required in order to meet organizational or economic standards. Moreover, workaholic employees are unwilling and unable to disengage from work and think about their work constantly, i.e., even when they are not working. They experience a strong and uncontrollable inner drive to work hard. Conversely, work engagement refers to "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Vigor

refers to 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 refers to being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work.

Interestingly, the individual-level and organizational-level consequences of working hard appear to be contingent upon its type. Whereas workaholism is primarily associated with negative outcomes, work engagement is usually linked to positive outcomes. For instance, workaholic employees experience more interpersonal conflict at work (Mudrack, 2006), are less satisfied with their jobs (Burke & MacDermid, 1999), report more work-home interference (Schaufeli, Bakker, Van der Heijden, & Prins, 2009; Taris, Schaufeli, & Verhoeven, 2005), and have poorer social relationships outside work (Robinson, 2007; Schaufeli, Taris, & Van Rhenen, 2008) than non-workaholic employees. Moreover, they experience low life satisfaction (Bonebright, Clay, & Ankenmann, 2000) and high levels of job strain and health complaints (Burke, 1999, 2000). In contrast, engaged employees are more satisfied with their jobs and are more committed to the organization (Schaufeli, Taris, & Van Rhenen, 2008), show more personal initiative (Sonnentag, 2003), exhibit more extra-role behavior and perform better (Salanova, Agut, & Peiró, 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), have a lower intention to leave the organization (Schaufeli & Bakker, 2004), and are less often absent (Schaufeli, Bakker, & Van Rhenen, 2009) than non-engaged employees. Further, engaged employees spend time on socializing, hobbies, and volunteer work (Schaufeli et al, 2001), and experience high life satisfaction and good mental and physical health (Schaufeli & Salanova, 2007a; Schaufeli, Taris, & Van Rhenen, 2008).

Thus, despite the fact that both workaholic employees and engaged employees work hard, workaholism and work engagement apparently represent different psychological states as exemplified by their associations with different types of outcomes. Generally speaking, workaholism is associated with negative outcomes, while work engagement is linked to positive outcomes. This is why workaholism is considered inherently "bad" and work engagement is considered inherently "good" (Schaufeli, Taris, & Bakker, 2008). The difference between both constructs is also found at the measurement level: Schaufeli, Shimazu and Taris (2009) showed that workaholism and work engagement correlate only weakly, with r s of $-.19$ in their Dutch and $-.05$ in their Japanese samples. Apparently, it makes good sense to distinguish between workaholism and work engagement. However, this raises the question of *how* these two concepts relate to each other. For example,

are the well-being correlates the same for both concepts? Can high levels of work engagement compensate the adverse consequences of workaholism? And does the underlying work motivation differ for workaholism and work engagement? The latter question is especially interesting because the motivational antecedents of workaholism and work engagement have as yet hardly been examined. The present study addresses these and other issues by studying workaholism and work engagement simultaneously.

Furthermore, the relative independence of both concepts implies that four types of workers may be distinguished: (a) employees who are workaholic and non-engaged (workaholic employees), (b) employees who are non-workaholic and engaged (engaged employees), (c) employees who are both workaholic and engaged (engaged workaholics), and (d) employees who are non-workaholic and non-engaged (non-workaholic/non-engaged workers). The latter type of workers refers to those who are satisfied with accomplishing the prescribed tasks without going beyond organizational requirements: they are satiated rather than activated. This classification of the four groups resembles that of Spence and Robbins (1992), but builds on contemporary concepts in occupational health psychology: workaholism (excluding enjoyment, cf. Mudrack, 2006) and work engagement. By exploring the differences and similarities of these four groups, the present study seeks to clarify the nature, antecedents, and consequences of working hard.

Below we first address the theoretical frameworks used in the present study regarding the associations among motivation, health and well-being. Then we consider how the four workaholism-work engagement combinations can be linked to these concepts.

5.1.1 Motivation

Self-Determination Theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) is a valuable theoretical framework for examining the motivation underlying the various combinations of workaholism and work engagement (Van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012). SDT postulates that a fundamental distinction in the motivational regulation of behavior is that between intrinsic and extrinsic motivation. Intrinsic motivation refers to performing an activity because it is experienced as inherently enjoyable and satisfying. Intrinsically motivated people engage in an activity with a full sense of volition and choice. Hence, intrinsically motivated behavior is truly autonomous or self-determined. Conversely, extrinsic motivation refers to performing an activity because of its instrumental value. Within SDT, four forms of extrinsic motivation are distinguished that vary regarding the extent to which people engage in an activity with a sense of volition and choice. In other words, the different types of extrinsic motivation can be placed along a

continuum ranging from non-self-determined behavior to self-determined behavior (Deci & Ryan, 2000; Ryan & Deci, 2000, cf. Figure 5.1).

First, two controlled or non-self-determined forms of extrinsic motivation are distinguished: external and introjected regulation. Externally regulated behavior is motivated by external contingencies involving threats of punishments, or material or social rewards. Applied to work, employees whose behavior is externally regulated may be motivated by fear of being laid off or by monetary incentives. Since externally regulated behavior is regulated by forces in the social environment, it is considered fully non-self-determined. Introjected regulation is the product of an internalization process in which people rigidly adopt external standards of self-worth and social approval without fully identifying with them. Meeting these standards produces feelings of high self-worth and self-esteem, whereas failing to meet these standards leads to self-criticism and negative affect (Deci & Ryan, 2002; Koestner & Losier, 2002). Employees whose behavior is introjectedly regulated are motivated by acquiring positive feelings, such as pride, or avoiding negative feelings, like unworthiness. Since people do not fully identify with the adopted external standards, they experience a conflict between behaving in accord with the adopted external standards and what they personally find important and want. For this reason, introjectedly regulated behavior is somewhat non-self-determined. External regulation and introjected regulation constitute controlled motivation, because people experience an external or internal pressure to engage in a particular activity (Deci & Ryan, 2000; Ryan & Deci, 2000).

Second, two autonomous or self-determined forms of extrinsic motivation are distinguished: identified and integrated regulation. These two forms are not only the product of an internalization process in which people adopt external standards, but also of an integration process in which these standards become part of their self. When people identify themselves with the reason for a particular behavior, their motivational regulation is labeled as identified (Deci & Ryan, 1985; Ryan & Deci, 2000). Applied to work, employees whose behavior is regulated this way may be motivated by its importance for their own career path. Since there is identification with the reason for a particular activity, people will experience some ownership of their behavior. As a result, behavior characterized by identified regulation is somewhat self-determined. When the reason for a behavior is experienced as consistent with other important values and needs and constitutes an integral part of the self, the motivational regulation is labeled as integrated (Deci & Ryan, 1985; Ryan & Deci, 2000). For example, employees whose behavior is regulated this way are motivated to perform their job because it is completely in line with their core values and with “who they are”. Like intrinsically motivated behavior, behavior characterized by integrated regulation is fully self-determined,

because people experience their behavior as entirely volitional. However, in SDT it is still considered as extrinsic motivation, since an activity is performed for its instrumental value. Because of its overlap with intrinsic motivation (Ryan & Deci, 2000) and because it is psychometrically difficult to distinguish items measuring integrated regulation from the other items (Gagné et al., 2010), integrated regulation is not included in the present study. Identified regulation and intrinsic regulation constitute autonomous motivation, because people experience at least some ownership of their behavior when they engage in a particular activity (Deci & Ryan, 2000).

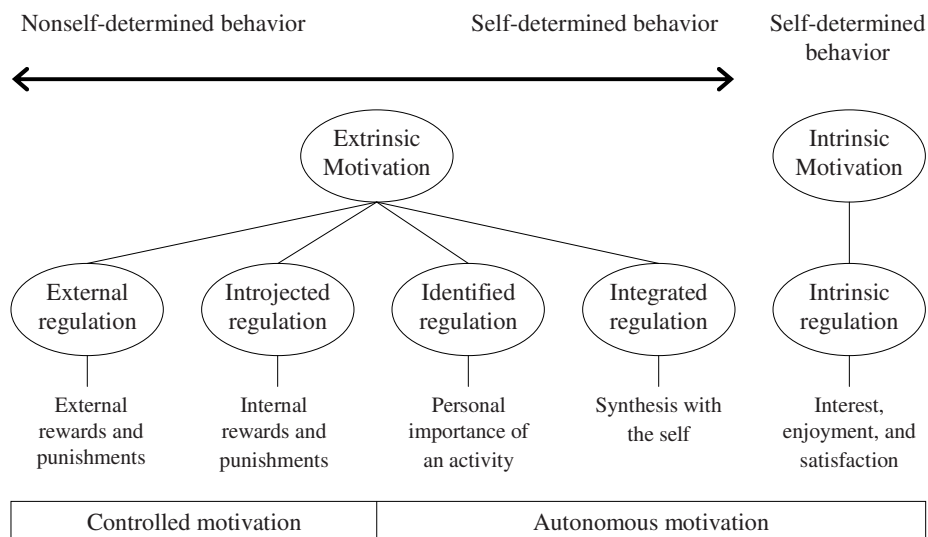


Figure 5.1. Self-Determination Theory (based on Ryan & Deci, 2000).

5.1.2 Health and well-being

Meijman and Mulder's (1998) effort-recovery (E-R) model is a valuable theoretical framework for examining health and well-being. The E-R model focuses on the consequences of working hard for employee health and well-being. The model posits that working requires investment of effort that is accompanied by short-term load reactions that occur at the physiological, behavioral, and subjective levels (i.e., physiological and psychological costs). When employees stop working (e.g., during a break or after a work day), their psychobiological systems will return to and stabilize at baseline levels, leading to diminishing load reactions (recovery). However, when employees cannot fully recover from their work (e.g., due to long working hours), a

downward spiral may be activated: compensatory effort is needed to keep their performance at the same level. As a consequence, the physiological and psychological costs as well as the need for recovery increase (Hockey, 1997), and so forth. Frequent and/or continuous exposure (i.e., sustained activation) to work accompanied by insufficient possibilities for recovery may lead to an accumulation of load reactions (allostatic load) and in the long term to impaired well-being and health problems (Ursin & Eriksen, 2004) such as exhaustion, sleeping disturbances, and psychosomatic complaints. These reactions may persist for a longer period of time and may become irreversible (Sonnentag, 2001; Taris et al., 2006).

5.1.3 The present study

With these theoretical frameworks in mind, the four groups can be characterized in terms of their expected motivation, working hours, and well-being (i.e., levels of burnout).

Controlled motivation. Workaholic employees are assumed to be motivated by the desire to avoid negative emotions, since not working elicits distress and negative emotions, such as irritability, anxiety, shame, and guilt (Killinger, 2006; Schaufeli, Taris, & Bakker, 2008). In addition, workaholic employees are expected to be motivated by a higher need to prove themselves, since it has been suggested that workaholism develops in response to feelings of low self-worth and insecurity (Mudrack, 2006; Robinson, 2007). Ego involvement is characteristic of introjected regulation (Ryan, 1982): if people meet the (partially) adopted external standards, they buttress themselves with feelings of self-esteem and self-worth. If they fail to meet these standards, they experience negative emotions and low self-worth (Deci & Ryan, 2002; Koestner & Losier, 2002). In line with this reasoning, recent research among Chinese nurses and physicians demonstrated that workaholism and introjected regulation are positively associated (Van Beek et al., 2012). It is likely that the same holds for engaged workaholics. Accordingly, workaholic employees and engaged workaholics are expected to be sensitive to and motivated by threats of punishments and social rewards. For instance, disapproval by others can undermine a sense of self-esteem, whereas appreciation by others can provide a sense of self-esteem and self-worth. This agrees with the assumption that workaholic employees are stimulated by status, peer admiration, and supervisors' approval (Spence & Robbins, 1992). Contrary to workaholic employees, engaged employees experience high self-esteem and self-efficacy (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). People with a positive view of themselves are less strongly influenced by others and their feedback (Brockner, 1988). Hence, *workaholic employees and engaged workaholics will be more strongly driven by controlled motivation (i.e., external regulation and introjected regulation) than engaged employees and non-*

workaholic/non-engaged employees (Hypothesis 1).

Autonomous motivation. People with a positive view of themselves are more likely to pursue goals that they believe to be important, joyful, and interesting (Judge, Bono, Erez, & Locke, 2005). Since engaged employees experience high self-esteem and self-worth (Xanthopoulou et al., 2007), it can be assumed that engaged employees work hard because they value their work, have integrated their work goals into their selves, and enjoy their work for its own sake. They seem to be passionately fond of their work and they seem to derive great pleasure from it. Recent findings indeed suggest that work engagement increases with increasing autonomous motivation (Van Beek et al., 2012). It is likely that the same holds for engaged workaholics. Since workaholic employees are strongly absorbed in their work to preserve a positive self-evaluation, they will not be able to perform activities that they find important and joyful. Hence, we expect that *engaged employees and engaged workaholics will be more strongly driven by autonomous motivation (i.e., identified regulation and intrinsic motivation) than workaholic employees and non-workaholic/non-engaged employees* (Hypothesis 2).

Working hours. We assume that both workaholic employees and engaged employees work hard and spend much time on their work, albeit for different reasons. While workaholic employees are driven by controlled motivation, engaged employees are driven by autonomous motivation. However, engaged workaholics may work even harder than workaholic employees and engaged employees, because they are driven by controlled *and* autonomous motivation. Specifically, the eagerness to obtain feelings of self-worth and self-esteem in combination with interest in and enjoying the job may strengthen workers' perseverance and their willingness to go the extra mile. Whereas workaholic employees stop working when external standards and partially adopted external standards of self-worth are met, engaged workaholics may continue because they enjoy it. And whereas engaged employees stop working when they do not enjoy it anymore, engaged workaholics may continue because they have not yet met the external and partially adopted external standards of self-worth. Conversely, non-workaholic/non-engaged employees are expected to stop working when the prescribed tasks have been accomplished. Therefore, *non-workaholic/non-engaged employees will spend least time and engaged workaholics will spend most time on work* (Hypothesis 3).

Burnout. Past research has frequently studied burnout as an outcome of (lack of) recovery (e.g., Taris et al., 2006), as it is related to various health complaints, including sleeping disturbances, psychosomatic complaints, depression, cardiovascular diseases, anxiety, and acute infections (Shirom, Melamed, Toker, Berliner, & Shapira, 2005). Burnout is "a state of exhaustion in which one is cynical about the value of one's occupation and doubtful of one's capacity to perform"

(Maslach, Jackson, & Leiter, 1996, p. 20). Previous theorizing and research have shown that exhaustion (referring to the depletion of mental resources) and cynicism (an indifferent and detached attitude toward one's work) are the core of the burnout syndrome (cf. Schaufeli & Taris, 2005; Schaufeli & Salanova, 2007b).

Although engaged workaholics are expected to spend most time on work, workaholic employees may be most vulnerable for developing burnout. Workaholic employees invest behaviorally and cognitively much effort in their work, report more work-home interference (Schaufeli, Bakker, Van der Heijden, & Prins, 2009), have poorer social relationships outside work (Schaufeli, Taris, & Van Rhenen, 2008), and experience higher levels of job strain (Burke, 1999, 2000; Taris, Van Beek, & Schaufeli, 2010). Therefore, they have little opportunity to recover from work sufficiently and, hence, they will deplete their energy more than others. This corresponds with earlier suggestions that workaholism may be a root cause of burnout (Maslach, 1986; Porter, 2001). Unlike workaholic employees, engaged employees are characterized by high levels of energy and mental resilience, do not experience work-home interference, and spend time on socializing, hobbies, and volunteer work (Schaufeli et al., 2001). As a result, they are likely to recover sufficiently from work. This is consistent with findings that work addicts (comparable with workaholic employees) and enthusiastic addicts (engaged workaholics) experience higher levels of exhaustion than work enthusiasts (engaged employees; Burke & Matthiesen, 2004). However, we expect that the characteristics that are associated with work engagement may buffer the adverse effects of high workaholism in engaged workaholics. Hence, *workaholic employees will experience more burnout and engaged employees will experience less burnout than other employees* (Hypothesis 4). Table 5.1 summarizes our four hypotheses.

5.2 Method

5.2.1 Sample and Procedure

During a three-month study period, visitors to an internet site addressing career-related issues were invited to complete an on-line survey on work motivation. After completing the questionnaire, participants received automatically generated feedback on their scores. During the study, 1,329 out of 2,431 visitors who responded to our call completed the questionnaire. Of these 1,329 respondents, 58 were unemployed and excluded from further analysis. Closer inspection of the data revealed that 25 respondents had filled out the questionnaires more than once. Duplicate cases were randomly removed, leaving a single set of responses for each participant. As a result, 1,246 respondents (472 males, with a mean age of 45.5 years, $SD = 9.4$, and 774 females, with a mean age of 42.5 years, $SD = 9.1$) were included in the present study.

Table 5.1. Summary of the hypotheses

Variable	Non-workaholic/ non-engaged			Workaholic employees	Engaged workaholics
	employees	Engaged employees			
<i>Time investment</i>					
Working hours	0	+		+	++
<i>Controlled motivation</i>					
External regulation	0	0		+	+
Introjected regulation	0	0		+	+
<i>Autonomous motivation</i>					
Identified regulation	0	+		0	+
Intrinsic regulation	0	+		0	+
<i>Outcome</i>					
Burnout	0	-		+	0

5.2.2 Instruments

Workaholism was measured with the Dutch Work Addiction Scale (DUWAS; Schaufeli et al., 2009). The DUWAS consists of two subscales ($r = .75$, $p < .05$): *Working Excessively* (9 items) and *Working Compulsively* (7 items). The first subscale is based on the Compulsive Tendencies scale of Robinson's (1999) Work Addiction Risk Test, whereas the second scale is based on the Drive scale of Spence and Robbins' (1992) Workaholism Battery. Example items are: "I seem to be in a hurry and racing against the clock" (*Working Excessively*) and "I feel that there's something inside me that drives me to work hard" (*Working Compulsively*), 1 = "(almost) never", 4 = "(almost) always". Since workaholism can be considered a syndrome (i.e., a set of two characteristics that go together; see Schaufeli, Bakker, Van der Heijden, & Prins, 2009), a composite workaholism score (based on 16 items, $\alpha = .89$) was used in the present study.

Work engagement was measured with the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006). The UWES consists of three subscales: *Vigor* (3 items), *Dedication* (3 items), and *Absorption* (3 items). Example items are: "At my work, I feel strong and vigorous" (*Vigor*), "I am enthusiastic about my job" (*Dedication*), and "I am immersed in my work" (*Absorption*), 0 = "never", 6 = "always". Since it is recommended to use the overall scale as a measure of work engagement (Schaufeli et al., 2006), the overall UWES score (9 items, $\alpha = .95$) was used in the present study.

Motivation was measured with a 13-item scale that was based on the scales of Ryan and Connell (1989) and Vansteenkiste, Sierens, Soenens, Luyckx, and Lens (2009). This scale contains four subscales: *External regulation* (3 items, such as "I work to get others' approval (e.g., supervisor, colleagues, family, clients)", $\alpha = .78$), *Introjected regulation* (4 items, such as "I work because I must prove myself that I can", $\alpha = .78$), *Identified regulation* (3 items, such as "I work because I personally consider it important to put efforts in this job", $\alpha = .85$), and *Intrinsic regulation* (3 items, including "I work because I have fun doing my job", $\alpha = .88$). All items were scored on a scale ranging from 1 ("totally disagree") to 5 ("totally agree").

Working hours were measured with one self-constructed item: "How many hours do you actually work in an average week?" Previous research has shown that single-item measures are not necessarily inferior to multiple-item measures, especially where it concerns one-dimensional and unambiguous constructs like working hours (cf. Van Hooff, Geurts, Kompier, & Taris, 2007).

Burnout was operationalised using the *Emotional Exhaustion* (5 items) and *Cynicism* (4 items) scales ($r = .62$, $p < .05$) of the Maslach Burnout Inventory-General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). For example, emotional exhausted employees report that they are burned out from their

work and cynical employees report that they question the significance of their work, 0 = “never”, 6 = “always”. As burnout is a syndrome (Schaufeli & Taris, 2005), an overall score of burnout (9 items, $\alpha = .93$) was used in the present study.

5.2.3 Statistical analysis

Preliminary analyses. Structural Equation Modeling (SEM) methods as implemented in AMOS 16.0 (Arbuckle, 2007) was used to check: (a) whether the DUWAS and the UWES indeed measure two different kinds of working hard (divergent validity), and (b) whether the hypothesized four-factor structure for the motivation scale holds (factorial validity). Maximum likelihood estimation methods were used and the goodness-of-fit of the models were evaluated using the χ^2 test statistic, the Normed Fit Index (NFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Values larger than .90 for NFI and TLI and .08 or lower for RMSEA indicate acceptable model fit (Byrne, 2009).

Because it is recommended to have at least three or more indicators per factor in a confirmatory factor analysis (Chen, Bollen, Paxton, Curran, & Kirby, 2001), two parcels of items were created for each subscale of the DUWAS by randomly selecting items. For the subscale Working Excessively, one parcel contained 4 items and the other included 5 items. As regards the subscale Working Compulsively, one parcel consisted of 3 items, whereas the other included 4 items. Results of the confirmatory factor analysis showed that a two-factor model in which the item parcels of the DUWAS loaded on a latent factor and the subscales of the UWES loaded on a second latent factor fitted the data relatively well, $\chi^2(N = 1,246, df = 13) = 331.4$, NFI = .94, TLI = .91, RMSEA = .14, and significantly better, $\Delta\chi^2(N = 1,246, df = 1) = 2,564.8$, $p < .001$, than a one-factor model in which the item parcels of the DUWAS and the subscales of the UWES loaded on a single latent factor, $\chi^2(N = 1,246, df = 14) = 2,896.2$, NFI = .51, TLI = .26, RMSEA = .41. The simplicity of our two-factor model (Kenny & McCoach, 2003) and/or the high factor loadings (standardized regression weights varying from .69 to .94, median .86) in our model (Saris & Satorra, 1992), presumably explain the relatively high RMSEA. In addition, the correlation between the two latent factors was weak ($r = -.07$, $p < .05$), meaning that workaholism and work engagement share less than 0.5% of their variance and, importantly, that these two concepts are relatively independent. Hence, the DUWAS and the UWES assess two different kinds of working hard.

As regards the hypothesized four-factor structure of the motivation scale, a four-factor model with items loading on the expected dimensions fitted the data well, $\chi^2(N = 1,246, df = 59) = 539.9$, NFI = .93, TLI = .91, RMSEA = .08, and significantly better, $\Delta\chi^2(N = 1,246, df = 4) = 4,276.1$, $p < .001$, than a one-factor model in which all items loaded on a single latent factor, $\chi^2(N = 1,246, df = 65) =$

4,816, NFI = .35, TLI = .22, RMSEA = .24. The correlations among the four latent factors varied from -.12 to .66, median correlation = .12. Additional analyses showed that the four-factor model fitted the data also significantly better, $\Delta\chi^2(N = 1,246, df = 5) = 1,511.0, p < .001$, than a two-factor model in which the items of external regulation and introjected regulation loaded on one latent factor (representing controlled motivation), and all items of identified regulation and intrinsic regulation loaded on a second latent factor (tapping autonomous motivation), $\chi^2(N = 1,246, df = 64) = 2,050.9, NFI = .72, TLI = .67, RMSEA = .16$. Thus, our measure apparently assessed four distinct regulatory styles.

Main analyses. Since preliminary analyses revealed that workaholism and work engagement were relatively independent concepts, we distinguished among four groups of employees: (a) workaholic employees, (b) engaged employees, (c) engaged workaholics, and (d) non-workaholic/non-engaged employees. These four groups were created by Z-transforming the overall DUWAS and UWES scores, after which the two scales were dichotomized on their means. Crossing these two scales yielded the four groups of interest, with approximately equal numbers of participants in each group: 25.2% workaholic employees, 27.3% engaged employees, 22.2% engaged workaholics, and 25.3% non-workaholic/non-engaged employees. Table 5.2 shows that the four groups differed significantly in terms of their mean scores on workaholism and work engagement.

A 2 (Workaholism: workaholic vs. non-workaholic) x 2 (Work engagement: engaged vs. non-engaged) multivariate analysis of variance (MANOVA) tested whether the four groups varied on motivational regulation, working hours, and burnout. Since the four groups differed on more than one criterion variable, Pillai's trace was used as test statistic. Separate post-hoc 2 (Workaholism: workaholic vs. non-workaholic) x 2 (Work engagement: engaged vs. non-engaged) univariate analyses of variance (ANOVAs) were conducted for all criterion variables.

5.3 Results

Table 5.3 shows the mean values, standard deviations, and intercorrelations for the study variables. Workaholism was mainly positively associated with the two types of controlled motivation, whereas work engagement was predominantly positively related to the two types of autonomous motivation.

A 2 x 2 MANOVA revealed significant main effects for both Workaholism, $F(6,1237) = 56.86, p < .001$, partial $\eta^2 = .22$, and Work engagement, $F(6,1237) = 165.45, p < .001$, partial $\eta^2 = .45$. Furthermore, there was a significant interaction between Workaholism and Work engagement, $F(6,1237) = 3.59, p < .01$, partial $\eta^2 = .02$. These effects did not change after adjusting for age and gender. For simplicity we report the unadjusted findings.

Table 5.2. Results of MANOVA: comparison of time investment, motivation, and burnout among the four groups

Variable	Workaholic		Non-workaholic/ x		Non-engaged		Engaged		Workaholic		Engaged	
	Workaholic	Workaholic	Workaholic	Workaholic	Non-engaged	Non-engaged	Engaged	Engaged	Workaholic	Workaholic	Engaged	Engaged
	F	F	F	F	M	SD	M	SD	M	SD	M	SD
Workaholism	2279.83**	.56	3.43	3.43	1.64 ^a	.27	1.66 ^a	.24	2.52 ^b	.37	2.47 ^b	.35
Work engagement	4.36*	2750.42**	5.14**	5.14**	2.02 ^a	.77	4.21 ^b	.65	2.23 ^c	.63	4.16 ^b	.70
Time investment												
Working hours	57.00**	39.35**	.02	.02	33.00 ^a	8.87	36.47 ^b	9.53	37.16 ^b	9.57	40.49 ^c	10.20
Motivation												
External regulation	97.59**	21.60**	.00	.00	2.52 ^a	.95	2.28 ^b	.83	3.02 ^c	.89	2.78 ^d	.89
Introjected regulation	136.33**	4.85*	.41	.41	2.69 ^a	.86	2.55 ^a	.83	3.22 ^b	.84	3.14 ^b	.84
Identified regulation	8.41*	150.39**	.37	.37	3.64 ^a	.81	4.15 ^b	.61	3.78 ^a	.71	4.24 ^b	.64
Intrinsic regulation	1.19	833.30**	19.69**	19.69**	2.86 ^a	.93	4.22 ^b	.57	3.00 ^a	.69	4.00 ^c	.64
Outcome												
Burnout	148.49**	499.64**	6.23*	6.23*	2.43 ^a	1.16	1.02 ^b	.60	2.97 ^c	1.09	1.85 ^d	1.06

Note. * $p < .05$, ** $p < 0.001$; means with different superscripts differ significantly at $p < .05$.

Table 5.3. Means (M), standard deviations (SD), and correlations for the study variables (N = 1,246)

Variable	M	SD	1	2	3	4	5	6	7	8
1 Workaholism	2.05	.52	-							
2 Work engagement	3.15	1.24	.00	-						
Time investment										
3 Working hours	36.66	9.87	.25**	.19**	-					
Motivation										
4 External regulation	2.64	.93	.33**	-.13**	.01	-				
5 Introjected regulation	2.89	.89	.41**	-.05	.02	.55**	-			
6 Identified regulation	3.95	.74	.11**	.44**	.10**	-.01	.10**	-		
7 Intrinsic regulation	3.52	.94	-.06	.79**	.13**	-.12**	-.05	.45**	-	
Outcome										
8 Burnout	2.05	1.24	.41**	-.61**	-.08*	.29**	.27**	-.26**	-.60**	-

Note. * $p < .05$, ** $p < 0.01$.

Subsequent 2 x 2 ANOVAs (cf. Table 5.2) revealed significant main effects of Workaholism for time investment, external regulation, introjected regulation, identified regulation, and burnout. Furthermore, significant main effects were found of Work engagement for all six criterion variables. Regarding the interaction between Workaholism and Work engagement, significant effects were found for intrinsic regulation and burnout. Figure 5.2 and 5.3 show how the four different combinations of levels of workaholism and work engagement relate to participants' levels of intrinsic regulation and burnout.

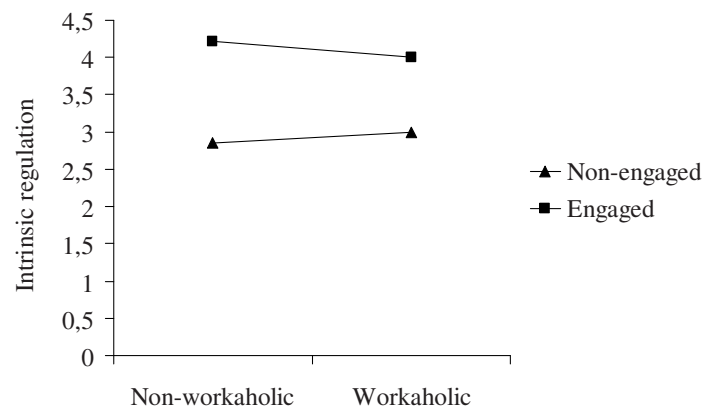


Figure 5.2. Levels of intrinsic regulation for the four different groups.

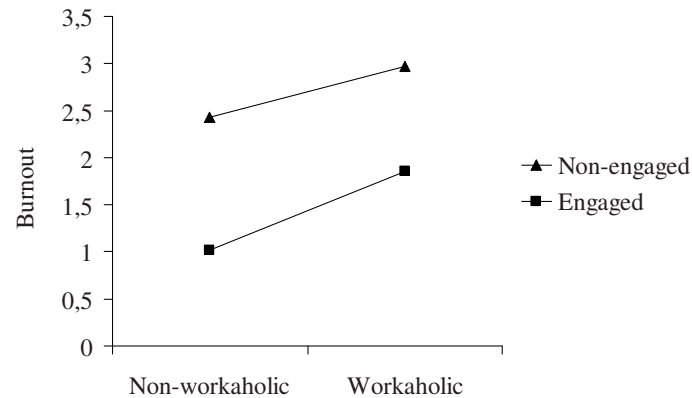


Figure 5.3. Levels of burnout for the four different groups.

5.3.1 Examining the hypotheses

Controlled motivation. Hypothesis 1 stated that workaholic employees and engaged workaholics would be more strongly driven by controlled motivation than engaged employees and non-workaholic/non-engaged employees. The findings presented in Table 5.2 confirmed Hypothesis 1. Although workaholic employees were significantly more driven by external regulation than engaged workaholics, there were no significant differences observed between the two types of workers regarding introjected regulation. Hence, our findings support the idea that workaholic employees and engaged workaholics are driven by controlled motivation.

Autonomous motivation. Hypothesis 2 proposed that engaged employees and engaged workaholics would be more strongly driven by autonomous motivation than workaholic employees and non-workaholic/non-engaged employees. Table 5.2 shows that, although engaged employees and engaged workaholics did not significantly differ in the extent to which they were motivated by identified regulation, engaged employees showed the highest levels of intrinsic regulation. Specifically, the interaction effect revealed that high levels of workaholism lower the effects of high levels of work engagement on intrinsic regulation. The simple slope of the association between workaholism and intrinsic regulation was $.08, p < .05$, for the non-engaged group, and $-.18, p < .05$, for the engaged groups. Thus, our findings corroborate the idea that engaged employees and engaged workaholics are driven by autonomous motivation (Hypothesis 2 confirmed).

Working hours. Hypothesis 3 stated that non-workaholic/non-engaged employees would spend least time and engaged workaholics would spend most time on work. Table 5.2 shows that non-workaholic/non-engaged employees worked on average 33 hours per week, while engaged workaholics worked on average over 40 hours per week. Workaholic employees and engaged employees did not differ significantly from each other regarding the amount of working hours per week: both groups worked approximately 37 hours per week, thus confirming Hypothesis 3.

Burnout. Finally, Hypothesis 4 proposed that workaholic employees would experience more burnout and engaged employees would experience less burnout than others. As Table 5.2 shows, our findings confirmed Hypothesis 4. In addition, whereas engaged workaholics experienced significantly less burnout than workaholic employees, they reported significantly more burnout than engaged employees. Specifically, the interaction effect revealed that high levels of work engagement lower the effects of high levels of workaholism on burnout. The simple slope of the relation between workaholism and burnout was $.24, p < .05$, for the non-engaged employees and $.44, p < .05$, for the engaged employees. Hence, our findings support the idea that work engagement buffers the adverse effects of workaholism.

5.4 Discussion

The present study was designed to clarify previous diverging findings concerning the nature, antecedents, and consequences of working hard. Drawing on a convenience sample of 1,246 Dutch participants, our findings showed that workaholism and work engagement are two relatively independent concepts. Four types of workers were distinguished – workaholic employees, engaged employees, engaged workaholics, and non-workaholic/non-engaged employees – and compared regarding motivation, working hours, and burnout. We believe that the three most interesting findings are the following:

First, our findings suggest that whereas workaholic employees are mainly driven by controlled motivation, work engaged employees are mainly driven by autonomous motivation. Thus, the underlying motivation of both types of working hard differs fundamentally, confirming similar findings in a Chinese sample (Van Beek et al., 2012). Workaholic employees engage in job activities for their instrumental value. Apparently, they are motivated by external contingencies involving threats of punishments, i.e., disapproval by others, and social rewards, i.e., appreciation by others. This finding is in line with the idea that workaholic employees are encouraged by status, peer admiration, and supervisors' approval (Spence & Robbins, 1992). In addition, they seem to have adopted external standards of self-worth and social approval without fully identifying with them. Since failing to meet these external standards results in self-criticism and negative feelings (Deci & Ryan, 2002; Koestner & Losier, 2002), workaholic employees seem to be eager to meet these standards in order to experience self-worth and self-esteem. This supports earlier observations of clinical psychologists who reported that workaholic employees depend on their work to define who they are and to gain a positive sense of themselves (e.g., Robinson, 2007). Our survey findings and these observations converge in explaining why workaholic employees have an inner compulsion to work hard.

Engaged employees engage in their job for its own sake. Apparently, they experience their job as inherently enjoyable and satisfying, and they work so hard just for the fun of it. In addition, they seem to value their work personally. This may explain why engaged employees experience high levels of energy and mental resilience while working, are willing to invest effort in their work, persist in the face of difficulties, and are strongly involved in their work (Schaufeli et al., 2002). This finding confirms that people with a positive self-evaluation are likely to pursue goals that they find joyful, interesting, and important (Judge et al., 2005) and are less strongly influenced by others and their feedback (Brockner, 1988). While workaholic employees experience some pressure, engaged employees act with a

sense of volition: put differently, workaholics are “pushed” to their work, whereas engaged employees are “pulled” to their work (Taris et al., 2010).

Engaged workaholics are driven by both controlled and autonomous motivation. They seem to be sensitive to external contingencies and adopted external standards of self-worth and social approval, *and* they personally value and enjoy their job activities. So, they are simultaneously pushed and pulled to their work. Non-workaholic/non-engaged employees are not strongly driven by any of these motivations, which is in line with the idea that they are satisfied with accomplishing their prescribed work tasks and will not go the extra mile.

Second, our findings suggest that whereas both workaholism and work engagement increase the expenditure of time to work, the *combination* of workaholism and work engagement leads to spending even more time on work. Although workaholic employees’ and engaged employees’ underlying motivations differ, both groups work equally hard and harder than non-workaholic/non-engaged employees. However, engaged workaholics spend most time on work. The combination of controlled and autonomous motivation may foster perseverance and the willingness to continue working after others have called it quits. Whereas workaholic employees may stop working as soon as they have met external standards and partially adopted external standards of self-worth, engaged workaholics may continue because they enjoy it as well. And whereas engaged employees may stop working as soon as they do not enjoy it anymore, engaged workaholics may continue because they have not yet met the external standards and partially adopted external standards of self-worth.

Third, our findings suggest that despite of working equally hard, workaholic employees experience the highest and engaged employees experience the lowest levels of burnout. The high levels of burnout among workaholic employees may be due to some characteristics that are associated with workaholism, i.e., work-home interference (Schaufeli, Bakker, Van der Heijden, & Prins, 2009), poor social relationships outside work (Schaufeli, Taris, & Van Rhenen, 2008), and higher levels of job strain (Burke, 2000; Taris et al., 2010). These issues are energy consuming and impede the recovery process after working. When this unfavorable situation persists over a longer period of time, load reactions accumulate and may result in burnout. Since burnout is related to various other health complaints (Shirom et al., 2005), workaholic employees may well suffer poor health and well-being. Conversely, engaged employees appear to be able to recover adequately from their work (Sonnentag, 2003). Interestingly, in spite of working harder than others, engaged workaholics experience less burnout than workaholic employees, but more burnout than engaged employees. Apparently, work engagement buffers against the

adverse effects of workaholism, rendering engaged workaholics less vulnerable for developing burnout.

5.4.1 Study strengths and limitations

Three limitations of the present study must be discussed. Two of these relate to the nature of the data, i.e., a cross-sectional convenience sample. Firstly, the cross-sectional nature of the sample implies that causal inferences are not warranted. Although it is tempting to conclude that differences in underlying motivations account for differential levels of workaholism and work engagement, the present study only shows that there are significant and interpretable differences among the four study groups. Thus, it is unclear whether the difference in intrinsic regulation for non-workaholic/non-engaged employees versus engaged employees is a cause or merely a correlate of work engagement. Only a longitudinal design can address such issues. Although the evidence presented here is not conclusive, it demonstrates that longitudinal follow-up research on workaholism, work engagement, motivation, and well-being is worthwhile and may lead to practically relevant as well as scientifically important insights on why employees work so hard.

Secondly, since the data were collected using a relatively unstructured internet-based design, we have only modest insight in the type of employees who completed our questionnaire. Thus, we cannot claim that our sample represents the average Dutch worker. The study participants may well have been more interested in career-related information than the average worker, since the questionnaire was hosted on an internet site addressing career-related issues. The implications for the present findings are unclear. It is possible that workaholics, engaged and (perhaps) burned-out workers are overrepresented in our sample as these groups may be assumed to be interested in career-related information. If so, this will have led to a restriction of range of the true scores on these concepts, a corresponding lack of power, and effect sizes that are estimated conservatively. If so, this lack of power will be counterbalanced by the sheer size of the present sample. The fact that most analyses presented in this study yielded significant differences among the groups suggests that lack of power did not present major problems. Furthermore, since our findings are in line with recent findings by Van Beek et al. (2012) who studied two well-defined samples, there is no reason to assume that the findings presented here are unique to the current sample.

Finally, it should be noted that although the two multiplicative interactions between workaholism and work engagement obtained in this study were statistically significant, the main effects of these two concepts on the study outcomes were far more important. This suggests that the primary importance of these interactions lies in their theoretical implication that the effects of workaholism on work outcomes

may vary slightly as a function of work engagement, rather than in their practical implication.

5.4.2 Study implications

In spite of these limitations, the present study extends and enhances our current knowledge on workaholism and work engagement in several respects. A first contribution of the present study is that it provides knowledge about the motivational bases underlying workaholism and work engagement. Workaholic employees are apparently driven by external pressure *as well as* by an inner pressure to work hard, while engaged employees act with a sense of volition. These findings strengthen the notion that workaholism and work engagement are two relatively independent concepts, each with a different underlying motivational dynamic.

A second contribution is that our study revealed the existence of a sizeable group of employees who are *simultaneously* workaholic and work-engaged, meaning that three different groups of hard workers can be distinguished: workaholic employees, engaged employees, and engaged workaholics. This result superficially resembles Spence and Robbins' (1992) earlier classification that included three types of workaholics: work addicts, work enthusiasts, and enthusiast workaholics. The strength of the current findings is that they build upon concepts that are currently used in occupational health psychology: workaholism (measured in terms of working excessively and compulsively) and work engagement. The existence of three different groups provides an explanation for the contradictory findings (Beckers et al., 2004; Taris et al., 2010; Van der Hulst, 2003) regarding the relation between working hard on the one hand and employee health and well-being on the other hand. The sign of this association may well depend on the type of "workaholics" dominating the study sample.

A third contribution is that our study revealed that measuring workaholism exclusively in terms of number of working hours (e.g., Brett & Stroh, 2003) is inappropriate. Those who work hardest show distinct signs of workaholism as well as work engagement (i.e., high levels of vigor, dedication, and absorption). In addition, "typical" workaholic employees and "typical" engaged employees work equally hard. Consequently, the findings of studies in which workaholism is exclusively measured in terms of number of working hours are likely to be confounded by not distinguishing among very different groups of hard workers. Hence, such simple measures of workaholism are inappropriate. In order to distinguish workaholic employees from other hard working employees, workaholism should be measured by both working excessively and working compulsively.

A fourth contribution is that our study discredited the assumption that workaholic employees can only be found in countries where the average number of working hours is high, such as Japan and the US (OECD, 2004). External (social) standards, including the prevailing number of working hours that the average employee spends on working, differ among countries, implying that in some countries workaholic employees will spend more hours working than in other countries to avoid social disapproval, to obtain feelings of being appreciated by others, and to "earn" feelings of self-worth. Therefore, it is likely that the number of working hours typically worked by workaholic employees differs across countries and that workaholic employees can be found in countries with a high "regular" number of working hours as well as in countries such as the Netherlands, where the regular number of working hours is substantially lower.

A fifth contribution is that our study suggests that engaged employees are most valuable for companies: they work hard and experience low levels of burnout. Since engaged employees are driven by autonomous motivation, work engagement may be promoted by enhancing autonomous motivational regulation. One obvious way of doing this is by creating a supportive and challenging work environment (Van den Broeck, Vansteenkiste, & De Witte, 2008), that is, by clarifying the purpose for work activities, admitting that some work activities are not interesting, offering choices, giving positive feedback, and offering challenging activities. It may be interesting for future research to examine this notion in more detail. By contrast, workaholic employees work hard and experience high levels of burnout. Therefore, employees should be vigilant not to become workaholic. Although engaged workaholics work harder than others and experience less burnout than workaholic employees, at present it is too soon to draw strong inferences regarding the value of this type of workers for companies. For instance, whereas we found some evidence that engagement may buffer the adverse effects of high levels of workaholism, the magnitude of these effects was only small. It is up to future research to unravel the antecedents as well and the consequences of engaged workaholism. Thus, our findings should not be taken to mean that organizations should promote "engaged workaholism" among their employees.

5.4.3 Concluding comment

All in all, the present study emphasizes that, although they may look similar from the outset, workaholic employees and engaged employees are not identical: rather than being dead ringers, they seem to present different worlds. Although they work equally hard, they differ regarding motivational regulation and burnout. In addition, the present study suggests the existence of a third, hard working group: employees who are both workaholic and work engaged. In spite of working even harder than

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workaholic employees and engaged employees, they do not experience more burnout, which may suggest that work engagement can act as a buffer against the adverse consequences of “pure”, undiluted workaholism. It is for future research to explain these findings in further detail, to focus on engaged workaholics, and to broaden our knowledge about this intriguing group of workers.

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Chapter 6
For fun, love, or money:
What drives workaholic, engaged, and burned-out
employees at work?

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6.1 Introduction

The world of work is rapidly changing. Global competition, a high pace of innovation, and the tendency towards assigning people to projects rather than to jobs make work more demanding (Frese, 2008). In response to these developments, employees must continuously expand their knowledge, build social networks, and compete with others. Moreover, with the advent of the internet and computer-based working, employees can work wherever and whenever they want, blurring the boundary between work and private life. Taken together, these changes both allow and stimulate employees to work harder than before.

Two types of working hard can be distinguished: workaholism, a "bad" type, and work engagement, a "good" type (Shimazu & Schaufeli, 2009). Since these two forms of working hard are associated with different individual and organizational outcomes (Schaufeli, Taris, & Van Rhenen, 2008), it is vitally important to enhance our understanding of the relation between working hard and work motivation. The present study addresses this issue by examining workaholism, work engagement, and burnout in relation to the qualitatively different types of motivation described in Deci and Ryan's (1985) Self-Determination Theory.

6.1.1 Workaholism, work engagement, and burnout

Workaholism, work engagement, and burnout are three different kinds of job-related well-being (Schaufeli et al., 2008). Workaholism refers to "the tendency to work excessively hard and being obsessed with work, which manifests itself in working compulsively" (Schaufeli, Shimazu, & Taris, 2009, p. 322). Workaholic employees work harder than their colleagues and harder than is required in order to meet organizational or economic standards. They think about their work continuously and they experience a strong and uncontrollable inner drive to work hard (McMillan & O'Driscoll, 2006; Scott, Moore, & Miceli, 1997). In this sense, workaholic employees are driven or "pushed" to work.

Workaholism is related to a variety of negative outcomes for employees, their spouses, and their companies. For instance, workaholic employees experience more interpersonal conflict at work (Mudrack, 2006), are less satisfied with their jobs (Burke & MacDermid, 1999), report more work-home interference (Schaufeli, Bakker, Van der Heijden, & Prins, 2009; Taris, Schaufeli, & Verhoeven, 2005), and have poorer social relationships outside work than other employees (Bonebright, Clay, & Ankenmann, 2000). Further, they experience low life satisfaction (Bonebright et al., 2000; McMillan & O'Driscoll, 2004), and high levels of job strain and health complaints (Burke, 2000). Judging from these negative outcomes, workaholism clearly is a bad type of working hard.

Work engagement is "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Vigor refers to high levels of persistence, energy, and mental resilience while working, and the willingness to invest effort in one's work. Dedication refers to being strongly involved in one's work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption refers to being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work. Therefore, engaged employees are characterized by passion for their work (Schaufeli & Bakker, 2010): they are "pulled" to work.

Contrary to workaholism, work engagement is associated with positive outcomes. Engaged employees are more satisfied with their jobs and are more committed to the organization (Schaufeli et al., 2008), show more proactivity (Salanova & Schaufeli, 2008; Sonnentag, 2003), and exhibit more extra-role behavior and perform better (Salanova, Agut, & Peiró, 2005). Moreover, they experience high life satisfaction and good health (Schaufeli & Salanova, 2007a; Schaufeli et al., 2008). Therefore, work engagement is a good type of working hard.

Burnout is often defined as a state of exhaustion in which workers are cynical about the value of their occupation and doubtful of their capacity to perform (Maslach, Jackson, & Leiter, 1996). The core of burnout consists of exhaustion (i.e., the depletion of mental resources) and cynicism (an indifferent and detached attitude toward one's job). The third aspect of burnout, lack of professional efficacy, is currently not considered a central aspect of burnout (Schaufeli & Salanova, 2007b) and is not examined here. In contrast to workaholic and engaged employees, employees experiencing burnout are not pushed or pulled to work. Rather, they have developed a mental distance towards their work.

Like workaholism, burnout is related to a variety of negative outcomes. Employees experiencing burnout are more dissatisfied with their jobs, are less committed to the organization, are more often planning to leave the organization, are more often absent, and perform poorer than other employees (Maslach, Schaufeli, & Leiter, 2001). Moreover, burnout is related to health complaints such as depression, psychosomatic complaints, cardiovascular diseases, sleeping disturbances, anxiety, and acute infections (Shirom, Melamed, Toker, Berliner, & Shapira, 2005). Consequently, burnout is a detrimental job-related state of mind.

Although the conceptualization of workaholism, work engagement, and burnout, and their consequences have been studied in detail, their motivational antecedents have hardly been examined. This is especially salient because it is likely that these antecedents differ. The present study fills this gap using Deci and Ryan's (1985) Self-Determination Theory (SDT).

6.1.2 Self-Determination Theory

According to SDT, human beings are active, growth-oriented organisms: they are predisposed to engage in interesting and enjoying activities, to use their capacities fully, to search for connectedness with others and to integrate their experiences (both intrapersonal and interpersonal) in a relative unity (Deci & Ryan, 2000). SDT proposes that the social environment influences the growth-oriented tendency by either supporting or thwarting it. Therefore, the interaction between individuals and their environment is the basis for predictions about motivation, behavior, and the extent to which personal growth takes place.

Within SDT, a major distinction in the motivational regulation of behavior is made between intrinsic and extrinsic motivation. Individuals who are intrinsically motivated to perform an activity experience that activity as interesting, enjoyable, and satisfying, that is, they engage in an activity for its own sake and act with a full sense of volition (Gagné & Deci, 2005; Ryan & Deci, 2000a). Therefore, intrinsically motivated behavior is autonomous or self-determined. Individuals who are extrinsically motivated to perform an activity do so because of its instrumental value (Gagné & Deci, 2005; Ryan & Deci, 2000b). For them, the outcome of the activity differs from the activity itself. For instance, most work behavior will be partly externally motivated as work is not exclusively interesting, enjoyable, and satisfying. Most individuals work to earn a living and must therefore accept that work is not only fun.

SDT proposes that extrinsic motivation varies regarding the extent to which behavior is autonomous or self-determined (Ryan & Deci, 2000a). First, two types of controlled extrinsic motivation are distinguished: external and introjected regulation. Externally regulated behavior is motivated by external contingencies involving threats of punishments, and material or social rewards. For example, an employee whose work behavior is externally regulated may perform his work to avoid being criticised by his supervisor or to obtain a salary increase. This type of behavior is experienced as most controlled, since it is regulated by the social environment and, thus, non-self-determined. Introjected regulation is a product of an internalization process in which individuals rigidly adopt external standards of self-worth and social approval without fully identifying with them. Meeting these introjected standards results in feelings of self-worth and self-esteem, whereas failing to meet these standards leads to self-criticism and negative feelings (Deci & Ryan, 2002; Koestner & Losier, 2002). Thus, introjected regulation represents regulation by contingent self-esteem (Ryan & Deci, 2000b). For example, an employee who is motivated by introjected regulation does her work in order to obtain positive feelings, such as pride, or to avoid negative feelings, like unworthiness. In spite of the internalization process, this type of behavior is

experienced as relatively controlled because individuals feel they must comply with partially internalized external standards that may conflict with their personal preferences (Ryan & Deci, 2000a).

Second, SDT distinguishes two types of autonomous extrinsic motivation: identified and integrated regulation. These motivations are not only the product of an internalization process in which individuals adopt external standards but also of an integration process in which individuals transform these standards to become an integral part of the self. When individuals accept and identify with the underlying value of a particular behavior, their motivational regulation is labeled as identified (Ryan & Deci, 2000a). For example, an employee who is motivated by identified regulation realizes the importance of his work for his chosen career path. Since individuals experience some ownership of their behavior, this type of behavior is relatively autonomous. When the underlying value of a particular behavior is experienced as consistent with other important values and constitutes an integral part of the self, its regulation is integrated (Ryan & Deci, 2000a). For example, an employee who is motivated by integrated regulation performs her job because it is completely in line with her core values. This type of behavior is truly autonomous because individuals experience their behavior as entirely volitional. Since behavior that is motivated by integrated regulation shares many characteristics with behavior that is motivated by intrinsic regulation (Ryan & Deci, 2000a), integrated regulation is not examined separately here.

The social (or work) environment can facilitate or undermine internalization and integration processes, intrinsic motivation, and personal growth by supporting or thwarting three innate psychological needs (Deci & Ryan, 2000): the needs for relatedness, competence, and autonomy. The need for relatedness refers to the need for experiencing positive relationships with others and mutual respect, caring, and reliance (Baumeister & Leary, 1995). The need for competence refers to the need for accomplishing challenging tasks successfully and obtaining desired results (White, 1959). Lastly, the need for autonomy refers to the need for experiencing freedom of choice and the opportunity to initiate behavior (Deci & Ryan, 2000). Satisfaction of the three psychological needs, autonomous motivation, and the possibility to satisfy one's innate growth tendency are associated with optimal functioning and well-being. With respect to the work context, research has shown that satisfaction of psychological needs and autonomous motivation are associated with positive outcomes, such as task persistence, superior performance, job satisfaction, positive work attitudes, organizational commitment, and psychological well-being, whereas controlled motivation can detract from effective performance and well-being (Gagné & Deci, 2005). Building upon this research, the present study explores the relation between various types of motivational regulation

and three different types of job-related well-being: workaholism, work engagement, and burnout.

6.1.3 The present study

Workaholism has little to do with true love of one's work or with a genuine desire to contribute to organizational goals. Rather, workaholic employees work hard because they *must* do so: not working evokes distress and negative emotions, such as irritability, anxiety, shame, and guilt. Apparently, workaholic employees try to avoid these negative feelings by throwing themselves into their work (Killinger, 2006). Furthermore, they have a higher need to prove themselves compared to non-workaholic employees. Therefore, it has been suggested that workaholism develops in response to feelings of low self-worth and insecurity (Mudrack, 2006). Ego involvement (Ryan, 1982), i.e., performing an activity in order to enhance or maintain self-esteem and self-worth, is prototypical for introjected regulation. In addition, workaholism is positively linked to socially prescribed perfectionism (Taris, Van Beek, & Schaufeli, 2010), that is, people's belief that significant others hold high standards for them and that they only will be accepted if they meet these standards (Hewitt & Flett, 1991). Socially prescribed perfectionism has been linked to controlled motivation, i.e., external regulation and introjected regulation (Miquelon, Vallerand, Grouzet, & Cardinal, 2005). Accordingly, it can be assumed that the social environment plays an important role when it comes to workaholism, since it can provide workaholic employees with a sense of self-esteem and self-worth. For instance, workaholic employees are expected to be encouraged by status, peer admiration, and supervisor approval (Spence & Robbins, 1992), and, based on research concerning self-esteem and self-efficacy, it is argued that workaholic employees pursue work that is likely to result in pay raises, promotions, or other signs of recognition (Porter, 1996). Recent findings confirmed that satisfaction of the three innate psychological needs is negatively linked to working compulsively (Andreassen, Hetland, & Pallesen, 2010), suggesting that for workaholic employees the freedom to be autonomously motivated is curtailed. Hence, it is expected that *workaholism will be positively associated with controlled extrinsic motivation, i.e., external regulation and introjected regulation* (Hypothesis 1).

Unlike workaholic employees, engaged employees work hard because they genuinely *want* to (Schaufeli & Bakker, 2010). Since engaged employees experience high self-esteem, self-efficacy, and optimism, they are confident about their capabilities and optimistic about their future (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Individuals who evaluate themselves positively are less strongly affected by the social environment and by feedback (Brockner, 1988), and are likely to pursue goals that fit their ideals, interests, and values (Judge, Bono, Erez, &

Locke, 2005). Therefore, engaged employees will pursue self-concordant goals and engage in their work activities for autonomous reasons. In line with this notion, work engagement is associated with freedom in carrying out work activities and participating in work-related decisions (Schaufeli et al., 2008), indicating that engaged employees can often participate in activities that they value and find interesting. Not surprisingly, satisfaction of the three innate psychological needs has been positively linked to vigor and dedication, two key dimensions of engagement (Vansteenkiste et al., 2007). Need satisfaction is a requisite for the internalization and integration of external standards as well as for intrinsic motivation. Thus, *work engagement will be positively associated with autonomous motivation, i.e., identified regulation and intrinsic motivation* (Hypothesis 2).

Finally, employees experiencing burnout have developed a mental distance from their work. They evaluate their performance negatively (Maslach, 1998), which may explain the low levels of performance-based and general self-esteem that are associated with burnout (Brookings, Bolton, Brown, & McEvoy, 1985; Dahlin, Joneborg, & Runeson, 2007). In addition, like workaholism, burnout is positively associated with socially prescribed perfectionism (Taris et al., 2010). Therefore, it is likely that employees with high scores on burnout work in order to obtain others' approval and to avoid additional negative effects on their self-evaluation. Moreover, employees experiencing burnout are cynical about their job, and do no longer enjoy and derive satisfaction from their work (Maslach, 1998), suggesting that they are primarily motivated by controlled extrinsic motivation. Recent findings support these assumptions by showing that need satisfaction is negatively related to emotional exhaustion (Vansteenkiste et al., 2007). Unsatisfied needs obstruct the internalization and integration of external standards as well as intrinsic motivation. Hence, *burnout will be positively associated with controlled extrinsic motivation, i.e., external regulation and introjected regulation* (Hypothesis 3).

Since work climate predicts need satisfaction and motivation (Gagné & Deci, 2005) as well as job-related well-being (Schaufeli, Bakker, & Van Rhenen, 2009), the present study controls for work characteristics. Following the job demands-resources (JD-R) model, we distinguish between job demands and job resources (Bakker & Demerouti, 2008). Job demands are those aspects of work that require sustained physical and/or psychological effort or skills, and that are associated with physiological and/or psychological costs. On the other hand, job resources are work aspects that are functional in achieving work goals, stimulate personal growth and development, and reduce job demands and the associated physiological and psychological costs. Based on previous research (e.g., Bakker & Demerouti, 2007), three job demands (work overload, mental demands, and emotional demands) and three job resources (job control, social support from

colleagues, and social support from supervisors) are examined in the present study. Figure 6.1 presents a heuristic research model that summarizes the study hypotheses. In the analyses this model will be extended with the effects of job demands and job resources on all three measures of well-being.

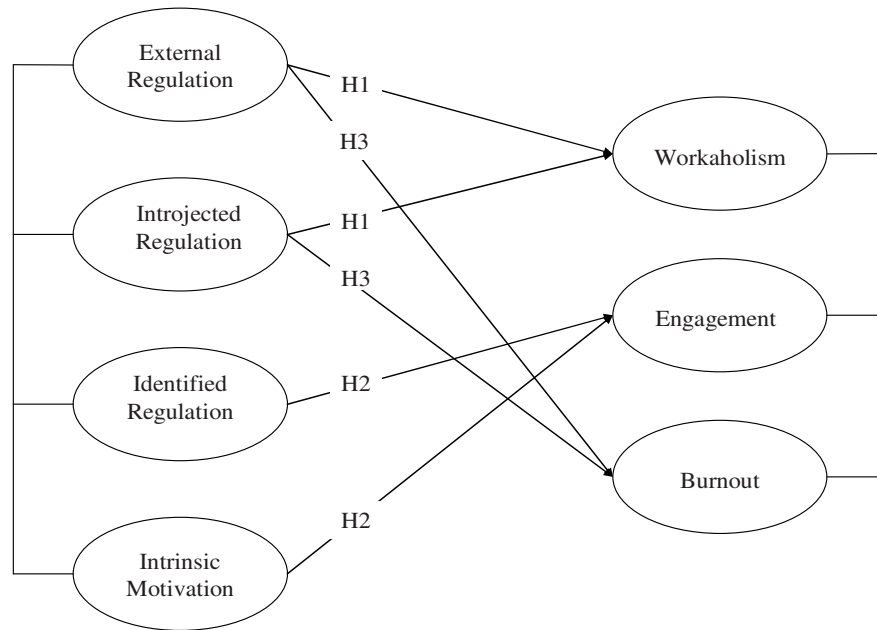


Figure 6.1. Heuristic model for the relations among various SDT-based types of motivation on the one hand, and workaholism, work engagement, and burnout on the other.

6.2 Method

6.2.1 Sample and procedure

Thousand questionnaires were randomly dispatched by a hospital administrator in four different types of hospitals (a general hospital, a maternity hospital, a traditional Chinese medicine hospital, and a psychiatric hospital) in an urban area in the mainland of China. The survey was accompanied by a letter explaining the nature and general aim of the study. After the data collection phase had expired, 760 usable questionnaires had been returned (76% response rate). The study sample included 544 nurses (538 females and 6 males, with a mean age of 29.23 years, $SD = 7.48$) and 216 physicians (132 females and 84 males, with a mean age of 34.78 years, $SD = 9.33$). The nurse sample worked on average 46.39 hours per week ($SD = 7.40$) and the physician sample worked on average 44.52 hours per week ($SD = 8.07$). Table 6.1 presents additional information on the sample.

Table 6.1. Number of questionnaires dispatched, return rate (%), and number of nurses and physicians that participated per hospital

Type of hospital	Questionnaires dispatched	Return rate	Nurses	Physicians
General Hospital	500	72.4	320	41
Maternity Hospital	200	93	120	66
Traditional Chinese Medicine Hospital	230	68.7	72	86
Psychiatric Hospital	70	78.6	32	23
Total	1000	76	544	216

6.2.2 Instruments

All study variables were measured with established scales that had been translated into Chinese by the second author and two native English teachers. Semantic vagueness was checked by two native Chinese teachers. Reliability analysis revealed that the internal consistencies (Cronbach's alphas) of all scales were acceptable ($\alpha > .70$) to good ($\alpha > .80$).

Workaholism was measured with the Dutch Work Addiction Scale (DUWAS; Schaufeli, Shimazu et al., 2009). The DUWAS contains two subscales: Working Excessively and Working Compulsively. The first subscale is based on the Compulsive Tendencies scale of Robinson's (1999) Work Addiction Risk Test, whereas the second scale is based on the Drive scale of Spence and Robbins' (1992) Workaholism Battery. *Working excessively* was measured with 9 items ($\alpha = .78$), including "I seem to be in a hurry and racing against the clock". *Working compulsively* was measured with 7 items ($\alpha = .77$), including "I feel that there's something inside me that drives me to work hard". Items were scored on a 4-point frequency scale, ranging from 1 ("almost never") to 4 ("almost always").

Work engagement was measured with the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006). The UWES consists of three subscales: Vigor, Dedication, and Absorption. *Vigor* was measured with 3 items ($\alpha = .82$), including "At my work, I feel strong and vigorous". *Dedication* was measured with 3 items ($\alpha = .85$), including "I am enthusiastic about my job". Finally, *absorption* was measured with 3 items ($\alpha = .84$) as well, including "I am immersed in my work". All items employed a 7-point frequency scale, ranging from 0 ("never") to 6 ("always").

Burnout was measured with an adapted version of the Maslach Burnout Inventory-General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). Two subscales were used: Emotional Exhaustion and Cynicism. *Emotional exhaustion* was measured with 5 items ($\alpha = .87$), including "I feel burned out from my work". *Cynicism* was also measured with 5 items ($\alpha = .88$), including "I doubt the significance of my work". All items were scored on a 7-point frequency scale, ranging from 0 ("never") to 6 ("always").

Motivation was measured with a 17-item scale that was based on the scales of Ryan and Connell (1989), and of Vansteenkiste, Sierens, Soenens, Luyckx, and Lens (2009). This scale contains four subscales: External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Motivation. *External regulation* was measured with 4 items ($\alpha = .88$), including "I work to get the other's approval (e.g., supervisor, colleagues, family, clients)". *Introjected regulation* was measured using 3 items ($\alpha = .93$), including "I work because otherwise I will feel bad about myself". Five items tapped *identified regulation* ($\alpha = .86$), including "I work because

what I do in this job has a lot of personal meaning to me". Lastly, 5 items tapped *Intrinsic motivation* ($\alpha = .94$), including "I work because the work I do is a lot of fun". All items were scored on a scale that ranged from 1 ("totally disagree") to 5 ("totally agree").

Job demands were measured using items taken from three subscales of Van Veldhoven and Meijman's (1994) Dutch Questionnaire on the Experience and Evaluation of Work (QEEW). *Work overload* was measured with 5 items ($\alpha = .82$), including "Do you have too much work to do?" *Mental demands* were also measured with 5 items ($\alpha = .82$), including "Does your work require much concentration?" *Emotional demands* were measured with 3 items ($\alpha = .78$), including "Does your work put you in emotionally upsetting situations?" Items were scored on a 5-point frequency scale, ranging from 1 ("never") to 5 ("always").

Finally, *job resources* were measured using items from three subscales developed by Van Veldhoven and Meijman (1994). *Job control* was measured using 3 items ($\alpha = .75$), including "Do you have freedom in carrying out your work activities?" *Social support from colleagues* was measured with 3 items ($\alpha = .82$), including "Can you count on your colleagues when you come across difficulties in your work?" *Social support from supervisors* was measured with 3 items as well ($\alpha = .79$), including "If necessary, can you ask your direct manager for help?" All items were scored on a scale that ranged from 1 ("never") to 5 ("always").

6.2.3 Statistical analyses

The research model presented in Figure 6.1 (Model 1, testing Hypotheses 1-3) was tested using Structural Equation Modeling methods as implemented in AMOS 16.0 (Arbuckle, 2007). Maximum likelihood estimation methods were used and the goodness-of-fit of the model was evaluated using the χ^2 test statistic, the Goodness of Fit Index (GFI), the Normed Fit Index (NFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Values higher than .90 (for GFI, NFI and TLI), or .08 and lower (for RMSEA) signify acceptable model fit (Byrne, 2009).

Preliminary analyses. Preliminary confirmatory factor analyses were conducted on the pooled nurse and physician samples to test the hypothesized four-factor structure for the motivation scale. Results showed that a one-factor model, in which all items loaded on a single latent factor, did not fit the data well, $\chi^2 = 5,084.34$, GFI = .50, NFI = .47, TLI = .40, RMSEA = .23. Similarly, a two-factor model in which the items of external regulation and introjected regulation loaded on one latent factor (controlled motivation) and the items of identified regulation and intrinsic motivation loaded on a second latent factor (autonomous motivation) was rejected, $\chi^2 = 3,634.11$, GFI = .59, NFI = .62, TLI = .57, RMSEA = .20. In contrast, a

four-factor model with items loading on the expected dimensions fitted the data well, $\chi^2 = 359.36$, GFI = .97, NFI = .96, TLI = .97, RMSEA = .05, and significantly better than the one- and two-factor models, $\Delta\chi^2(N = 760, df = 6) = 4,724.98, p < .001$, and $\Delta\chi^2(N = 760, df = 5) = 3,274.75, p < .001$, respectively. Thus, these findings confirm the expectation that the motivation scale tapped four distinct regulatory styles.

Main analyses. Three separate analyses tested whether the four dimensions of motivation were differentially related to workaholism, work engagement, and burnout, controlling for job demands and job resources. In Model 1a the effects of the four dimensions of motivational regulation on workaholism were constrained to be equal (Hypothesis 1). In Model 1b the effects of the four dimensions of motivation on work engagement were constrained to be equal (Hypothesis 2). Lastly, in Model 1c the effects of the four dimensions of motivation on burnout were constrained to be equal (Hypothesis 3). Comparison of the fit of Model 1 to that of Models 1a-1c would reveal whether the four dimensions of motivation are differentially associated with workaholism, work engagement, and burnout. For example, if the fit of Model 1a was significantly worse than that of Model 1, the four dimensions of motivation would relate differentially to workaholism. In these analyses the nurse and physician samples were pooled.

In the next step the invariance of the model across both samples was examined. Specifically, a two-group analysis tested whether Model 2, in which all paths were unconstrained, differed from Model 2a, in which all paths were constrained to be equal for the nurse and physician samples. A non-significant difference between the respective χ^2 test statistics would indicate that Model 2 holds for the nurse and physician samples, while a significant difference would imply that Model 2 does not hold for both samples. If Model 2 would differ for the nurse and physician samples, adaptations will be made so that a revised model emerges (Model 2b) that will be tested subsequently, et cetera. Finally, non-significant paths will be removed, resulting in a final model (Model 3).

6.3 Results

6.3.1 Testing the research model

Table 6.2 presents descriptive information for the study variables. In order to test the three hypotheses simultaneously, while controlling for the effects of job demands and job resources, the research model (Model 1, Figure 6.1) was fitted to the data². Table 6.3 shows that the goodness-of-fit indices of Model 1 were

² Erratum: The model that was fitted to the data controlled for the effects of job demands and job resources, and contained paths between all four dimensions of motivation and all three types of job-related well-being.

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acceptable, meaning that it provided an acceptable starting point for further analysis. Constraining the effects of motivational regulation on workaholism in Model 1a, work engagement in Model 1b, and burnout in Model 1c resulted in significant deteriorations of the fit relative to Model 1, $\Delta\chi^2(N = 760, df = 3) = 21.1, p < .001$, $\Delta\chi^2(N = 760, df = 3) = 109.5, p < .001$, and $\Delta\chi^2(N = 760, df = 3) = 48, p < .001$, respectively. Thus, different types of motivational regulation related differentially to each of the three types of job-related well-being.

Next, a two-group analysis tested whether the research model held up for the nurse and physician samples³. Table 6.3 shows that the unconstrained model (Model 2) fitted the data significantly better than the constrained model (Model 2a), $\Delta\chi^2(N = 760, df = 44) = 78.2, p < .01$, indicating that the parameters of Model 2 differed across samples. Further inspection of Model 2a revealed that the nurse and physician samples differed regarding the relation between introjected regulation and burnout. For the physicians we observed a significant, positive association between introjected regulation and burnout, but not for the nurses. In Model 2b all paths were constrained to be equal for both samples, with the exception of the path connecting introjected regulation and burnout. The χ^2 test statistic differed significantly for Model 2 and Model 2b, $\Delta\chi^2(N = 760, df = 43) = 61.2, p < .05$, indicating that additional adaptations had to be made. Closer inspection showed that the nurse and physician samples differed regarding the relation between intrinsic motivation and workaholism as well: for the nurses we observed a significant, negative association between intrinsic motivation and workaholism, but not for the physicians. In Model 2c the path connecting intrinsic motivation and workaholism, and the path connecting introjected regulation and burnout were estimated. The fit of Model 2 and Model 2c did not differ significantly, $\Delta\chi^2(N = 760, df = 42) = 55.1, p > .05$, indicating that Model 2c applies to both samples. Finally, all non-significant paths were removed, resulting in Model 3 that also met the criteria for acceptable fit. Figure 6.2 presents the effects of Model 3 graphically.

³ Controlling for background variables (age and gender) did not affect the path coefficients of the models substantially.

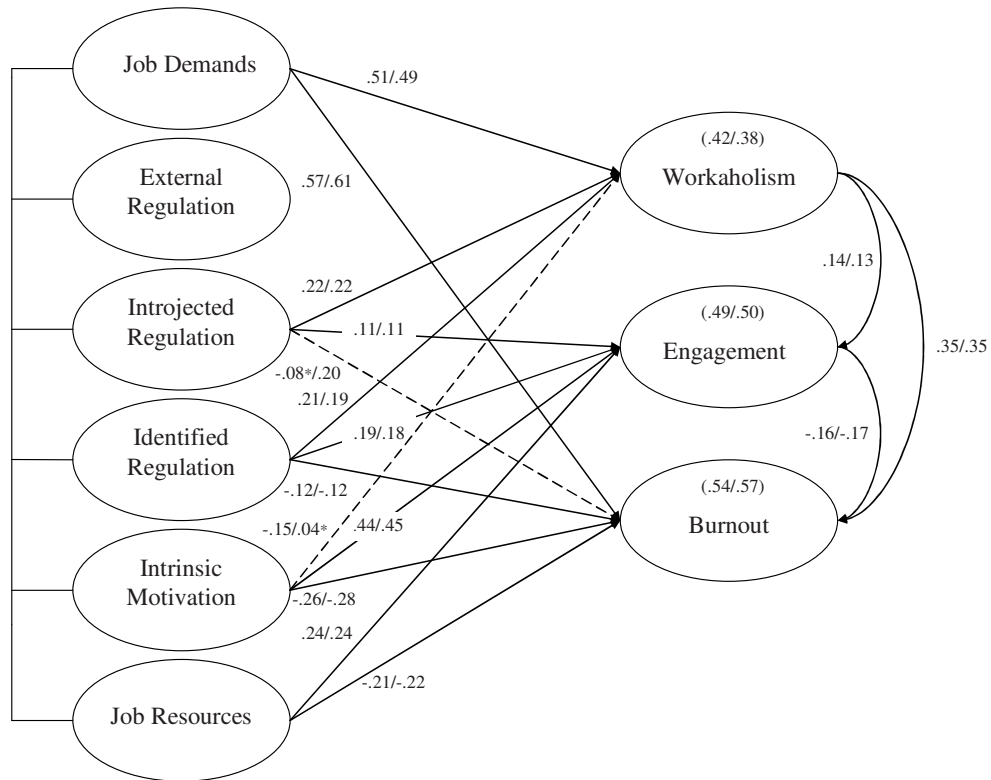


Figure 6.2. Model 3 with standardized path coefficients and squared multiple correlations for the nurse/physician sample. All paths are significant at $p < .05$, except *.

Table 6.2. Means (*M*), standard deviations (*SD*), internal consistencies (*α*), and correlations between the variables (*N* = 760)

Variable	<i>M</i>	<i>SD</i>	<i>α</i>	1	2	3	4	5	6	7	8	9	10	11
1 External regulation	2.93	.85	.88	–										
2 Introjected regulation	3.25	.90	.93	.16**	–									
3 Identified regulation	3.60	.68	.86	.10**	.47**	–								
4 Intrinsic motivation	2.73	.87	.94	-.02	.36**	.45**	–							
5 Workaholism	2.77	.38	.85	.17**	.28**	.24**	-.04	–						
6 Working excessively	2.69	.42	.78	.15**	.23**	.15**	-.04	.91**	–					
7 Working compulsively	2.87	.44	.77	.16**	.28**	.29**	-.03	.86**	.56**	–				
8 Work engagement	2.62	1.30	.93	-.02	.37**	.46**	.58**	.14**	.11**	.15**	–			
9 Vigor	2.70	1.39	.82	-.04	.32**	.40**	.48**	.15**	.11**	.15**	.92**	–		
10 Dedication	2.85	1.38	.85	-.04	.36**	.49**	.61**	.09*	.06	.12**	.93**	.82**	–	
11 Absorption	2.33	1.47	.84	.01	.36**	.38**	.52**	.16**	.12**	.16**	.91**	.74**	.77**	–
12 Burnout	2.66	1.30	.92	.12**	-.15**	-.33**	-.48**	.32**	.36**	.20**	-.40**	-.34**	-.45**	-.33**
13 Exhaustion	3.10	1.37	.87	.14**	-.09*	-.22**	-.45**	.40**	.43**	.26**	-.32**	-.27**	-.36**	-.27**
14 Cynicism	2.21	1.39	.88	.09*	-.20**	-.39**	-.45**	.21**	.26**	.11**	-.44**	-.37**	-.49**	-.35**
15 Job resources	2.64	.68	.82	-.02	.12**	.23**	.23**	.04	.05	.02	.35**	.32**	.34**	.31**
16 Job control	2.30	.94	.75	-.01	.05	.14**	.18**	-.06	-.04	-.08*	.24**	.21**	.23**	.22**
17 Support supervisors	2.77	.91	.79	-.01	.11**	.18**	.17**	.07	.08*	.04	.24**	.22**	.23**	.21**
18 Support colleagues	2.86	.83	.82	-.03	.12**	.21**	.17**	.09**	.07*	.09**	.33**	.32**	.32**	.27**
19 Job demands	3.58	.72	.89	.13**	.07	-.01	-.20**	.40**	.44**	.24**	-.06	-.03	-.10**	-.04
20 Work overload	3.29	.87	.82	.13**	.02	-.04	-.20**	.38**	.43**	.21**	-.10**	-.06	-.13**	-.07*
21 Emotional demands	3.12	.98	.78	.13**	.05	-.07	-.22**	.30**	.32**	.19**	-.10**	-.07*	-.13**	-.06
22 Mental demands	4.15	.78	.82	.07	.10**	.07*	-.08*	.32**	.34**	.20**	.03	.05	.00	.04

Table 6.2 (continued). Means (*M*), standard deviations (*SD*), internal consistencies (α), and correlations between the variables (*N* = 760)

Variable	12	13	14	15	16	17	18	19	20	21	22
12 Burnout	—										
13 Exhaustion	.94**	—									
14 Cynicism	.94**	.78**	—								
15 Job resources	-.21**	-.18**	-.23**	—							
16 Job control	-.19**	-.17**	-.18**	.70**	—						
17 Support supervisors	-.14**	-.12**	-.15**	.81**	.29**	—					
18 Support colleagues	-.16**	-.11**	-.19**	.78**	.27**	.58**	—				
19 Job demands	.48**	.52**	.38**	.11**	.00	.11**	.15**	—			
20 Work overload	.45**	.48**	.36**	.07	-.03	.10**	.09*	.87**	—		
21 Emotional demands	.43**	.45**	.37**	.06	-.01	.04	.11**	.75**	.50**	—	
22 Mental demands	.31**	.37**	.22**	.15**	.04	.13**	.19**	.85**	.60**	.50**	—

Note. * $p < .05$, ** $p < 0.01$.

Table 6.3. Goodness-of-fit indices ($N = 760$)

<i>Model</i>	χ^2	<i>df</i>	GFI	RMSEA	NFI	TLI
Model 1 (cf. Figure 6.1)	388.1	87	.95	.07	.93	.92
Model 1a (paths from motivation regulation to workaholism constrained to be equal)	409.2*	90	.94	.07	.93	.91
Model 1b (paths from motivation regulation to engagement constrained to be equal)	497.6*	90	.93	.08	.91	.89
Model 1c (paths from motivation regulation to burnout constrained to be equal)	436.1*	90	.94	.07	.92	.91
Model 2 (all paths unconstrained)	512.3	174	.93	.05	.91	.90
Model 2a (paths constrained to be equal for both groups)	590.5**	218	.92	.05	.90	.92
Model 2b (paths constrained to be equal for both groups with the exception of the path between introjected regulation and burnout)	573.5**	217	.92	.05	.90	.92
Model 2c (paths constrained to be equal for both groups with the exception of the path between introjected regulation and burnout and the path between intrinsic motivation and workaholism)	567.4	216	.93	.05	.91	.92
Model 3 (Model 2c: significant paths only)	576.4	221	.93	.05	.91	.91

Note: * This model fits the data significantly worse than Model 1; ** This model fits the data significantly worse than Model 2.

6.3.2 Testing the hypotheses

Workaholism and motivational regulation. Hypothesis 1 stated that workaholism would be positively associated with controlled extrinsic motivation (i.e., external regulation and introjected regulation). The findings displayed in Figure 6.2 partially confirmed this hypothesis. Workaholism was indeed positively related with introjected regulation, but not with external regulation. In addition, workaholism was positively linked to identified regulation for both the nurse and physician samples, and negatively linked to intrinsic regulation for the nurse sample, but not for the physician sample.

Work engagement and motivational regulation. Hypothesis 2 stated that work engagement would be positively associated with autonomous motivation, i.e., identified regulation and intrinsic motivation. Figure 6.2 shows that the obtained results confirmed this hypothesis. Work engagement was indeed positively related with identified regulation and intrinsic motivation. In addition, work engagement was positively linked to introjected regulation as well. All in all, the positive associations between work engagement and the different types of motivational regulation were stronger the more autonomous the motivation.

Burnout and motivational regulation. According to Hypothesis 3, burnout would be positively associated with controlled extrinsic motivation, i.e., external regulation and introjected regulation. As expected, burnout was positively related with introjected regulation for the physician sample, but not for the nurse sample (Hypothesis 3 partly supported). Moreover, burnout was negatively linked to autonomous motivation, i.e., identified regulation and intrinsic motivation.

Finally, note that we controlled for job demands and job resources that are known to influence both motivational regulation (Gagné & Deci, 2005) and job-related well-being (Schaufeli, Bakker et al., 2009). Therefore, the associations among the various forms of motivational regulation and the three types of job-related well-being are independent from the perceived job demands and job resources.

6.4 Discussion

The present study examined the motivational correlates of workaholism, work engagement, and burnout. Whereas previous research identified a wide range of consequences of job-related well-being, their motivational antecedents have not been studied extensively. The present study revealed that Deci and Ryan's (2000) Self-Determination Theory can fruitfully be used to study the motivational correlates of workaholism, work engagement, and burnout. Four interesting findings result from the present study.

First, workaholism is positively associated with extrinsic motivation, indicating that workaholic employees engage in their work activities for its instrumental value. Specifically, workaholism is positively associated with introjected regulation, meaning that workaholic employees have adopted external standards of self-worth and social approval without fully identifying with these standards. They buttress themselves with feelings of self-worth and self-esteem if they manage to meet these adopted external standards, but they feel ashamed, guilty, and unworthy when they fail to meet these standards (Deci & Ryan, 2002). This is in line with the idea that workaholism develops in response to feelings of low self-worth and insecurity, and that workaholic employees are motivated by a high need to prove themselves (Mudrack, 2006). The present study does *not* support the idea that workaholic employees are motivated by external regulation, that is, external contingencies involving threats of punishments, or material or social rewards. This finding contradicts earlier suggestions that workaholic employees are encouraged by status, peer admiration, and supervisor approval (Spence & Robbins, 1992), and that they pursue work that is likely to result in pay raises, promotions, or other signs of recognition (Porter, 1996). Importantly, these findings confirm the assumption that workaholic employees experience an inner compulsion to work hard rather than external pressure. They work hard to avoid negative feelings, such as guilt and anxiety, or to attain ego enhancements, such as pride.

In addition, our findings revealed that workaholism is positively associated with identified regulation, indicating that some integration of adopted external standards has taken place and that the three innate psychological needs are at least to some extent fulfilled. Note that this finding contradicts recent findings that need satisfaction is negatively linked to working compulsively (Andreassen et al., 2010). Workaholic employees seem to value their work because they identify themselves with its instrumental value. Therefore, it is likely that workaholic employees experience some ownership of their behavior as well. This interesting finding may explain why they continue to work hard, despite the adverse consequences of doing so. Furthermore, workaholism is negatively associated with intrinsic motivation among nurses only, suggesting that workaholic nurses do not experience their work as interesting, enjoyable, or satisfying. This agrees with the observation that workaholism is negatively related with job satisfaction (Burke & MacDermid, 1999). However, in the present study there was no relationship between workaholism and intrinsic motivation among physicians. It is possible that physicians are primarily motivated by their patients' requests for help and by the fact that their actions are often a matter of life or death. In general, these findings strengthen the interpretation that workaholic employees work so hard because it leads to a separable outcome (extrinsic motivation), and not because they like their job

(intrinsic motivation).

Second, work engagement is positively associated with intrinsic motivation, indicating that engaged employees experience their work as interesting, enjoyable, and satisfying. These employees engage in their work for its own sake and act with a sense of volition. This may explain why engaged employees experience high levels of energy and mental resilience while working, are willing to invest effort in their work, are strongly involved in their work, and have difficulty detaching from work (Schaufeli et al., 2002). This finding is in line with previous findings that showed that work engagement relates positively to job satisfaction and other positive outcomes, such as performance (Schaufeli & Salanova, 2007a).

Third, work engagement is positively associated with extrinsic motivation, indicating that engaged employees engage in their work activities for its instrumental value as well. Specifically, work engagement is positively associated with introjected regulation and identified regulation. Like workaholic employees, engaged employees have apparently adopted external standards of self-worth and social approval without fully identifying with them (introjected regulation). Meeting these standards results in feelings of high self-worth and self-esteem, whereas failing to meet these standards leads to self-criticism and negative feelings (Deci & Ryan, 2002). Therefore, engaged employees are likely to experience at least some internal pressure to work as well. In addition, our findings suggest that engaged employees identify themselves with the underlying value of their work (identified regulation). Since many jobs consist not only of interesting and enjoyable activities, but also include mundane, repetitive, and unpleasant tasks, it makes sense that engaged employees are to some degree extrinsically motivated as well. The positive associations between work engagement and the different types of motivational regulation support the observation that engaged employees' innate psychological needs are for the greater part fulfilled (Vansteenkiste et al., 2007), because need satisfaction is a requisite for the internalization and integration of external standards as well as for intrinsic motivation. Although the motivational make-up of work engagement is complex, engaged employees are mainly driven by autonomous motivation. They experience ownership of their behavior, meaning that they feel free to engage in activities that they personally value and that they enjoy for its own sake.

Fourth, burnout is negatively associated with intrinsic motivation and autonomous extrinsic motivation, indicating that burned-out employees do not experience their work activities as interesting, enjoyable, or satisfying, and do not identify with their work activities or their instrumental value. Since burnout refers to a state of exhaustion in which one is cynical about the value of one's own contribution at work (Maslach, Jackson, & Leiter, 1996), these findings are not

surprising. Furthermore, the present study shows that burnout is positively associated with introjected regulation for the physician group only. This suggests that, in contrast to nurses, burned-out physicians have adopted external standards of self-worth and social approval without fully identifying with them. One explanation for this finding is that physicians have a strong and internalized ethic of responsibility (Wu, Zhu, Li, Wang, & Wang, 2008) that is, for instance, institutionalized in the Hippocratic Oath. As a result physicians may feel that they *must* work (i.e., work is a duty), whereas not working may induce negative feelings about oneself. This strong internalized work ethic may encourage the development of burnout, which could explain why physicians are amongst the occupational groups with the highest levels of burnout (Schaufeli, 2007). These findings support earlier findings that need satisfaction is negatively related to emotional exhaustion (Vansteenkiste et al., 2007). Unsatisfied needs obstruct the internalization and integration of external standards as well as intrinsic motivation. Whereas burned-out physicians are primarily driven by introjected regulation, burned-out nurses are not driven by any of the motivational regulations in particular. These findings contradict the assumption that burned-out employees' behavior is motivated by both external and introjected regulation. Rather, these findings suggest that nurses experiencing burnout are *a-motivated*. Amotivation manifests itself by acting without intent or refraining from any acting. It is the consequence of not valuing an activity, not feeling competent to perform it, or not believing that it will lead to a desired outcome (Ryan & Deci, 2000a). It seems plausible that burned-out employees are amotivated because they distance themselves from their work to prevent further depletion of mental resources.

6.4.1 Study limitations

One limitation of the present study is that all constructs were measured using self-reports, which may have inflated the associations among the study variables due to common method variance or the wish to answer consistently. However, Spector (2006) argued convincingly that self-reports do not automatically and inevitably inflate associations between variables, and do not necessarily lead to significant results, even in large samples. Moreover, the associations reported in Table 6.2 show considerable variation, which goes against the idea that these are due to a common underlying process that affects all these correlations uniformly.

Second, data were collected among a relatively homogeneous sample of Chinese medical professionals. Although these professionals worked at four different hospitals (providing a broad impression of the working circumstances across various types of hospitals), all of these were located in the same medium-sized city in China. Therefore, it cannot be claimed that the sample is representative

for the full medical sector in China. In addition, at present it is too early to generalize the findings to other occupations or cultures. On the other hand, virtually all studies using SDT as theoretical framework have been carried out in Western countries. In this sense, the fact that this study was conducted in China is also a strength, as it underlines the cross-cultural validity of SDT. Moreover, the findings presented here are largely in line with our expectations, suggesting that the findings of the present study could well apply to other occupational groups and to less collectivistic cultures.

Third, the present study used a cross-sectional design. Consequently, it cannot be concluded that specific types of motivational regulation lead causally to specific types of employee well-being. In addition, although there are indications that workaholism, work engagement, and burnout are causally linked, the cross-sectional design did not allow us to examine the causal relations among these concepts. For instance, workaholism may act as a root cause of burnout, since workaholic employees may deplete their mental resources (Porter, 2001). Furthermore, Schaufeli et al. (2001) showed that burned-out employees may initially have been engaged and vice versa. Solid evidence for such causal relations is still lacking. Therefore, the present study treated workaholism, work engagement, and burnout as correlates. Because alternative (reversed or reciprocal) causal relations between motivational regulation and job-related well-being cannot be excluded, and possible causal relations among the three different kinds of job-related well-being are an interesting issue, it would be interesting to replicate the present study longitudinally.

6.4.2 Theoretical and practical implications

The present study extends previous research in at least three ways. First, it is the first to uncover the motivational correlates of workaholism, work engagement, and burnout using SDT, and to show that these correlates differ substantially and meaningfully. However, the motivational correlates of these three kinds of job-related well-being are more complex than was initially assumed. Although workaholic employees are basically extrinsically motivated, engaged employees are both extrinsically and intrinsically motivated. Hence, workaholism and work engagement overlap partly in terms of their motivational regulation. This is plausible: work consists of interesting and enjoyable activities as well as mundane and unpleasant tasks. This finding should therefore not be interpreted as evidence for a conceptual overlap of these concepts: even if two phenomena (e.g., lung cancer and cardiac complaints) share the same antecedent (smoking), it does not follow that they are conceptually similar. Moreover, the correlations between workaholism and work engagement were small, r 's were .14 for nurses and .13 for physicians,

indicating that these concepts share less than 2% of their variance. Based on the present study, a prototypical distinction can be made regarding the motivation of workaholic and engaged employees: workaholic employees are *mainly* extrinsically motivated and engage in jobs activities for its instrumental value, while engaged employees are *mainly* intrinsically motivated and experience their work as inherently enjoyable and satisfying.

Second, the present study provides indirect evidence for SDT's assumption that human beings are active, growth-oriented organisms and that fostering this tendency leads to optimal functioning and well-being, whereas thwarting it leads to adverse outcomes. The present study showed that work engagement varied positively with the degree to which one's work behavior is autonomously motivated and, thus, with the degree to which one's innate growth tendency is realized. Conversely, being internally pressured to work is associated with higher levels of workaholism and burnout.

Third, the present study provides directions for practical use. Since work engagement is linked to beneficial outcomes at individual and organizational level (Schaufeli & Salanova, 2007a; Schaufeli et al., 2008), companies are advised to stimulate this type of job-related well-being. In contrast, because workaholism and burnout are mainly linked to adverse outcomes (Burke, 2000; Maslach et al., 2001; Schaufeli, Bakker, Van der Heijden et al., 2009), companies should avoid these psychological states in their employees. The present study suggests that fostering autonomous motivation may simultaneously lead to an increase in work engagement and a decrease in workaholism and burnout. One way to achieve this is by making jobs more attractive and challenging to employees, and adopting an autonomy-supportive management style that includes being emphatic, offering choices, and providing meaningful rationales for doing particular tasks (Gagné & Deci, 2005).

6.4.3 Concluding comment

The present study examined the motivational correlates of workaholism, work engagement, and burnout. Workaholic employees work hard because they are mainly driven or pushed by a strong need to prove themselves and because they personally value its outcomes, while engaged employees work hard because they are mainly pulled by their inherently enjoyable and satisfying work. Finally, employees experiencing burnout are neither pushed nor pulled to work; rather, they distance themselves from their work. Although the associations among motivational regulation and job-related well-being are more complex than was anticipated, the present study demonstrated that workaholism, work engagement, and burnout are each associated with a prototypical underlying motivational regulation.

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Chapter 6

Chapter 7

**The influence of workaholism and work engagement:
A longitudinal study on need satisfaction, motivation,
and heavy work investment**

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7.1 Introduction

Today, a large body of research exists on workaholism and work engagement. The conceptualization as well as the possible antecedents and consequences of these two different kinds of heavy work investment have been examined extensively (among others, Schaufeli, Taris, & Van Rhenen, 2008). For instance, building on Deci and Ryan's (2000) Self-Determination Theory (SDT), Van Beek, Hu, Schaufeli, Taris, and Schreurs (2012) showed in a cross-sectional study that (a) workaholic employees work hard in order to preserve and enhance feelings of self-worth and self-esteem, as well as because they personally value the associated outcomes, and (b) engaged employees work hard because they tend to experience their work activities as interesting, enjoyable, and satisfying. Building on these and other findings, the present study is among the first to examine longitudinally how need satisfaction (a central concept in SDT; Deci & Ryan, 2000) affects work motivation and how work motivation affects workaholism and work engagement across time. Its principal aim is to uncover the motivational processes that underlie the two different kinds of heavy work investment. More insight in these processes is needed to develop effective strategies for enhancing work engagement and reducing workaholism.

7.1.1 Two different kinds of heavy work investment

Workaholism refers to "the tendency to work excessively hard and being obsessed with work, which manifests itself in working compulsively" (Schaufeli, Shimazu, & Taris, 2009, p. 322), meaning that workaholic employees are chronically aroused and preoccupied with work. Consequently, they have little time for their spouses, family, friends or leisure activities (Bonebright, Clay, & Ankenmann, 2000) and do not experience the enjoyment and fulfilment accompanying such relationships or activities (Lyubomirsky & Nolen-Hoeksema, 1993). Frequent and/or continuous exposure to work without sufficient possibilities to recover may deplete workaholics' energy resources as time goes by, leading to burn-out (Van Beek, Taris, & Schaufeli, 2011; Van Wijhe, Peeters, & Schaufeli, in press). Since workaholism is also linked to other adverse outcomes, such as job dissatisfaction (Burke & MacDermid, 1999), high turnover intention (Van Beek, Taris, Schaufeli, & Brenninkmeijer, 2014), life dissatisfaction (Bonebright et al., 2000), and health complaints (Burke, 2000), it can be considered a "bad" type of working hard (Schaufeli, Taris, & Bakker, 2006).

Work engagement is a positive, fulfilling, work-related state of mind that is characterized by vigor (high levels of energy and mental resilience), dedication (strong involvement and enthusiasm), and absorption (difficulties with detaching from work; Schaufeli, Salanova, González-Romá, & Bakker, 2002). Engaged employees work hard and derive great pleasure from it: they experience their work

as interesting, enjoyable, and satisfying (Van Beek et al., 2011). Despite their heavy work investment, engaged employees do not wrestle with work-home interference. They engage in social activities, hobbies, and volunteer work (Schaufeli et al., 2001), resulting in sufficient possibilities for recovery (Van Beek et al., 2011). Furthermore, engaged employees perform well at work (Demerouti & Cropanzano, 2010). Given the dimensions of work engagement, it comes as no surprise that previous research has linked work engagement to various other beneficial outcomes, such as job satisfaction and organizational commitment (Schaufeli et al., 2008), low turnover intention (Schaufeli & Bakker, 2004), life satisfaction, and good mental and physical health (Schaufeli & Salanova, 2007; Seppälä et al., 2012). Hence, work engagement can be considered a “good” type of working hard (Schaufeli, Taris et al., 2006).

Since workaholism and work engagement are associated with adverse and beneficial outcomes respectively, it is desirable to develop effective strategies for reducing workaholism and enhancing work engagement. Therefore, it is important to advance our knowledge of the *why* of workaholic and engaged employees’ behavior, that is, their motivation.

7.1.2 Self-Determination Theory

Self-Determination Theory (SDT; Deci & Ryan, 2000) concerns the antecedents of human motivation. It assumes that individuals are active, growth-oriented organisms. This growth-oriented tendency is fostered by fulfilment of three innate psychological needs: the needs for autonomy, competence, and relatedness. Applied to the work context, need for autonomy refers to the need for experiencing freedom of choice and freedom to initiate behavior at work (Deci & Ryan, 2000). Need for competence refers to the need for completing challenging work tasks successfully and achieving desired outcomes (White, 1959). Lastly, need for relatedness refers to the need for experiencing positive relationships with colleagues and mutual respect (Baumeister & Leary, 1995). Satisfaction of these three needs tends to co-occur in a natural environment (Sheldon & Niemiec, 2006). However, now and then, individuals may experience an imbalance in the extent to which the three needs are satisfied. For instance, a new business owner must spend much time on work to be successful and may satisfy his/her needs for autonomy and competence. However, because little time is left for socializing, the need for relatedness may not be satisfied sufficiently.

SDT posits that motivation, optimal functioning, and psychological well-being are affected by the extent to which environmental conditions allow satisfaction of the three needs and individuals can find or create the conditions necessary to satisfy the three needs (Deci & Ryan, 2000). When fulfilment of these needs is frustrated, individuals may search for autonomy, may work more to feel

competent, or may search for company. However, fulfilled needs allow individuals to do what they find important, interesting, and enjoyable, that is, to flourish. In other words, the extent to which the three needs are satisfied explains how individuals orient themselves towards their social environment or what motivates them.

Furthermore, SDT distinguishes between intrinsic and extrinsic motivation (Deci & Ryan, 2000). Since individuals are active and growth-oriented, intrinsic motivation refers to performing an activity because it is experienced as inherently enjoyable, interesting, and challenging. Intrinsically motivated behaviors are prototypical for self-determined behaviors, meaning that they are conducted with a full sense of volition and choice. To foster intrinsic motivation, satisfaction of the needs for autonomy and competence is required. Satisfaction of the need for relatedness is less important: many intrinsically motivated behaviors, such as reading, are conducted in isolation.

Extrinsic motivation refers to performing an activity because of its instrumental value. In other words, extrinsically motivated individuals engage in an activity to obtain a desired outcome. SDT distinguishes between four different types of extrinsic motivation that vary in the extent to which they are self-determined: external regulation, introjected regulation, identified regulation, and integrated regulation (Ryan & Deci, 2000a; 2000b). These types of extrinsic motivation are influenced by the degree to which the three innate psychological needs are fulfilled (Deci & Ryan, 2000). The more these needs are satisfied, the more external social standards are transformed into personally endorsed values (internalization process), and the more self-determined the corresponding behaviors are.

Externally regulated behavior is motivated by external contingencies involving threats of punishments, or material and social rewards. For example, an employee whose behavior is regulated by external regulation does his work in order to avoid being laid off or to acquire a salary increase. This type of extrinsic motivation is experienced as fully controlling because individuals are regulated by contingent consequences that are administered by others and no internalization of external standards took place.

Introjectedly regulated behavior results from a partial internalization process in which individuals adopted external standards of self-worth and social approval, but without identifying with them. Individuals whose behavior is motivated by introjected regulation buttress themselves with feelings of self-worth and self-esteem when they manage to meet the adopted external standards, but they feel ashamed, guilty, and unworthy when they fail to do so (Koestner & Losier, 2002; Ryan & Deci, 2002). For example, an employee whose behavior is motivated by introjected regulation might do her work in order to obtain positive feelings like

pride or to avoid negative feelings such as unworthiness. The contingent consequences are administered by the individuals to themselves (Deci & Ryan, 2000). Since introjected regulations are only partially internalized, individuals may experience a conflict between the adopted external standards and what they personally prefer (Ryan & Deci, 2000a; 2000b). Therefore, introjected regulation is experienced as somewhat controlling.

Behavior is motivated by identified regulation when individuals identify themselves with the underlying value of a behavior. For example, an employee whose behavior is motivated by identified regulation might be aware of the importance of it for his chosen career path. By recognizing the underlying value of a specific behavior, this regulation is more internalized than introjected regulation. As a result, individuals experience some ownership of their behavior. Therefore, identified regulation is considered as somewhat autonomous.

Lastly, behavior that is motivated by integrated regulation results from a full internalization process. Individuals identify themselves with the reasons for a particular behavior and have integrated these identifications with other aspects of the self. An employee whose behavior is motivated by integrated regulation engages in her work because it is completely in line with her core values and with “how she is”. Like intrinsically motivated individuals, these individuals experience their behavior as authentic and, thus, as self-determined. However, their behavior is still conducted to obtain some outcome. Since integrated regulation shows a strong resemblance to intrinsic motivation (Ryan & Deci, 2000a) and because it is psychometrically difficult to distinguish items measuring this type of extrinsic motivation from items measuring other types of motivation (Gagné et al., 2010), integrated regulation is not examined in the current study.

7.1.3 The present study

Building on SDT, this study focuses on the intrapersonal processes underlying workaholism and work engagement. Using a two-wave design with a six-month time lag, three sets of hypotheses are simultaneously examined.

Need satisfaction and motivation. As noted previously, frustration of the needs for autonomy, competence, and relatedness undermines optimal motivation. Individuals with unfulfilled needs may search for autonomy, may work more to feel competent, or may search for company, and are motivated by external contingencies of punishment and reward (i.e., external regulation; Deci & Ryan, 2000; Deci & Vansteenkiste, 2004). Satisfaction of these needs facilitates the transformation of external social standards into personally endorsed values. Specifically, individuals (partially) adopt a particular value because they feel connected with others who advocate that value (satisfaction of the need for relatedness) and because they feel

competent with regard to behavior that represents that value (satisfaction of the need for competence), leading to introjected regulation. To foster fuller internalization of a value, and thus identified regulation, individuals must also experience a sense of willingness and choice when conducting a behavior (satisfaction of the need for autonomy). Furthermore, satisfaction of these needs, particularly the needs for autonomy and competence, facilitates intrinsically motivated behaviors. Therefore, it is expected that *need satisfaction has a negative effect on external regulation* (Hypothesis 1a), *and positive effects on introjected regulation* (Hypothesis 1b), *identified regulation* (Hypothesis 1c), *and intrinsic regulation* (Hypothesis 1d).

Motivation and workaholism. As regards motivation and heavy work investment, extrinsic motivation is positively associated with workaholism, meaning that workaholic employees work for its instrumental value (Van Beek et al., 2011, 2012). It has been suggested that workaholic employees have a negative self-image and lack self-confidence, leading to a high need to prove themselves (Mudrack, 2006). They seem to depend on their work to achieve a positive self-image (Robinson, 2007). Further, it has been suggested that disengagement from work causes distress and negative feelings, such as irritability, shame, and guilt (Killinger, 2006). Therefore, it is expected that workaholic employees are motivated by introjected regulation that is characterized by performing an activity to increase or preserve self-esteem and self-worth (Ryan, 1982). This could well explain why workaholic employees experience a strong and uncontrollable inner drive to work hard. Furthermore, workaholic employees find their work meaningful and important, indicating that they identify themselves with their work goals (Van Beek et al., 2012). Therefore, they are likely to experience some sense of willingness and choice (Deci & Ryan, 2000), and they will strongly persist in their behavior (Vansteenkiste, Simons, Sheldon, & Deci, 2004; Van den Broeck et al., 2011). Thus, it is expected that *introjected regulation and identified regulation have a positive effect on workaholism* (Hypothesis 2a and Hypothesis 2b, respectively).

In contrast, intrinsic motivation is negatively associated with workaholism (Van Beek et al., 2012). Instead of finding their work activities inherently interesting and enjoyable, workaholic employees score low on intrinsic motivation. Engaging in work activities in order to achieve outcomes that differ from the inherent satisfaction of doing it, undermines intrinsic motivation (Deci & Vansteenkiste, 2004). Therefore, it is expected that *intrinsic regulation has a negative effect on workaholism* (Hypothesis 2c).

Motivation and work engagement. Both extrinsic and intrinsic motivation are positively associated with work engagement (Van Beek et al., 2012). First and foremost, engaged employees work because they find their work activities

interesting, enjoyable, and satisfying. They perform their work activities for their own sake. Furthermore, engaged employees work because they value their work, suggesting that they identify themselves with their work goals. Since many jobs include interesting and enjoyable tasks as well as more mundane and unpleasant tasks, it is reasonable that engaged employees are to some degree extrinsically motivated. Prior studies have demonstrated that engaged employees believe in their capabilities to attain work goals and that good things will happen to them (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Individuals with such positive beliefs are likely to pursue self-concordant goals (Judge, Bono, Erez, & Locke, 2005). By pursuing work goals that fit their ideals, interests, and values, these individuals are likely to act with a sense of volition and to actualize their growth-oriented nature (Deci & Vansteenkiste, 2004). As a result, they might experience a sense of energy while working, get strongly involved in their work, and have difficulties to detach from it. Hence, it is expected that *intrinsic motivation and identified regulation have a positive effect on work engagement* (Hypothesis 3a and Hypothesis 3b, respectively). Figure 7.1 presents our research model.

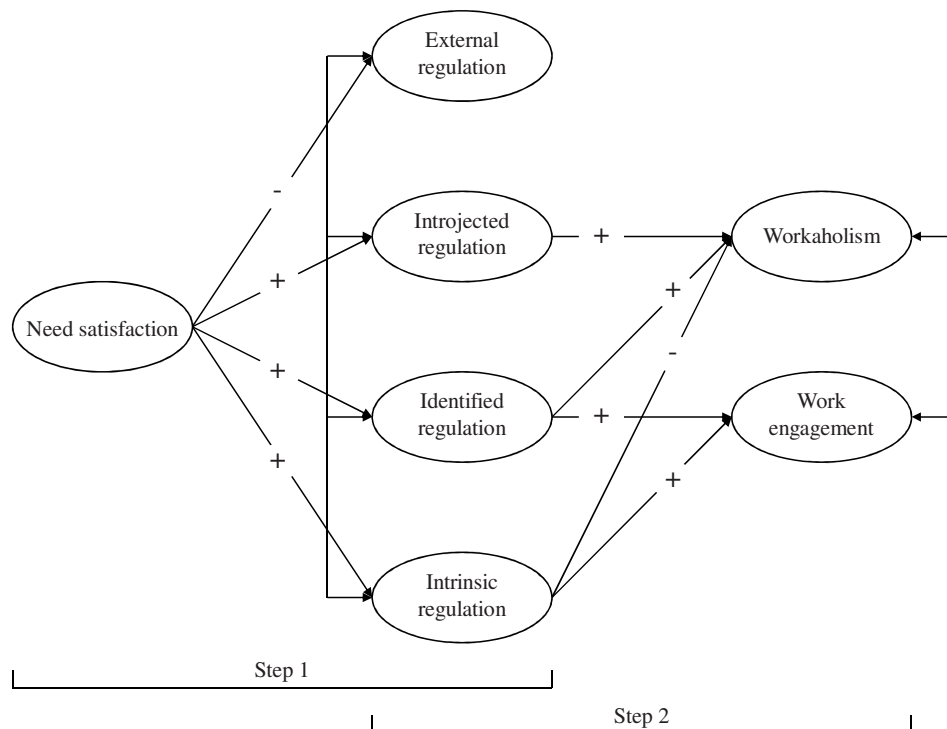


Figure 7.1. Heuristic research model.

7.2 Method

7.2.1 Sample and procedure

Participants were recruited through a call on an internet site addressing career-related issues. Visitors of this internet site were asked to fill out a questionnaire concerning work motivation. In total, 3,465 visitors responded to this call, 1,896 of which completed the questionnaire. Out of these 1,896 respondents, 113 respondents were unemployed and 10 respondents completed the questionnaire more than once or did not do so seriously (i.e., answered (nearly) all of its 54 items with "never"/"totally disagree"). Approximately 6 months later, 1,773 respondents who had indicated that they were willing to participate in the follow-up to this study and had provided their email address, were invited by email to fill out the questionnaire once more. In total, 330 respondents completed the questionnaire for the second time, yielding a response rate of 18.6%. It is conceivable that the actual response rate was higher. For example, respondents might have gone into retirement or might have changed their email address after the first measurement. Of the 330 respondents, 281 respondents had retained their job, 33 respondents had changed their job, and 16 respondents had lost their jobs and were excluded from further analyses. Therefore, the present study included 314 participants (132 males with a mean age of 47.2 years, $SD = 8.5$, and 182 females with a mean age of 44.2 years, $SD = 8.8$).

To test whether the drop-out of participants was selective at Time 2, respondents who filled out the questionnaire at Time 1 only ($N = 1,459$) were compared to respondents who filled out the questionnaire at both occasions ($N = 314$), i.e., our study participants. A Pearson chi-square test showed a more equitable male-to-female ratio in the latter group: 58% of our study participants was female, compared to 67.6% of the respondents who dropped out at Time 2, $X^2(df = 1) = 10.80$, $p < .01$. Furthermore, independent samples t-tests showed that our study participants were older (mean age of 45.47 years) and higher educated (mean education level of 4.70) than the drop-outs (mean age of 41.92 years and mean education level of 4.54), $t(df = 500,83) = -6.32$, $p < .01$ and $t(df = 488,93) = -2.23$, $p < .05$, respectively. The two groups did not differ in terms of years of job experience, $(1767) = -.933$, $p > .05$. Most importantly, multivariate analysis of variance showed that the two groups did not differ on the study variables at Time 1, $F(11, 1761) = 1.63$, $p > .05$. Therefore, we assume that the selective drop-out at Time 2 did not bias our results (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008).

7.2.2 Measures

Workaholism was measured with the Dutch Work Addiction Scale (DUWAS; Schaufeli et al., 2009) that consists of two subscales: Working Excessively and

Working Compulsively. *Working excessively* is measured with 9 items, including “I seem to be in a hurry and racing against the clock”, whereas *Working compulsively* is measured with 7 items, such as “I feel that there’s something inside me that drives me to work hard” (1 = “(almost) never”, 4 = “(almost) always”). Since workaholism can be regarded as a syndrome (i.e., a combination of working excessively and working compulsively; Van Beek et al., 2011), a composite workaholism score was used in the present study.

Work engagement was measured with the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006) that consists of three subscales: Vigor, Dedication, and Absorption. *Vigor* was measured with 3 items, including “At my work, I feel strong and vigorous”, *Dedication* was measured with 3 items, such as “I am enthusiastic about my job”, and *Absorption* was measured with 3 items as well, including “I am immersed in my work” (0 = “never”, 6 = “always”).

Motivation was measured with the Multidimensional Work Motivation Scale (MWMS; Gagné et al., in press) that showed satisfactory reliability and validity in previous research (Van Beek et al., 2011; 2012). Four subscales were used: External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Regulation. *External regulation* was measured with 3 items, including “I work to get others’ approval (e.g., supervisor, colleagues, family, clients)”. *Introjected regulation* was measured with 4 items, such as “I work because I must prove myself that I can”. *Identified regulation* was measured with 3 items, including “I work because I personally consider it important to put efforts in this job”. *Intrinsic regulation* was measured with 3 items, such as “I work because I have fun doing my job”. Items were scored on a 5-point scale (1 = “totally disagree”, 5 = “totally agree”).

Need satisfaction was measured with the Work-related Basic Need Satisfaction scale (W-BNS; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010) that includes three subscales: Autonomy Satisfaction, Competence Satisfaction, and Relatedness Satisfaction. *Autonomy satisfaction* was measured with 6 items, including “I feel like I can be myself at my job”, *Competence satisfaction* was measured with 4 items, such as “I really master my tasks at my job”, and *Relatedness satisfaction* was measured with 6 items as well, including “At work, I feel part of a group” (1 = “totally disagree”, 5 = “totally agree”).

7.2.3 Statistical analyses

Table 7.1 shows the means, standard deviations, inter-correlations, and internal consistencies of the study variables. Exploration of the data revealed no problematic data distributions. Structural Equation Modelling (SEM) methods as implemented in AMOS 16.0 (Arbuckle, 2007) were used to test our hypotheses. Maximum

likelihood estimation was applied and the goodness-of-fit of the tested models was evaluated using the χ^2 test statistic (χ^2), the Goodness-of-Fit Index (GFI), the Comparative Fit Index (CFI), the Normed Fit Index (NFI), the Tucker-Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA). Values larger than .90 for GFI, CFI, NFI, and TLI, and .08 or lower for RMSEA indicate acceptable model fit (Byrne, 2009).

Following Hakanen and colleagues (2008), the two-step procedure proposed by Cole and Maxwell (2003) and Taris and Kompier (2006) was applied. By examining the hypothesized relations in two steps, we took into account the ratio of the number of participants to the number of free parameters (i.e., model complexity; Kline, 2005). First, we examined the longitudinal relations between need satisfaction and the different types of motivation (Step 1; see Figure 7.1). Second, we examined the longitudinal relations between the different types of motivation and the two types of heavy work investment: workaholism and work engagement (Step 2).

In each of the two steps, four different models were compared using the delta chi-square test statistic ($\Delta\chi^2$): a stability model, a causality model, a reversed causality model, and a reciprocal model. In the stability model, each factor as measured at Time 1 predicted that same factor as measured at Time 2. For example, need satisfaction at Time 1 predicted need satisfaction at Time 2, external regulation at Time 1 predicted external regulation at Time 2, et cetera (step 1). In the causality model, the stability model was extended with cross-lagged paths between need satisfaction at Time 1 and the different types of motivation at Time 2 (step 1), and with cross-lagged paths between the different types of motivation at Time 1 and the two types of heavy work investment at Time 2 (step 2). In the reversed causality model, the stability model was extended with cross-lagged paths in the opposite direction, i.e., paths of motivation at Time 1 on need satisfaction at Time 2 (step 1), and from heavy work investment at Time 1 on motivation at Time 2 (step 2). Lastly, in the reciprocal model, the cross-lagged paths of the causality model *and* the reversed causality model were added to the stability model. The cross-lagged paths in the causality model, the reversed causality model, and the reciprocal model were related to the hypotheses. In all models, synchronous correlations were allowed among the latent/manifest variables at Time 1 and among the error terms of the latent/manifest variables at Time 2 (Hakanen et al., 2008). In addition, correlations were allowed between the error terms of the indicator variables of the latent variables at Time 1 and the corresponding error terms of the indicator variables of the latent variables at Time 2.

Table 7.1. Means, standard deviations, correlations, and Cronbach's alpha coefficients on the diagonal ($N = 314$)

<i>Variables</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1 Workaholism T1	2.03	.53	.74 ^a									
2 Workaholism T2	2.00	.51	.73**	.73 ^a								
3 Vigor T1	3.18	1.30	-.11	-.10	.91							
4 Vigor T2	3.26	1.27	-.04	-.14*	.73**	.93						
5 Dedication T1	3.48	1.40	-.02	-.02	.81**	.62**	.92					
6 Dedication T2	3.56	1.38	.01	-.08	.61**	.83**	.70**	.93				
7 Absorption T1	3.10	1.26	.14*	.13*	.73**	.60**	.79**	.62**	.85			
8 Absorption T2	3.08	1.22	.09	.03	.57**	.78**	.57**	.80**	.70**	.85		
9 Need for autonomy T1	3.37	.76	-.29**	-.27**	.61**	.48**	.68**	.54**	.41**	.34**	.86	
10 Need for autonomy T2	3.42	.79	-.18**	-.35**	.49**	.59**	.52**	.68**	.38**	.49**	.72**	.87
11 Need for competence T1	4.01	.64	-.11	-.06	.34**	.25**	.22**	.20**	.23**	.18**	.21**	.17**
12 Need for competence T2	4.10	.58	-.03	-.12*	.33**	.36**	.25**	.31**	.29**	.35**	.23**	.28**
13 Need for relatedness T1	3.39	.72	-.23**	-.22**	.47**	.45**	.47**	.40**	.31**	.29**	.50**	.42**
14 Need for relatedness T2	3.40	.73	-.20**	-.26**	.39**	.53**	.38**	.50**	.29**	.39**	.45**	.59**
15 External regulation T1	2.61	.94	.30**	.17**	-.13*	-.13*	-.12*	-.11	-.01	-.03	-.23**	-.12*
16 External regulation T2	2.50	.90	.17**	.23**	-.13*	-.15**	-.10	-.11*	-.02	-.05	-.20**	-.22**
17 Introjected regulation T1	2.85	.85	.40**	.32**	-.17**	-.11	-.12*	-.06	-.00	.07	-.24**	-.16**
18 Introjected regulation T2	2.73	.82	.30**	.38**	-.19**	-.15*	-.10	-.10	-.04	-.01	-.24**	-.24**
19 Identified regulation T1	3.96	.74	.10	.13*	.38**	.30**	.41**	.33**	.40**	.31**	.34**	.30**
20 Identified regulation T2	4.03	.65	.14*	.08	.30**	.37**	.34**	.40**	.32**	.37**	.29**	.33**
21 Intrinsic regulation T1	3.58	.90	-.09	-.11	.67**	.53**	.77**	.62**	.58**	.49**	.67**	.52**
22 Intrinsic regulation T2	3.69	.86	-.10	-.21**	.53**	.70**	.62**	.79**	.45**	.61**	.55**	.71**

Table 7.1 (continued). Means, standard deviations, correlations, and Cronbach's alpha coefficients on the diagonal ($N = 314$)

Variables	11	12	13	14	15	16	17	18	19	20	21	22
11 Need for competence T1	.87											
12 Need for competence T2	.56**	.84										
13 Need for relatedness T1	.12*	.14*	.82									
14 Need for relatedness T2	.07	.14*	.72**	.86								
15 External regulation T1	-.19**	-.21**	-.08	-.03	.78							
16 External regulation T2	-.17**	-.29**	-.09	-.11	.49**	.77						
17 Introjected regulation T1	-.30**	-.19**	-.20**	-.18**	.52**	.41**	.76					
18 Introjected regulation T2	-.21**	-.24**	-.13*	-.16**	.36**	.59**	.55**	.75				
19 Identified regulation T1	.19**	.19**	.34**	.18**	-.03	-.08	.02	.03	.86			
20 Identified regulation T2	.10	.19**	.27**	.23**	-.01	-.09	.12*	.04	.58**	.80		
21 Intrinsic regulation T1	.16**	.25**	.48**	.42**	-.10	-.09	-.10	-.12*	.49**	.36**	.85	
22 Intrinsic regulation T2	.10	.24**	.39**	.55**	-.08	-.14*	-.09	-.12*	.29**	.40**	.64**	.86

Note. * $p < .05$, ** $p < .01$; ^a correlation between the two subscales of the DUWAS: Working Excessively and Working Compulsively; α Working Excessively T1 = .81; α Working Compulsively T1 = .84; α Working Excessively T2 = .81; α Working Compulsively T2 = .84.

Table 7.2. Fit indices for the models ($N=314$)

<i>Model</i>	χ^2	<i>df</i>	GFI	CFI	NFI	TLI	RMSEA	Model comparisons	$\Delta\chi^2$	Δdf
Step 1: testing the relations between need satisfaction and motivation										
M1 _{stability}	154.50	57	.94	.95	.93	.92	.074			
M1 _{causality}	130.53	53	.94	.96	.94	.93	.068	M1 _{stability} -M1 _{causality}	23.97**	4
M1 _{reversed}	148.48	53	.94	.95	.93	.92	.076	M1 _{stability} -M1 _{reversed}	6.02	4
M1 _{reciprocal}	126.54	49	.95	.96	.94	.93	.071	M1 _{stability} -M1 _{reciprocal}	27.96**	8
M1 _{final}	133.65	54	.94	.96	.94	.93	.069	M1 _{causality} -M1 _{reciprocal}	3.99	4
								M1 _{reversed} -M1 _{reciprocal}	21.94**	4
Step 2: testing the relations between motivation and heavy work investment										
M2 _{stability}	233.84	75	.92	.96	.94	.93	.082			
M2 _{causality}	209.63	70	.93	.96	.94	.93	.080	M2 _{stability} -M2 _{causality}	24.21**	5
M2 _{reversed}	176.27	70	.94	.97	.95	.95	.070	M2 _{stability} -M2 _{reversed}	57.57**	5
M2 _{reciprocal}	167.75	65	.94	.97	.95	.95	.071	M2 _{stability} -M2 _{reciprocal}	66.09**	10
M2 _{final}	179.97	71	.94	.97	.95	.95	.070	M2 _{causality} -M2 _{reciprocal}	41.88**	5
								M2 _{reversed} -M2 _{reciprocal}	8.52	5

Note: * $p < .05$, ** $p < .01$.

7.3 Results

7.3.1 Testing the research models

Need satisfaction and motivation. Table 7.2 shows the fit indices for the study models. The analyses in the first step revealed that the reciprocal model ($M1_{\text{reciprocal}}$) fitted the data well, $\chi^2(N = 314, df = 49) = 126.54$, $GFI = .95$, $CFI = .96$, $NFI = .94$, $TLI = .93$, $RMSEA = .071$, and significantly better than the stability model ($M1_{\text{stability}}$), $\Delta\chi^2(N = 314, df = 8) = 27.96$, $p < .01$, and the reversed causality model ($M1_{\text{reversed causality}}$), $\Delta\chi^2(N = 314, df = 4) = 21.94$, $p < .01$. The fit of the reciprocal model was comparable to that of the causality model ($M1_{\text{causality}}$), $\Delta\chi^2(N = 314, df = 4) = 3.99$, $p > .05$, but since the causality model was more parsimonious, the reversed model was rejected in favor of the causality model. Non-significant paths were removed from the causality model in a stepwise fashion resulting in a final model. Our final model ($M1_{\text{final}}$) fitted the data adequately, $\chi^2(N = 314, df = 54) = 133.65$, $GFI = .94$, $CFI = .96$, $NFI = .94$, $TLI = .93$, $RMSEA = .069$. Figure 7.2 presents the significant effects of need satisfaction on different types of motivation.

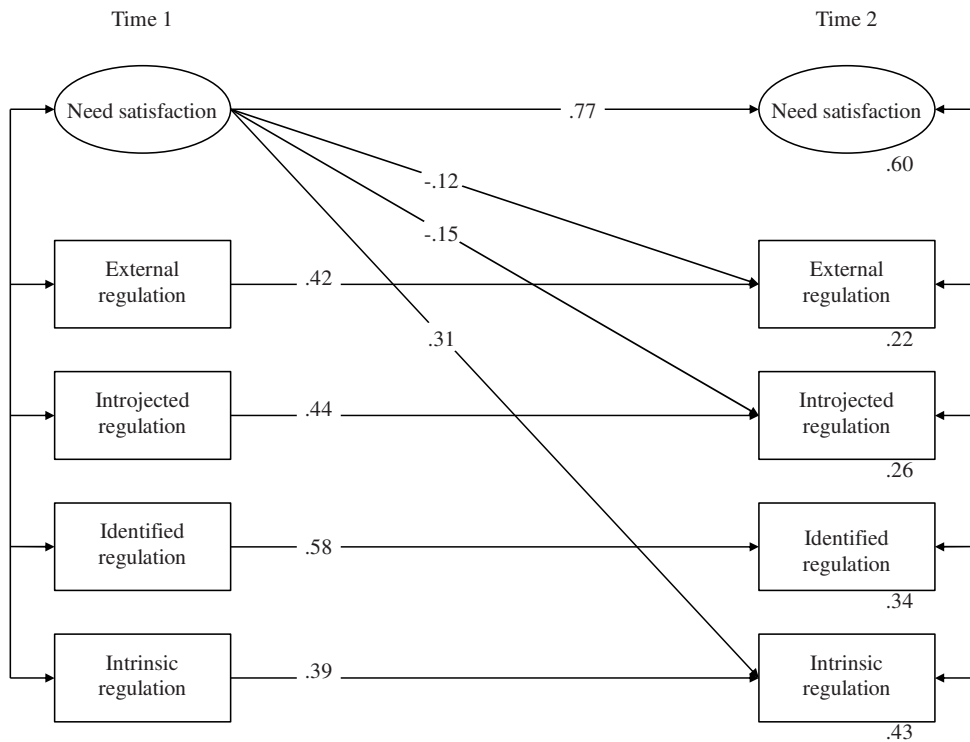


Figure 7.2. Final model: relations between need satisfaction and motivation.

Motivation and heavy work investment. The analyses in the second step showed that the reciprocal model ($M2_{\text{reciprocal}}$) fitted the data well, $\chi^2(N = 314, df = 65) = 167.75$, $GFI = .94$, $CFI = .97$, $NFI = .95$, $TLI = .95$, $RMSEA = .071$, and significantly better than the stability model ($M2_{\text{stability}}$), $\Delta\chi^2(N = 314, df = 10) = 66.09$, $p < .01$, and the causality model ($M2_{\text{causality}}$), $\Delta\chi^2(N = 314, df = 5) = 41.88$, $p < .01$. Although the fit of the reciprocal model was comparable to that of the reversed causality model ($M2_{\text{reversed causality}}$), $\Delta\chi^2(N = 314, df = 5) = 8.52$, $p > .05$, the reversed causality model was preferred because it was more parsimonious. After removing non-significant paths from this model, the model ($M2_{\text{final}}$) still fitted the data well, $\chi^2(N = 314, df = 71) = 179.97$, $GFI = .94$, $CFI = .97$, $NFI = .95$, $TLI = .95$, $RMSEA = .070$. Figure 7.3 presents the final model.

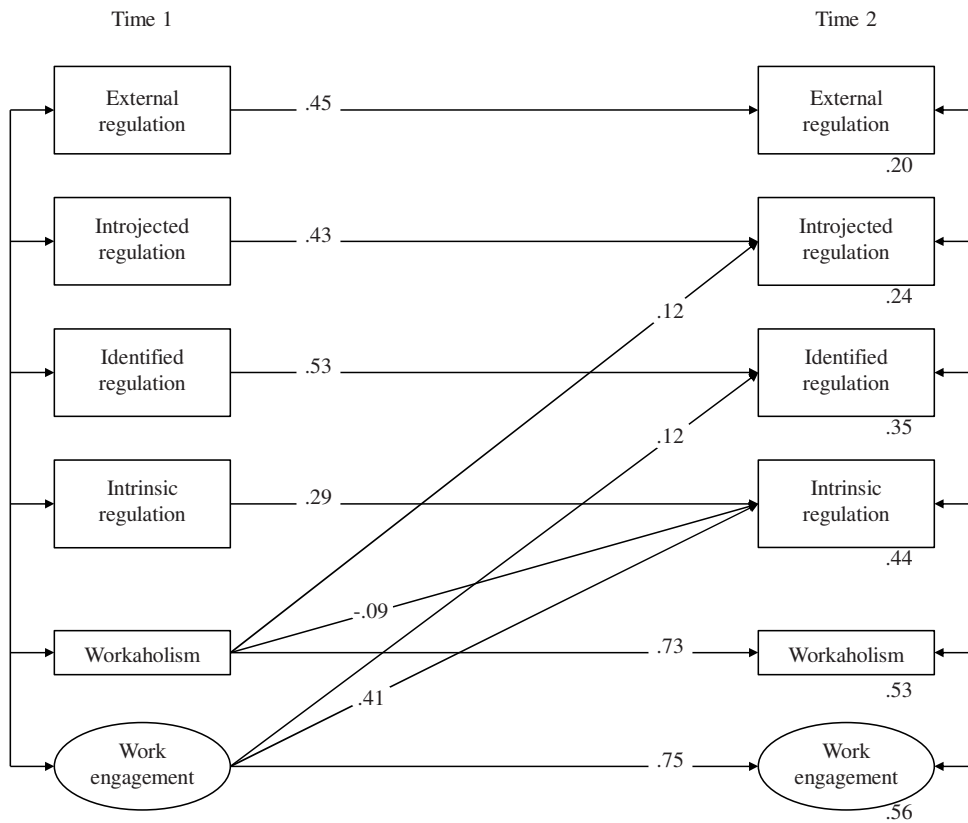


Figure 7.3. Final model: relations between motivation and heavy work investment.

Post-hoc analysis. Broadly speaking, it was expected that different types of motivation would affect workaholism and work engagement across time. However, Figure 7.3 shows that – contrary to our hypotheses – both need satisfaction and heavy work investment affect motivation over time. To examine the unique contribution of these predictors, an additional model with cross-lagged effects of need satisfaction and the two types of heavy work investment at Time 1 on the different types of motivation at Time 2 was examined, controlling for the stability of these different types of motivation. This model fitted the data well, $\chi^2(N = 314, df = 157) = 391.75$, GFI = .90, CFI = .95, NFI = .92, TLI = .93, RMSEA = .069, showing that workaholism at Time 1 predicted introjected regulation at Time 2 ($\beta = .11$), and work engagement at Time 1 predicted identified regulation ($\beta = .12$) and intrinsic regulation ($\beta = .38$) at Time 2. Thus, workaholism and work engagement as measured at T1 continued to account for a significant part of the variance in at least some of the motivational variables at T2, even after controlling for Time 1 need satisfaction, and the stabilities of the motivational variables.

7.3.2 Testing the hypotheses

Need satisfaction and motivation. Hypothesis 1a stated that need satisfaction would have a negative effect on external regulation. The findings presented in Figure 7.2 show that need satisfaction at Time 1 significantly influenced external regulation ($\beta = -.12$) at Time 2 (Hypothesis 1a confirmed). Furthermore, Hypotheses 1b-1d proposed that need satisfaction would have a positive effect on introjected regulation, identified regulation, and intrinsic regulation, respectively. Need satisfaction at Time 1 influenced introjected regulation at Time 2 negatively rather than positively ($\beta = -.15$, Hypotheses 1b rejected). Further, need satisfaction at Time 1 did not significantly predict identified regulation at Time 2 (Hypothesis 1c rejected). In line with our expectations, need satisfaction at Time 1 significantly predicted intrinsic regulation at Time 2 ($\beta = .31$; Hypothesis 1d confirmed).

Motivation and workaholism. Hypothesis 2a and Hypothesis 2b asserted that introjected regulation and identified regulation would have a positive effect on workaholism, respectively. Figure 7.3 shows that workaholism at Time 1 predicted introjected regulation at Time 2 instead of the other way around ($\beta = .12$, Hypothesis 2a rejected). We found no significant relations between identified regulation and workaholism (Hypothesis 2b rejected). Furthermore, whereas Hypothesis 2c stated that intrinsic regulation would have a negative effect on workaholism, a reversed negative effect of workaholism at Time 1 on intrinsic regulation at Time 2 was obtained ($\beta = -.09$, Hypothesis 2c rejected).

Motivation and work engagement. Hypotheses 3a and 3b proposed that intrinsic regulation and identified regulation would affect work engagement

positively. We found significant associations between these two kinds of motivation and work engagement. However, as with workaholism, these associations were in the reversed direction. Work engagement at Time 1 predicted intrinsic regulation ($\beta = .41$) and identified regulation ($\beta = .12$) at Time 2 (Hypotheses 3a and 3b rejected).

7.4 Discussion

The present study is one of the first longitudinal studies on work motivation and heavy work investment. Drawing on Deci and Ryan's Self-Determination Theory (SDT), this study examined how need satisfaction affects work motivation and how work motivation affects workaholism and work engagement across time. Although our findings are partly in line with previous theorizing and research (Deci & Ryan, 2000), the present study also calls into question some prior beliefs.

First, the current study showed that need satisfaction forestalls external regulation and introjected regulation, but promotes intrinsic regulation across time. The extent to which the needs for autonomy, competence, and relatedness are satisfied seems to have no effect on identified regulation. These findings suggest that employees who struggle with unsatisfied needs become more motivated by threats of punishments or material and social rewards (external regulation), and by partially internalized external standards of self-worth and social approval (introjected regulation). They experience a desire to be in control, to master their environment, and to feel connected with others (Deci & Ryan, 2000), and their work compensates unmet needs (Mageau et al., 2009). As a consequence, they are hindered in acting in line with their personal values and interests (Deci & Ryan, 2000). Since external standards and partially adopted external standards might conflict with what employees personally prefer, they might feel pressured to work (Ryan & Deci, 2000a; 2000b). In contrast, employees with fulfilled needs are able to do what they find interesting and enjoyable (intrinsic regulation). They will engage in their work for its own sake with a full sense of volition (Deci & Vansteenkiste, 2004). This type of behavior embodies the growth-oriented tendency of human beings, and as a result these employees will flourish. Therefore, the present findings underline the necessity of fulfilled innate psychological needs for optimal work motivation.

Second, the present study unexpectedly showed that workaholism promotes introjected regulation and reduces intrinsic regulation across time. Apparently, workaholic employees become more motivated by partially internalized external standards of self-worth and social approval (introjected regulation). They are driven to demonstrate their competencies and to avoid failure in order to achieve feelings of self-worth, like pride, and to avoid feelings of shame, guilt, and worthlessness (Ryan & Deci, 2000a). Since this type of motivation is accompanied by an internal

pressure to behave in particular ways, employees will be hindered in pursuing goals that fit their genuine ideals and interests (Ryan, Koestner, & Deci, 1991). In other words, their intrinsic regulation and, thus, their growth-oriented nature will be undermined. Consistent with this reasoning, the present study revealed a negative effect of workaholism on intrinsic regulation, suggesting that over time, employees who work excessively and compulsively will find their work less interesting and enjoyable than others.

Third, the present study showed that work engagement leads to identified regulation and intrinsic regulation across time. Engaged employees become more motivated by the underlying value of their work (identified regulation), and the pleasure and satisfaction that they derive from their work (intrinsic regulation). Like workaholic employees, engaged employees become extrinsically motivated across time. However, engaged employees will recognize the underlying value of their work and will more fully internalize external standards than workaholic employees. The external standards seem to become part of their identity (Deci & Ryan, 2000) and, as a result, they experience ownership of their behavior (Ryan & Deci, 2000a). In addition, they will do their work because they find the work activities attractive. Therefore, it is likely that engaged employees' growth-oriented nature can take its own course and that engaged employees will flourish (Deci & Vansteenkiste, 2004).

7.4.1 Study limitations

The present study is not without limitations. First, it is based on a convenience sample, and therefore we have only modest insight in the type of employees that participated in our study. It seems reasonable to assume that our participants were more interested in career-related information than the average Dutch employee, because participants were recruited through a call on an internet site addressing career-related issues. The implications for the present findings are unclear. For instance, it is possible that non-engaged employees are overrepresented in the present sample as they might be interested in finding a different job. This might have led to a restricted range of the scores on the study concepts, lack of statistical power, and conservatively estimated effect sizes.

Second, the present study relied exclusively on self-report data. Using a single source might have exaggerated the associations between our study variables due to common method variance (Conway, 2002). However, Spector (2006) convincingly shows that self-report studies do not necessarily lead to inflated correlations and that the role of social desirability is often overestimated. Furthermore, the strength of the associations displayed in Table 7.1 varies considerably, suggesting that the associations have not been influenced by a

common underlying process that affects all these associations uniformly.

Third, the present study revealed small cross-lagged effects. It might be that our study design, a two-wave design with a 6-month interval, has undermined these effects (Hakanen et al., 2008). Too short time intervals may pave the way to the conclusion that no causal effects exist, whereas too long time intervals may lead to an underestimation of the causal effects (Ford, Matthews, Wooldridge, Mishra, Kakar, & Strahan, in press; Zapf, Dormann, & Frese, 1996). Furthermore, we controlled for stability effects and due to the relatively stable nature of our study concepts the predictor variables might have been unable to explain much variance in the outcomes variables (Taris & Kompier, 2006). The baseline level of a concept at Time 1 was the most important predictor of the scores on the same concept at Time 2. However, our model fitted the data acceptably well, suggesting that the 6-month interval was reasonable, at least for the lagged effects reported in this study. For future research, it would be interesting to examine our hypothesized and found relations with longer time intervals. It is possible that such a design will reveal additional relations, such as the hypothesized relations between work motivation at Time 1 and the two types of heavy work investment at Time 2, and will contribute to more insight into the underlying dynamics of heavy work investment.

7.4.2 Study implications

Despite these limitations, the present study advances our knowledge in several ways. First, the present study supports SDT's assumption that the extent to which the three innate psychological needs are fulfilled determines employees' motivation (Deci & Ryan, 2000). Hence, need satisfaction represents an essential psychological process through which external standards are internalized and integrated, and intrinsic goal pursuit is facilitated (Deci & Vansteenkiste, 2004). To enhance need satisfaction managers may create an optimal work environment. Specifically, in order to support employees' need for autonomy, managers may clarify the purpose of work activities when assigning these tasks to them (Van den Broeck, Vansteenkiste, & De Witte, 2008). Also, managers may offer employees choices and give employees the opportunity to make decisions (Van den Broeck, Vansteenkiste, De Witte, Lens, & Andriessen, 2009). To support their need for competence, managers may offer employees challenging activities and training, and provide them with positive feedback (Van den Broeck et al., 2008). Lastly, to support the need for relatedness managers may encourage close relationships at work by regular meetings and organizing lunch breaks centrally.

Second, the current study seems to refute SDT's assumption that different regulatory processes underlying goal pursuits make an important difference in terms of effective functioning and well-being (Deci & Ryan, 2000). However, it

should be noted that a slightly less parsimonious model ($M2_{\text{reciprocal}}$) also fitted the data well and showed that motivation and the two types of heavy work investment reciprocally affect each other. Nevertheless, based on the preferred model, workaholism and work engagement both affect work motivation, but in different ways. This finding also suggests that it would be appropriate to consider workaholism and work engagement as two different phenomena that predispose employees to act in certain ways. Workaholism seems to promote employees' inclination to engage into self-protective behavior, a process marking the experience of negative emotions (Lyubomirsky, King, & Diener, 2005). As regards the origin of workaholism, it may seem equivalent to a specific set of personal characteristics, like perfectionism, a strong need for achievement, and compulsiveness (Mudrack, 2004). Also, workaholism may result from and maintained by distorted cognitions (McMillan, O'Driscoll, & Burke, 2003). For example, it is suggested that workaholic employees are insecure and have a negative self-view (Mudrack, 2006; Killinger, 2006). Based on the present findings, workaholic's behavior becomes motivated by (partially) internalized external standards of social approval and self-worth. Meeting these standards results in feelings of high self-worth and self-esteem, whereas failing to meet these standards leads to self-criticism and negative affect (Koestner & Losier, 2002; Ryan & Deci, 2002).

Work engagement seems to predispose employees to pursue self-concordant goals, a process marking the experience of positive emotions (Judge et al., 2005; Lyubomirsky et al., 2005). Favorable work environments (e.g., autonomy, social support from colleagues and supervisors, and performance feedback) and personal resources (e.g., self-efficacy and optimism) foster the development of work engagement (Bakker & Demerouti, 2008). A favorable work environment stimulates employees to do their very best, and increases the chance that work tasks are successfully completed and work goals are successfully achieved. The conviction that one is capable to reach goals and that good things will happen also contributes to positive outcomes. Employees who can draw upon these personal resources are ideally suited to take advantage of opportunities to broaden and build their repertoire of skills (Lyubomirsky et al., 2005). Free from negative feelings and distress, they can actively pursue goals that they value and find inherently satisfying (Judge et al., 2005).

Workaholism and work engagement may also lead employees to drift to certain jobs (the drift hypothesis; Zapf et al., 1996). For instance, in selection, employees with high levels of social competence, self-esteem, and stress tolerance are preferred for skilled jobs. As a result, engaged employees may get the better jobs, i.e., the jobs that allow them to do what they find important (identified regulation), and enjoyable and interesting (intrinsic regulation). Furthermore, it

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might be that engaged employees' high energy levels and positive beliefs stimulate them to search for jobs that they value and find inherently enjoyable and interesting.

7.4.3 Concluding comment

The present study provides insight into the processes that underlie work motivation. Although we did not find the expected effects of motivation on the two types of heavy work investment in this study, the present study confirmed the important role of need satisfaction for motivation and challenged theoretically plausible ideas on the effects of motivation on workaholism and work engagement. Although more research is needed regarding the latter issue, workaholism can certainly be considered a bad type of heavy work investment and work engagement a good type of heavy work investment.

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Chapter7

Chapter 8

General discussion



8.1 Research aims

The principal aim of the present thesis was to clarify the psychological mechanisms underlying workaholism and work engagement, that is, to explore *why* workaholic and engaged employees work hard. Few studies have addressed this issue, and even fewer studies have explicitly compared the motivational correlates of these two types of heavy work investment. Because, to date, no single, integrative theoretical model addresses the motivation underlying these types of heavy work investment explicitly, the present thesis attempted to explain workaholism and work engagement using existing theories from different psychological areas. Specifically, the present thesis addressed the motivational origins of workaholism and work engagement from three different perspectives, namely (1) a *trait-based perspective*, based on Reinforcement Sensitivity Theory (Gray, 1990) and Regulatory Focus Theory (Higgins, 1998), (2) a *developmental perspective*, drawing on Attachment theory (Bowlby, 1988), and (3) a *situational-based perspective*, using Self-Determination Theory (Deci & Ryan, 2000).

The second aim of the present thesis was to examine how workaholism and work engagement relate to four different outcomes: burnout, turnover intention, job satisfaction, and performance. Although work engagement seems to be primarily associated with positive outcomes (e.g., Salanova, Agut, & Peiró, 2005; Schaufeli & Bakker, 2004; Schaufeli, Taris, & Van Rhenen, 2008), previous research findings on workaholism and its outcomes are inconsistent, probably due to the differences in conceptualization and measurement. The present thesis used the effort-recovery model (Meijman & Mulder, 1998) as a conceptual framework for the outcomes of both types of heavy work investment.

In this final chapter, the empirical results from previous chapters are summarized by answering the five questions outlined in the general introduction. Thereafter, the theoretical implications, practical implications, and limitations are discussed. To conclude, recommendations for future research are presented.

8.2 Summary of main findings

8.2.1 Question 1: How is response sensitivity (i.e., BIS- and BAS-activation) related to heavy work investment (i.e., workaholism and work engagement)?

Chapter 2 reported on a cross-sectional study among students ($N = 565$). Building on Reinforcement Sensitivity Theory (RST; Gray, 1990), it was examined how individual differences in personality at the neurobiological level related to workaholism and work engagement. As expected, activation of the behavioral inhibition system (BIS) was positively associated with workaholism (i.e., overcommitment to one's studies in the reported study), suggesting that individuals

who are sensitive to potentially threatening situations and negative outcomes of their behavior (cf. Van der Linden, Beckers, & Taris, 2007), and who are motivated to avoid these situations and outcomes (McNaughton & Corr, 2004), are more likely to exhibit obsessive-compulsive work habits. In contrast, and also as expected, activation of the behavioral approach system (BAS) was positively associated with work engagement (i.e., study engagement), suggesting that individuals who are sensitive to positive incentives (Van der Linden, Beckers, & Taris, 2007) and who are motivated to achieve positive outcomes (Franken, Muris, & Rassin, 2005), tend to be more work engaged.

8.2.2 Question 2: How is regulatory focus (i.e., prevention and promotion focus) related to workaholism and work engagement?

Chapter 3 reported on a cross-sectional study among employees in the financial services sector ($N = 680$). Drawing on Regulatory Focus Theory (RFT; Higgins, 1997; 1998), it was examined how individual differences in approaching pleasure and avoiding pain related to workaholism and work engagement. As expected, a prevention focus was positively related to workaholism, indicating that individuals who are sensitive to the pleasurable absence or painful presence of negative outcomes and who use avoidance strategies, tend to exhibit more obsessive-compulsive work habits. To a much lesser extent and unpredicted, a promotion focus was positively associated with workaholism too, suggesting that individuals who are sensitive to the pleasurable presence or painful absence of positive outcomes and who use approach strategies, are likely to be more workaholic as well. The work context may provide an explanation for this unforeseen finding. For survival, most organizations seek competitive advantage (Boselie, 2011). To facilitate competitive advantage organizations use different HR practices, like training and development, and performance management. In other words, organizations may stimulate a promotion focus among all employees. Furthermore, as expected, a promotion focus was positively related to work engagement, suggesting that individuals who pursue approach goals are likely to be more work engaged. To a much lesser extent, a prevention focus was negatively associated with work engagement. Individuals who use avoidance strategies are less likely to be work engaged. The latter finding was unexpected, but it can be speculated that the presence of personal characteristics like self-efficacy and optimism, that are associated with work engagement (Bakker & Demerouti, 2008), reduce a prevention focus. The conviction that one is capable to reach goals and that good things will happen may distract one's attention from duties and responsibilities, and negative outcomes.

Taken together, the research findings in Chapter 2 and Chapter 3 showed that personality factors are differentially related to workaholism and work engagement. As RST and RFT represent theoretical models of avoidance and approach motivation (Trew, 2011), it can be concluded that workaholism is *primarily* associated with avoidance motivation and that work engagement is *primarily* associated with approach motivation.

8.2.3 Question 3: How are attachment styles (i.e., secure and insecure attachment) related to heavy work investment (i.e., workaholism and work engagement)?

Chapter 4 reported on a cross-sectional study among a heterogeneous group of employees ($N = 201$). Building on Attachment theory (Bowlby, 1988), it was examined how individual differences in attachment related to workaholism and work engagement. As expected, attachment-related anxiety was positively related to workaholism, signifying that individuals who worry about the availability and responsiveness of their partner (i.e., who are insecurely attached) are likely to show more obsessive-compulsive work habits. Working hard may be used as a means of attracting their partner's attention and getting their partner's approval (Hazan & Shaver, 1990). Attachment-related avoidance, that is, the extent to which individuals are uncomfortable opening up to their partner and depending on him/her, was not related to workaholism. In retrospect, the latter might be explained by a selecting out process and, in turn, a restriction in range of scores. The study sample consisted of employees who were involved in a romantic love relationship. As workaholic employees spend as much as possible time at their work, they report marital estrangement and poor social functioning (Schaufeli, Taris, & Van Rhenen, 2008). In contrast, and as expected, attachment-related anxiety was negatively linked to work engagement, suggesting that individuals who expect that their partner is generally accepting, available, and responsive (i.e., who are securely attached) are likely to experience higher levels of energy and mental resiliency while working, to be more dedicated to their work, and to be more absorbed in their work. Attachment-related avoidance was not related to work engagement, probably due to the fact that attachment-related anxiety and attachment-related avoidance share part of their variance. Not controlling for attachment-related anxiety, revealed a negative relation between attachment-related avoidance and work engagement. Since engaged employees consider their partners as a safe haven, they can perform their work activities with confidence and may enjoy their work (Hazan & Shaver, 1990).

In sum, the research findings in Chapter 4 showed that attachment styles are differently linked to workaholism and work engagement: workaholism seems to

be associated with insecure attachment and work engagement seems to be associated with secure attachment.

8.2.4 Question 4: How is motivational regulation (i.e., external, introjected, identified, and intrinsic regulation) related to heavy work investment (i.e., workaholism and work engagement)?

Chapters 5-7 reported on three studies that were based on Self-Determination Theory (SDT; Deci & Ryan, 2000). This theory assumes that the extent to which the social (or work) environment satisfies innate psychological needs (i.e., the needs for autonomy, competence, and relatedness) determines individuals' motivation.

Chapter 5 reported on a cross-sectional study among visitors of an internet site about career-related issues ($N = 1,246$). Since workaholism and work engagement are at most weakly correlated and, thus, relatively independent, both concepts were crossed. Crossing workaholism and work engagement yielded four different types of employees: workaholic employees (i.e., employees who are workaholic and non-engaged, 25.2%), engaged employees (i.e., employees who are non-workaholic and engaged, 27.3%), engaged workaholics (i.e., employees who are both workaholic and engaged, 22.2%), and non-workaholic/non-engaged employees (25.3%). By doing so, the study reported in Chapter 5 is one of the first that addressed a group of employees who are *both* workaholic and work engaged, indicating that the dividing line might be not as sharp in practice. The four types of employees were compared regarding their motivation. As predicted, workaholic employees and engaged workaholics were more strongly driven by external regulation and introjected regulation than engaged employees and non-workaholic/non-engaged employees. Furthermore, and also as predicted, engaged employees and engaged workaholics were more strongly driven by identified regulation and intrinsic regulation than workaholic employees and non-workaholic/non-engaged employees.

Chapter 6 reported on a cross-sectional study among Chinese health care professional (544 nurses and 216 physicians). Instead of comparing different types of employees regarding their motivation, this study examined the relation between the different types of motivation and the two types of heavy work investment. As predicted, introjected regulation was positively related to workaholism. Individuals who work to strengthen or protect their feelings of self-esteem and self-worth are likely to be more workaholic. Unexpectedly, identified regulation was positively related to workaholism too, indicating that individuals who value their work activities are likely to be more workaholic. A psychological process called cognitive dissonance reduction (Festinger, 1962) may explain this finding. Workaholic employees may deny their destructive work behavior and try to convince themselves

(and others) that they work hard because it is important. Also unexpectedly, intrinsic regulation was negatively associated with workaholism. Individuals who experience their work as interesting, enjoyable, or satisfying are less likely to show workaholic behavior patterns. This finding makes sense: introjected regulation is accompanied by an internal pressure to behave in particular ways and, therefore, employees will be hindered in pursuing goals that fit their interests (Ryan, Koestner, & Deci, 1991). Furthermore, intrinsic regulation was strongly and positively linked to work engagement, and – to a lesser degree – identified regulation and introjected regulation were positively associated with work engagement too. Individuals who experience their work as interesting, enjoyable, or satisfying experience higher levels of energy and mental resilience while working, are more willing to invest effort in their work, are stronger involved in their work, and find it harder to detach from their work (Schaufeli, Salanova, González-Romá, & Bakker, 2002). However, individuals who perform their work activities for their instrumental value may also be more work engaged. This holds for individuals who identify themselves with the underlying value of their work and who work to avoid negative feelings or to enhance their ego. Since employees are evaluated continuously and work is a major source of perceived competence (Hazan & Shaver, 1990), the latter, unforeseen finding seems plausible.

Chapter 7 reported on a two-wave study among visitors of an internet site about career-related issues ($N = 314$). Data collected during the first measurement was also used for the study reported in Chapter 5. Interestingly (and unexpectedly), the results showed that a high level of workaholism increased introjected regulation and reduced intrinsic regulation in the course of time. Apparently, workaholic employees will become more motivated by partially internalized external standards of self-worth and social approval. They will become more motivated to demonstrate their competencies and to avoid failure in order to protect and to achieve feelings of self-esteem and self-worth (Ryan & Deci, 2000). Because this type of motivation is accompanied by an internal pressure to behave in particular ways, employees will be hindered in pursuing goals that fit their ideals and interests (Ryan, Koestner, & Deci, 1991). Consistent with this reasoning, workaholic employees will find their work less interesting and enjoyable in the long run. Furthermore, a high level of work engagement facilitated identified and intrinsic regulation in the course of time. Engaged employees will become more motivated by the underlying value of their work and the spontaneous pleasure and satisfaction that is accompanied by doing their work. Although a slightly less parsimonious model also fitted the data well and showed that motivation and the two types of heavy work investment reciprocally affect each other, the preferred model revealed that workaholism and work engagement are two different phenomena that predispose employees to act in

certain ways. The implications of these research findings are discussed in § 8.3.5.

The research findings of Chapters 5-7 provided converging evidence that the two types of heavy work investment are differentially related to various forms of motivation, as distinguished by SDT. Workaholism is primarily associated with high levels of introjected regulation and low levels of intrinsic regulation, whereas work engagement is primarily associated with high levels of identified and intrinsic regulation. Hence, workaholism and work engagement seem to consist of different motivational and expectancy sets.

8.2.5 Question 5: How is heavy work investment (i.e., workaholism and work engagement) related to burnout, turnover intention, job satisfaction, and performance?

Chapters 2-5 reported on studies that also examined possible outcomes of workaholism and work engagement. In line with the expectations, workaholism was positively related to burnout and turnover intention, and negatively related to job satisfaction and performance. Workaholic employees may have little time to recover because they find it difficult to disengage from their work activities (Scott, Moore, & Miceli, 1997). Building on the effort-recovery model (Meijman & Mulder, 1998), a healthy balance between effort expenditure and recovery is likely to be undermined. Moreover, physiological and psychological strains accumulate, what may lead to burnout. Accordingly, these employees will lack energy to participate in family life and may need to use their leisure time to rest (Demerouti, Taris, & Bakker, 2007). This may lead to emotionally loaded situations and stress at home, and may prevent recovery from happening. Chronic feelings of exhaustion may develop and may lead to a higher perceived workload at work. A loss spiral may evolve. In addition, and as outlined above, workaholic employees do not find their work activities enjoyable and interesting. This may explain why workaholic employees are dissatisfied with their jobs and intend to leave their organization. As regards their performance, workaholic employees report that they fulfill their job requirements poorly (i.e., poor in-role performance). Unexpectedly, no relation was found between workaholism and extra-role performance. The scale that was used to measure the latter may explain this finding. The scale actually tapped one aspect of extra-role performance, that is, helping others at work, and workaholic employees do not help their colleagues less than others. Apparently, workaholism expresses itself primarily in work activities that meet one's job description. However, some caution is required: workaholic employees may underrate their performance. Workaholism is associated with high BIS-activation, suggesting that workaholics are biased toward negative attributes when evaluating themselves (Heimpel, Elliot, & Wood, 2006). Therefore, it would be important to use objective performance measures in future

research.

In contrast, and also as expected, work engagement was negatively related to burnout and turnover intention, and positively related to job satisfaction and performance. Engaged employees do not seem to have difficulties with disengaging from their work activities. They experience little work-home interference and spend time on leisure activities (Schaufeli et al., 2001), suggesting that they are able to recover sufficiently from their effort expenditure and that they are less vulnerable to burnout. Their healthy work-home balance and the fact that they enjoy their work activities probably explain why engaged employees are satisfied with their jobs and do not intend to quit their jobs. Furthermore, engaged employees perform well. They fulfill their job requirements (i.e., good in-role performance) and they exhibit voluntarily actions that are not included in their job description and not explicitly rewarded, but beneficial to the organization (i.e., good extra-role performance; Goodman & Svyantek, 1999; Organ, 1990). Previous research suggests that performing well increases one's confidence about one's abilities to accomplish work activities (i.e., self-efficacy), which, in turn, increases one's work engagement and future success (Schaufeli & Salanova, 2007). In other words, an upward spiral seems to exist, stressing the value of work engagement for organizations.

Taken together, the research findings in Chapters 2-5 showed that the two types of heavy work investment were oppositely related to outcomes. Workaholism was related to unfavorable outcomes, whereas work engagement was linked to favorable outcomes. Interestingly, the research findings also revealed that high levels of work engagement may buffer the adverse consequences of workaholism: workaholic employees experienced higher levels of burnout than engaged workaholics.

8.3 Theoretical implications

8.3.1 The motivational origins of workaholism and work engagement

The present thesis extends previous research in several ways. A first contribution is that it provides knowledge about the motivational correlates of workaholism and work engagement. Workaholism was associated with high BIS-activation, a strong prevention focus, a strong promotion focus, and insecure attachment, whereas work engagement was associated with high BAS-activation, a weak prevention focus, a strong promotion focus, and secure attachment. Although the motivational correlates of workaholism and work engagement differ meaningfully, some overlap exists. For instance, workaholic employees pursue divergent work goals, ranging from their obligations and responsibilities to their ideals, and they use both avoidance and approach strategies (i.e., prevention focus and promotion focus, respectively). Engaged employees pursue work goals that mirror their ideals and use

approach strategies (i.e., promotion focus). Therefore, the motivational make-up of these two types of heavy work investment seems to be more complex than initially assumed. Despite this complexity, it can be concluded that different types of heavy work investment exist.

The motivational correlates of workaholism and work engagement also lift a corner of the veil on their origins. Both types of heavy work investment are related to BIS- and BAS-activation, suggesting that workaholism and work engagement are – at least partly – rooted in neurobiology (Elliot & Thrash, 2010). In addition, their relations with the two regulatory foci and different attachment patterns suggest that workaholism and work engagement are – at least partly – rooted in childhood and early socialization. Although momentary situations can strengthen a prevention focus or promotion focus temporarily, children learn from their caregivers to insure safety, to be responsible, and to meet obligations (i.e., prevention focus), and/or to attain accomplishments and to fulfill hopes and aspirations (i.e., promotion focus; Higgins, 1997). The infant-caregiver relationship also shapes attachment representations that, in turn, influence future romantic relationships and, thus, one's orientation to work (Fraley, 2002; Hazan & Shaver, 1990).

Although the present thesis revealed that workaholism had a positive effect on introjected regulation and a negative effect on intrinsic regulation, and work engagement had a positive effect on identified and intrinsic regulation in the course of time, it is too early to rule out the possibility that need satisfaction and the different types of motivation, as described in SDT, play a role in the development of the two types of heavy work investment. A slightly less parsimonious model that fitted the data well, showed a reciprocal relation between motivation on the one hand and workaholism and work engagement on the other hand, supporting the existence of a dynamic relation between motivation and the two types of heavy work investment. More research on this issue will be needed (e.g., diary studies). Nevertheless, based on the preferred model, workaholism and work engagement both affect work motivation, but in different ways.

Now, the crucial question is how the different theories and research findings relate to each other. Although the aim of the present thesis was not to develop an "overarching" theory for heavy work investment, some conclusions can be drawn regarding the similarities and differences of the various approaches.

As written above, RST and RFT both concern avoidance and approach motivation (Trew, 2011): individuals with a highly activated BIS and a dominant prevention focus are motivated to avoid negative outcomes, while individuals with a highly activated BAS and a dominant promotion focus are motivated to approach positive outcomes (Gray, 1990; Higgins, 1997). Attachment theory may also describe an individual's tendency to use avoidance or approach strategies (Meyer, Olivier, &

Roth, 2005). For example, insecurely attached individuals who fear being rejected by others are likely to be motivated to avoid such a threatening outcome. Also, it can be speculated that they will do everything to deal with their fear, including pleasing others to attain their approval (Hazan & Shaver, 1990). In contrast, it can be speculated that securely attached individuals who have a positive view of themselves and others (Bartholomew & Horowitz, 1991) pursue approach goals, that is, positive outcomes like their aspirations (Judge, Bono, Erez, & Locke, 2005). Hence, it is questionable whether avoidance motivation can be associated with insecure attachment and approach motivation can be associated with secure attachment.

The present thesis convincingly showed that workaholism is primarily related to avoidance motivation and that work engagement is primarily related to approach motivation. Furthermore, the present thesis suggested that workaholism is linked to insecure attachment and work engagement is linked to secure attachment. This suggests that the different concepts from RST, RFT, and Attachment theory are at least partly related to each other and that Attachment theory describes to some extent an individual's tendency to use avoidance or approach strategies.

The avoidance and approach distinction does not encompass the non-self-determined (i.e., external and introjected regulation) and self-determined distinction (i.e., identified, integrated, and intrinsic regulation) described in SDT (Deci & Ryan, 2000). For example, individuals who are motivated by external regulation may work in order to acquire salary, a positive outcome, or in order to avoid being laid off, a negative outcome. In addition, self-determined approach and avoidance behaviors exist. Individuals who are motivated by identified regulation may perform work activities because they realize that it is important for their chosen career path, a positive outcome. They may also completely endorse and follow a physician's advice to stop smoking in order to avoid a bad health, a negative outcome (Deci & Ryan, 2000). Hence, there are examples of non-self-determined approach and avoidance behaviors, and of self-determined approach and avoidance behaviors. It can be speculated that high BIS- or BAS-activation and a dominant prevention or promotion focus influence the *type* of goals that are pursued within every regulatory style, varying from non-self-determined to self-determined.

Based on the reported research findings, it is tempting to conclude that avoidance motivation is associated with non-self-determined motivation and approach motivation is associated with self-determined motivation. Workaholism was primarily associated with avoidance motivation, high levels of introjected regulation, and low levels of intrinsic regulation. Work engagement was primarily associated with approach motivation, and high levels of identified and intrinsic regulation. However, workaholism was also related to identified regulation and

work engagement with introjected regulation in one study, indicating that the distinction between avoidance and approach may not fully encompass the non-self-determined and self-determined distinction.

Attachment may influence SDT's different types of motivation. SDT assumes that individuals with fulfilled innate psychological needs for autonomy, competence, and relatedness, are more likely to show self-determined behavior (Deci & Ryan, 2000). Attachment theory also implicitly assumes that relatedness is important for self-determined behavior: it is suggested that securely attached infants show more intrinsic motivation, which is visible in exploratory behavior. Furthermore, in adulthood, securely attached individuals experience much intimacy and are satisfied with their relationship (Leak & Cooney, 2001). Their intimate relationship may function as a safe haven that provides them confidence to face challenges and to follow their heart (i.e., identified and intrinsic regulation, La Guardia, & Patrick, 2008). In contrast, insecurely attached individuals may worry about the availability and responsiveness of their partner and may act in order to gain their partner's approval (i.e., external regulation; Leak & Cooney, 2001). Although both theories seem to be interconnected, they do differ in one important respect (Deci & Ryan, 2000). Attachment theory stresses that attachment patterns develop during infancy and are relatively stable over time. Conversely, SDT recognizes the influence of infant-caregiver interactions, but gives more weight to the immediate, contemporary social context.

The present thesis provides some support for the interrelationship between SDT and Attachment theory. It demonstrated that workaholism was primarily associated with high levels of introjected regulation, low levels of intrinsic regulation, and insecure attachment. It also showed that work engagement was primarily related identified and intrinsic regulation, and secure attachment. Overall, it should be clear that more work is needed to theoretically integrate and empirically relate the concepts from RST, RFT, Attachment theory, and SDT to one other.

8.3.2 Possible consequences of workaholism and work engagement

A second contribution of the present thesis is that it clarifies how workaholism and work engagement are related to four different outcomes, namely burnout, turnover intention, job satisfaction, and job performance. When it comes to workaholism and its outcomes, previous research findings were not always consistent with each other, possibly due to the differences in conceptualization and measurement. In particular, the present thesis reduces the lack of clarity that exists regarding workaholic employees' performance and challenges one of the three core features of workaholism as stated by Scott and colleagues (1997). Although workaholic employees spend an excessive amount of time on their work (first feature), and are

unwilling to disengage from their work and persistently think about it (second feature), they do not seem to work beyond what is reasonably be expected from them in order to meet organizational requirements (third feature). In line with recent research (e.g., Salanova, del Libano, Llorens, & Schaufeli, in press; Schaufeli, Taris, & Van Rhenen, 2008; Schaufeli, Taris, & Bakker, 2008), workaholism is linked to adverse outcomes, whereas work engagement is related to beneficial outcomes. Therefore, additional evidence is provided for the idea that workaholism is a “bad” type of heavy work investment and work engagement is a “good” type of heavy work investment.

8.3.3 Engaged workaholics

A third contribution of the present thesis is that it revealed the existence of a group of employees who are *simultaneously* workaholic and work engaged, called engaged workaholics. As exemplified by their associations with different motives and outcomes, workaholism and work engagement seem to represent different psychological states. This was also supported at the measurement level: the correlations between the two types of heavy work investment were non-significant or weak, indicating that workaholism and work engagement are relatively independent. Therefore, employees can be both workaholic and work engaged so that three different types of hard working employees can be distinguished: workaholic employees, engaged employees, and engaged workaholics. Interestingly, these three different types resemble Spence and Robbins’ (1992) three types of workaholics: work addicts, work enthusiasts, and enthusiastic workaholics, respectively. However, the strength of the current distinction is that it builds upon concepts that are currently used in occupational health psychology: workaholism (measured in terms of working excessively and compulsively) and work engagement. Such a distinction definitely contributes to conceptual clarity and more consistent research findings. However, a recent interview study did not support the existence of a group of employees that is both workaholic and work engaged (Ouweneel, Van Wijhe, Schaufeli, Le Blanc, & Peeters, 2012). As written above, workaholic employees may deny their destructive work behavior and may indulge in all kinds of illusions (e.g., that they are work engaged). In survey studies they might give socially desirable answers, what might be much more difficult in interview studies. The present thesis made only a beginning in examining the engaged workaholic and more research on this issue is clearly needed.

8.3.4 Measuring workaholism

A fourth contribution of the present thesis is that it underscores that measuring workaholism exclusively in terms of number of working hours (e.g., Brett & Stroh,

2003) is inappropriate. Workaholic employees and engaged employees work equally hard and those who work hardest show signs of workaholism as well as work engagement (i.e., engaged workaholics). In addition, those who work hardest do not show the highest burnout levels, whereas the "typical" workaholic employees do. Therefore, the results of studies in which workaholism is exclusively measured in terms of number of working hours (e.g., Brett & Stroh, 2003) are likely to be confounded by not distinguishing among qualitatively different groups of hard working employees. In order to distinguish workaholic employees from other hard working employees, the Dutch Work Addiction Scale (DUWAS; Schaufeli, Shimazu, & Taris, 2009) can be used. The DUWAS is a valid and reliable inventory that taps both aspects of workaholism: working excessively and working compulsively. Unlike other workaholism scales, the DUWAS is available in different languages and validated in different countries. Therefore, the DUWAS could be preferred. A downside is that this scale has not yet been tested in a clinical sample and that a clinical cutoff score is lacking. In a similar vein, work engagement can be measured with the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006), a valid and reliable questionnaire that taps the three different yet closely related components of this concept: vigor, dedication, and absorption (Schaufeli, 2012). The UWES is also available in different languages and has been validated in different countries.

8.3.5 Workaholism and work engagement as dispositions

A fifth contribution of the present thesis is that it revealed that workaholism and work engagement are two different phenomena that predispose employees to act in certain ways. Specifically, workaholism seems to predispose employees to engage into self-protective behavior, a process that is associated with experiencing negative emotions (Lyubomirsky, King, & Diener, 2005). In contrast, work engagement seems to predispose employees to pursue self-concordant goals, a process that is associated with experiencing positive emotions (Judge et al., 2005; Lyubomirsky et al., 2005). Furthermore, it is possible that workaholism and work engagement cause employees to "drift" to certain jobs (Zapf, Dormann, & Frese, 1996). For example, organizations prefer employees with high levels of social competence, self-esteem, and stress tolerance for skilled jobs. As a result, engaged employees may get the jobs that they value, and find enjoyable and interesting. Hence, workaholism and work engagement seem to be complex phenomena.

8.4 Practical implications

The present thesis suggests that engaged employees are valuable for organizations and that it would be desirable to stimulate work engagement among employees. In

contrast, working hard due to a strong, irresistible inner drive should be discouraged. Although engaged workaholics work harder than others and experience less burnout than "pure" workaholic employees, it should be clear that is too soon to draw final conclusions regarding the value of engaged workaholics for organizations. Since both regulatory foci and different attachment styles are embedded in socialization (Fraley, 2002; Hazan & Shaver, 1990), the present thesis provides directions for the development of adequate prevention and intervention programs.

First, organizations may influence the strength of the prevention focus or promotion focus by having managers serving as role models, use of language and feedback, and rewarding procedures (cf. Brockner & Higgins, 2001). In uncertain situations, such as the work context, individuals may infer from observing others how they should behave. A manager whose behavior is indicative for a promotion focus is likely to be followed by his/her subordinates showing the same kind of behavior and regulatory focus. Furthermore, language and feedback that address hopes, wishes, and aspirations stimulate a promotion focus, whereas language and feedback that focus on duties and responsibilities promote a prevention focus. Also, *rewarding* employees when they perform well, but not when they fall short may stimulate a promotion focus, while *punishing* employees when they do not perform well, but not when they do well may strengthen a prevention focus.

Second, organizations may influence employees' self-image and, therefore, their attachment pattern by having managers serving as role models, and use of language and feedback too. Secure attachment is related to having a positive view of oneself and others, while insecure attachment is associated with having a negative view of oneself and/or others (Bartholomew & Horowitz, 1991). Having a manager who is available, responsive, trustful, and accepting may change employees' view of others in a positive way (Thoomes-Vreugdenhil, 2006). Furthermore, providing positive feedback would boost employees' self-esteem (Tziner & Tanami, 2013) and may increase the likelihood of a secure orientation to others and to work. Individuals who accept themselves find it easier to open up to others and are less afraid of being abandoned (Dijkstra, 2012).

Third, organizations may enhance need satisfaction among their employees. Although workaholism and work engagement had an effect on motivation across time, there were some indications for a reciprocal relation between the concepts (i.e., motivation had an effect on workaholism and work engagement across time as well). Even if such a reciprocal relation would not be replicated in other samples or populations, need satisfaction represents an essential psychological process through which external standards are internalized and integrated, and intrinsic goal pursuit is facilitated (Deci & Vansteenkiste, 2004). It facilitates good performance and

stimulates well-being (Gagné & Deci, 2005). To enhance need satisfaction managers can attempt to optimize the work environment. Managers may clarify the purpose of a task when assigning the task to their employees to foster satisfaction of the need for autonomy (Van den Broeck, Vansteenkiste, & De Witte, 2008). Furthermore, they may offer employees choices and give employees the opportunity to make decisions (Van den Broeck, Vansteenkiste, De Witte, Lens, & Andriessen, 2009). To support the need for competence, managers may offer employees challenging activities and training, and provide them with positive feedback (Van den Broeck et al., 2008). Lastly, to support the need for relatedness managers may encourage a social climate in which employees support and respect each other.

8.4 Limitations

The present thesis has two important limitations that should be discussed. First, cross-sectional designs were used to examine how personality and attachment relate to workaholism and work engagement, and how these two types of heavy work investment relate to the different outcomes. Therefore, it cannot be concluded that particular personality traits nor particular attachment styles lead causally to a specific type of heavy work investment, and that workaholism and work engagement lead causally to specific outcomes. The findings of the two-wave study reported in Chapter 7 underline this limitation. Although it was expected that the different types of motivation, as distinguished by SDT, have an effect on workaholism and work engagement, effects in the reversed direction were found. However, it seems reasonable to assume that BIS- and BAS-activation affect the two types of heavy work investment because RST focuses on the biological underpinnings of personality (Van der Linden, Taris, Beckers, & Kindt, 2007). Similarly, RFT and Attachment theory involve regulatory foci and attachment styles that are already affected in childhood (Bowlby, 1988; Higgins, 1997, 1998). As regards the outcomes, it would seem possible that poor task performance affects work engagement negatively because it will probably lower one's commitment to and enthusiasm for that task. In order to address competing explanations for the current findings, future research should preferably employ a longitudinal design.

Second⁴, the different motivational correlates of workaholism and work engagement were examined without considering the work context. The present thesis suggests that differences in personality and attachment may determine which

⁴ This paragraph is partly based on Taris, T.W., Van Beek, I., & Schaufeli, W.B. (resubmitted). The beauty versus the beast: On the motives of engaged and workaholic employees. In I. Harpaz and R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes and future directions*. New York: Taylor & Francis/Routledge.

type of heavy work investment will result. However, the work context has motivational potential too (Bakker & Demerouti, 2007). For example, job control and support from colleagues and supervisors (i.e., job resources) are functional in achieving work goals, stimulate personal growth, and reduce job demands, such as a high work load, and the associated physiological and psychological costs. While workaholism is primarily associated with high job demands, work engagement is first and foremost associated with the availability of job resources (Schaufeli, Taris, & Van Rhenen, 2008). These associations also provide an additional explanation for the observed relations between the two types of heavy work investment and the different outcomes in the present thesis. It is likely that a *combination* of personal features and the work context determines which type of heavy work investment will occur. Although personality is thought to have a biological basis and, therefore, to be stable over time, how it manifests itself in actual behavior depends on the situation and vary considerably (Larsen & Buss, 2002). Furthermore, personality and attachment patterns affect the situations individuals opt to place themselves in. When given the choice, individuals usually choose situations that match their personality and attachment patterns (Hazen & Shaver, 1990; Larsen & Buss, 2002). Personality and attachment patterns may also evoke responses from the environment (i.e., from others), indicating that individuals may create their own environment (Larsen & Buss, 2002). Hence, future research on the origins of workaholism and work engagement should preferably address a combination of personal features and the work context.

8.5 Suggestions for future research

When discussing the results and limitations of the present thesis, several suggestions for future research were provided:

- Workaholic employees may underrate their performance and, therefore, it would be important to use objective performance measures in future research.
- A dynamic relation between the different types of motivation, as described in SDT, and the two types of heavy work investment cannot be ruled out, and, therefore, more research (e.g., diary studies) on this issue will be needed.
- To draw causal conclusions regarding the relation between personality and attachment on the one hand and the two types of heavy work investment on the other hand, future research should preferably employ a longitudinal design.

Chapter 8

- A combination of personal features and the work context may determine which type of heavy work investment will occur, and, therefore, a combination of personal and contextual factors should preferably be addressed in future research.
- A sizeable group of employees who are *simultaneously* workaholic and work-engaged (i.e., engaged workaholics) may exist: more research on this issue is clearly needed.

As far as the latter suggestion is concerned, it is important to confirm the existence of engaged workaholics. The present thesis showed that engaged workaholics work harder than others and experience less burnout than "pure" workaholic employees. To examine their value for organizations, it would be interesting to examine, for example, how engaged workaholics perform. They may work *harder* than "pure" engaged employees, but do they also perform *better* than engaged employees? Or is their performance negatively affected by disadvantageous characteristics, such as inflexibility and having difficulties with delegating (Bonebright, Clay, & Ankenmann, 2000), that are related to workaholism? The present thesis only presented a beginning in examining the possible antecedents and consequences of engaged workaholism and more research is clearly needed.

Furthermore, the present thesis introduced the term "overcommitment to one's studies", a concept referring to being obsessed with one's studies and studying compulsively and excessively, and a brief scale to tap this concept. Previous research already reported on study engagement (Ouweneel, Le Blanc, & Schaufeli, 2011; Salanova, Schaufeli, Martínez, & Bresó, 2010). As relatively stable personal features seem to be – at least partly – responsible for differences in excessive study/work behavior and study activities seem to be psychologically similar to work activities (Salanova et al., 2010), it would be interesting to examine whether overcommitment to one's studies and study engagement will "spill over" into the work domain. Specifically, it would be interesting to examine whether overcommitted and engaged students persist in their respective effort expenditures when they enter the labor market. If confirmed, such findings would support the idea that workaholism is equivalent to a specific set of personal characteristics (Mudrack, 2004) that affect one's behavior and mood across different situation (Van der Linden, Beckers, & Taris, 2007). Furthermore, it would also support the idea that work engagement is – at least partly – due to a specific combination of scores on a particular set of personal characteristics (Schaufeli, 2012), stressing the important role of personality and attachment in everyday life.

8.6 Conclusion

The present thesis demonstrated that two types of heavy work investment can be distinguished, each with a unique motivational make-up and pattern of outcomes.

As regards the motivational make-up, both personality and attachment seem to play a role in the development of workaholism and work engagement. Therefore, the trait-based perspective and the developmental perspective seem to be most valuable for exploring the origins of the two types of heavy work investment. Workaholism was primarily associated with high BIS-activation, a dominant prevention focus, and insecure attachment, whereas work engagement was primarily linked to high BAS-activation, a dominant promotion focus, and secure attachment. Interestingly and unexpectedly, workaholism and work engagement appear to motivate employees to act in certain ways on the work floor too. Workaholism had a positive effect on introjected regulation across time, while work engagement had a positive effect on identified and intrinsic regulation across time. However, reciprocal effects cannot be ruled out. Although more work is needed to theoretically integrate and empirically relate the concepts from RST, RFT, Attachment theory, and SDT to each other, it is clear that workaholic employees' and engaged employees' specific behaviors and the goals they pursue differ strongly.

As regards the possible outcomes, workaholism and work engagement were differentially related to burnout, turnover intention, job satisfaction, and performance. Workaholism was associated with a high burnout level, an intention to quit one's job, job dissatisfaction, and poor performance, whereas work engagement was associated with a low burnout level, no intention to quit one's job, job satisfaction, and good performance. Thus, workaholism and work engagement seem to have a different impact on employees themselves, their family, and their organization.

With these findings, the present thesis unraveled several secrets of the dark and bright sides of heavy work investment.

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Chapter 8

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Summary



Introduction

The majority of the Dutch employees works overtime. This phenomenon has been fostered by particular changes in the world of work in the last decades, such as global competition, a high pace of innovation, and the economic crisis. Furthermore, modern ICT allows employees to work wherever and whenever they want. So, it seems that the boundary between work and private life is blurred. These developments make work demanding and stimulate heavy work investment in terms of time and effort.

The present thesis focused on two different types of heavy work investment: workaholism and work engagement. Since only few studies sought to clarify the psychological mechanisms underlying these two types of heavy work investment, the principal aim of the present thesis was to explore why workaholic and engaged employees work hard. The motivational origins were addressed from three different perspectives: (1) a *trait-based perspective*, based on Reinforcement Sensitivity Theory and Regulatory Focus Theory, (2) a *developmental perspective*, drawing on Attachment theory, and (3) a *situational-based perspective*, using Self-Determination Theory. Furthermore, previous research findings on workaholism and its outcomes were inconsistent. The second aim of the present thesis was therefore to examine how workaholism and work engagement relate to individual (i.e., burnout and job satisfaction) and organizational (i.e., turnover intention and performance) outcomes. The effort-recovery model was used to explain possible relations between the two types of heavy work investment and their outcomes directly or indirectly. Below the answers on five specific research questions will be summarized.

Summary of main findings

Question 1: How is response sensitivity (i.e., BIS- and BAS-activation) related to heavy work investment (i.e., workaholism and work engagement)?

In Chapter 2, Reinforcement Sensitivity Theory was used to examine how individual differences in personality at the neurobiological level relate to workaholism and work engagement ($N = 565$). Activation of the behavioral inhibition system (BIS) was positively associated with workaholism, suggesting that individuals who are sensitive to potentially threatening situations and negative outcomes of their behavior, and who are motivated to avoid these situations and outcomes, are likely to be more workaholic. In contrast, activation of the behavioral approach system (BAS) was positively associated with work engagement, suggesting that individuals who are sensitive to positive outcomes and who are motivated to achieve these outcomes, tend to be more work engaged.

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Question 2: How is regulatory focus (i.e., prevention and promotion focus) related to heavy work investment (i.e., workaholism and work engagement)?

In Chapter 3, Regulatory Focus Theory was used to examine how individual differences in approaching pleasure and avoiding pain relate to workaholism and work engagement ($N = 680$). A prevention focus was positively related to workaholism, indicating that individuals who are sensitive to negative outcomes and who use avoidance strategies, tend to be more workaholic. A promotion focus was positively associated with workaholism too, suggesting that individuals who are sensitive to positive outcomes and who use approach strategies, are likely to exhibit more obsessive-compulsive work habits as well. Furthermore, a promotion focus was positively related to work engagement and a prevention focus was negatively related to work engagement. Individuals who pursue approach goals are likely to be more work engaged, whereas individuals who use avoidance strategies are less likely to be work engaged.

Based on the findings reported in Chapter 2 and Chapter 3, it can be concluded that personality factors are differentially related to workaholism and work engagement: workaholism seems to be primarily associated with avoidance motivation and work engagement seems to be primarily associated with approach motivation.

Question 3: How are attachment styles (i.e., secure and insecure attachment) related to heavy work investment (i.e., workaholism and work engagement)?

In Chapter 4, Attachment theory was used to examine how individual differences in attachment relate to workaholism and work engagement ($N = 201$). Results revealed that attachment-related anxiety was positively related to workaholism, indicating that individuals who worry about the availability and responsiveness of their partner (i.e., who are insecurely attached) are likely to show more obsessive-compulsive work habits. Attachment-related avoidance, that is, the extent to which individuals are uncomfortable opening up to their partner and depending on him/her, was not related to workaholism. In contrast, attachment-related anxiety was negatively related to work engagement, signifying that individuals who expect that their partner is generally accepting, available, and responsive (i.e., who are securely attached) are more likely to be work engaged. Unexpectedly, attachment-related avoidance was *not* related to work engagement, probably because attachment-related anxiety and attachment-related avoidance share part of their variance.

Hence, it can be concluded that attachment styles are differently linked to workaholism and work engagement: workaholism seems to be associated with insecure attachment and work engagement seems to be associated with secure

attachment.

Question 4: How is motivational regulation (i.e., external, introjected, identified, and intrinsic regulation) related to heavy work investment (i.e., workaholism and work engagement)?

In Chapters 5-7, Self-Determination Theory was used to examine how different types of motivation relate to workaholism and work engagement. Chapter 5 reported on a study that was different from the rest in the sense that four types of employees – workaholic employees, engaged employees, engaged workaholics (i.e., employees who are both workaholic and engaged), and non-workaholic/non-engaged employees (i.e., employees who are non-workaholic and non-engaged) – were compared regarding their motivation ($N = 1,246$). Results revealed that workaholic employees and engaged workaholics were more strongly driven by external regulation and introjected regulation than engaged employees and non-workaholic/non-engaged employees. Furthermore, engaged employees and engaged workaholics were more strongly driven by identified regulation and intrinsic regulation than workaholic employees and non-workaholic/non-engaged employees.

In Chapter 6, the relation between the different types of motivation and both types of heavy work investment was examined ($N = 760$). Results revealed that introjected regulation was positively related to workaholism, indicating that individuals who work to strengthen or protect their feelings of self-esteem and self-worth are likely to be more workaholic. Identified regulation was positively related to workaholism too, signifying that individuals who identify themselves with their work are likely to be more workaholic. In contrast, intrinsic regulation was negatively associated with workaholism, suggesting that individuals who experience their work as interesting, enjoyable, or satisfying are less likely to show workaholic behavior patterns. Furthermore, intrinsic regulation was strongly and positively related to work engagement. Individuals who experience their work as interesting, enjoyable, or satisfying are likely to be more work engaged. To a lesser degree, identified regulation and introjected regulation were positively associated with work engagement too, indicating that individuals who identify themselves with the underlying value of their work, and who work to avoid negative feelings or to enhance their ego may be more work engaged too.

In Chapter 7, the direction of the relation between the different types of motivation and the two types of heavy work investment was examined by employing a two-wave full panel design ($N = 314$). Interestingly, results showed that a high level of workaholism increased introjected regulation and reduced intrinsic regulation in the course of time. Apparently, over time, workaholic employees seem

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to become more motivated to protect and to achieve feelings of self-esteem and self-worth. Because this type of motivation is accompanied by an internal pressure to behave in particular ways, employees will be hindered in pursuing goals that fit their interests. Therefore, workaholic employees will find their work less interesting and enjoyable in the long run. Furthermore, a high level of work engagement facilitated identified and intrinsic regulation in the course of time. Engaged employees will become more motivated by the underlying value of their work, and the spontaneous pleasure and satisfaction that is accompanied by doing their work. However, the existence of a dynamic relation between the different types of motivation and the two types of heavy work investment cannot be ruled out. More research on this issue is needed.

Taken together, it can be concluded that the two types of heavy work investment are differentially related to various forms of motivation, as distinguished by SDT. Workaholism is primarily associated with high levels of introjected regulation and low levels of intrinsic regulation, whereas work engagement is primarily associated with high levels of identified and intrinsic regulation.

Question 5: How is heavy work investment (i.e., workaholism and work engagement) related to burnout, turnover intention, job satisfaction, and performance?

Throughout Chapters 2-5, possible individual and organizational outcomes of workaholism and work engagement were examined. Workaholism was positively associated with burnout and turnover intention, and negatively associated with job satisfaction and performance. Based on the effort-recovery model, workaholic employees may experience an imbalance between their effort expenditure and recovery, possibly leading to burnout in the long run. A loss spiral may evolve and may lead to job dissatisfaction, an increased intention to leave the organization, and poor performance. Although no relation was found between workaholism and extra-role performance, workaholic employees report that they fulfill their job requirements poorly (i.e., in-role performance). However, some caution is required: workaholic employees may underrate their performance. They seem to be biased toward negative attributes when evaluating themselves. Therefore, it would be important to use objective performance measures in future research.

In contrast, work engagement was negatively associated with burnout and turnover intention, and positively associated with job satisfaction and performance. Engaged employees do not seem to have difficulties with disengaging from their work activities. They experience little work-home interference and spend time on leisure activities, suggesting that they have a healthy balance between effort expenditure and recovery. In addition, they enjoy their work activities. Therefore, it

seems reasonable that engaged employees are satisfied with their jobs and do not have the intention to quit their jobs. Furthermore, engaged employees perform well. They fulfill their job requirements (i.e., in-role performance) and they exhibit voluntarily actions that are not included in their job description and not explicitly rewarded, but beneficial to the organization (i.e., extra-role performance).

In sum, workaholism was related to unfavorable outcomes, whereas work engagement was linked to favorable outcomes. Interestingly, the research findings also revealed that high levels of work engagement may buffer the adverse consequences of workaholism: workaholic employees experienced higher levels of burnout than engaged workaholics.

Theoretical implications

The motivational origins of workaholism and work engagement

The present thesis lifts a corner of the veil on the origins of workaholism and work engagement. Since both types of heavy work investment are related to BIS- and BAS-activation, it can be speculated that workaholism and work engagement may have biological origins. In addition, their relations with the two regulatory foci and different attachment patterns suggest that workaholism and work engagement may – at least for some part – be rooted in childhood and early socialization. In other words, the seeds of workaholism and work engagement seem to be planned well before individuals enter the labor market. Furthermore, there are indications that a dynamic relation between the different types of motivation, as described in SDT, and the two types of heavy work investment exists, suggesting that the social (or work) environment, that is, the present, may play a role in the development of workaholism and work engagement as well.

Possible consequences of workaholism and work engagement

The present thesis supports the idea that workaholism is a “bad” type of heavy work investment and work engagement is a “good” type of heavy work investment. Workaholism was related to unfavorable outcomes, while work engagement was linked to favorable outcomes. Furthermore, the present thesis reduces the lack of clarity that exists regarding workaholic employees’ performance: workaholic employees seem to perform poor. Moreover, it challenges one of the three core features of workaholism as stated by Scott and colleagues (1997). Although workaholic employees spend an excessive amount of time on their work (first feature), and are unwilling to disengage from their work and persistently think about it (second feature), they do not seem to work beyond what is reasonably be expected from them in order to meet organizational requirements (third feature).

Summary

Engaged workaholics

The present thesis includes one of the first studies that addressed a group of employees who are simultaneously workaholic and work engaged, called engaged workaholics. This means that, in fact, three different types of hard working employees can be distinguished: workaholic employees, engaged employees, and engaged workaholics. Although these three different types seem to resemble Spence and Robbins' three types of workaholics, the strength of the present distinction is that it builds upon concepts that are currently used in occupational health psychology: workaholism (i.e., working excessively and compulsively) and work engagement. Such a distinction contributes to conceptual clarity and more consistent research findings.

Measuring workaholism

The present thesis underlines that measuring workaholism exclusively in terms of number of working hours is inappropriate and leads to confusing and biased research findings. Workaholic employees and engaged employees work equally hard, and engaged workaholics work even harder. In addition, those who work hardest do not show the highest burnout levels, whereas typical workaholic employees do. In order to distinguish workaholic employees from other hard working employees, the Dutch Work Addiction Scale (DUWAS) can be used.

Workaholism and work engagement as dispositions

The present thesis reveals that workaholism and work engagement are two different phenomena that predispose employees to act in certain ways. Specifically, workaholism seems to predispose employees to engage into self-protective behavior, a process that is associated with experiencing negative emotions, whereas work engagement seems to predispose employees to pursue self-concordant goals, a process that is associated with experiencing positive emotions. Hence, workaholism and work engagement seem to be complex phenomena.

Practical implications

Engaged employees seem to be valuable for organizations and, therefore, it would be desirable to stimulate work engagement among employees. Since the regulatory foci and different attachment styles are embedded in socialization, the present thesis provides directions for the development of adequate prevention and intervention programs. For example, organizations may influence employees' regulatory foci and attachment patterns by having managers serving as role models, use of language and feedback, and rewarding procedures. Since there were indications for a dynamic relation between SDT's different types of motivation and

the two types of heavy work investment, organizations may enhance need satisfaction among their employees by creating an optimal work environment.

Limitations

Despite the contributions of the present thesis, there are two important limitations. First, to examine how personality and attachment relate to workaholism and work engagement, and how these two types of heavy work investment relate to the different outcomes, a cross-sectional design was employed. Therefore, causal conclusions cannot be drawn. Second, the present study did not consider the work context (e.g., job control and support from colleagues), although the work context has motivational potential too, and may stimulate the development of workaholism and work engagement. A combination of personal features and the work context probably determines which type of heavy work investment will occur.

Conclusion

The present thesis demonstrated that two types of heavy work investment can be distinguished, a “bad” (workaholism) and a “good” (work engagement) one, each with a unique motivational make-up and pattern of outcomes. With these findings, the present thesis contributed to the unraveling of the dark and bright sides of heavy work investment.



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Inleiding

Het merendeel van de Nederlandse werknemers werkt over. Dit wordt bevorderd door verschillende ontwikkelingen in de laatste decennia, zoals de wereldwijde concurrentie, het hoge tempo waarop innovatie plaatsvindt en de economische crisis. Daarnaast hebben de ontwikkelingen op het gebied van ICT ervoor gezorgd dat werknemers kunnen werken waar en wanneer zij maar willen. De grens tussen werk en privé is vervaagd. Deze ontwikkelingen maken werk veeleisend en stimuleren in termen van tijd en inspanning grote investeringen in het werk.

In dit proefschrift werden twee verschillende typen hard werken centraal gesteld: werkverslaving en bevlogenheid. Gegeven dat maar enkele studies de psychologische mechanismen die ten grondslag liggen aan deze twee typen hard werken hebben onderzocht, was het hoofddoel van dit proefschrift om te onderzoeken waarom werkverslaafde en bevlogen werknemers hard werken. Dit werd onderzocht vanuit drie perspectieven: (1) een persoonlijkheidsperspectief, gebruikmakend van de *Reinforcement Sensitivity Theory* en *Regulatory Focus Theory*, (2) een ontwikkelingsperspectief, gebruikmakend van de *Attachment theory*, en (3) een situationeel perspectief, gebruikmakend van de *Self-Determination Theory*. Bovendien waren eerdere onderzoeksbevindingen met betrekking tot de mogelijke gevolgen van werkverslaving tegenstrijdig. Het tweede doel van dit proefschrift was dan ook om te onderzoeken hoe werkverslaving en bevlogenheid zich verhouden tot individuele (i.e., burn-out en baantevredenheid) en organizationele (i.e., verloopintentie en prestatie) uitkomstmaten. Het *effort-recovery model* werd gebruikt om mogelijke relaties tussen de twee typen hard werken en de uitkomstmaten direct of indirect te verklaren. Hieronder worden de antwoorden op vijf onderzoeksvragen samengevat.

Belangrijkste bevindingen

Vraag 1: Hoe hangt gevoeligheid voor bekrachtiging (i.e., BIS- en BAS-activering) samen met hard werken (i.e., werkverslaving en bevlogenheid)?

In Hoofdstuk 2 werd aan de hand van de *Reinforcement Sensitivity Theory* onderzocht hoe individuele verschillen in persoonlijkheid, welke hun oorsprong hebben in de neurobiologie, samenhangen met werkverslaving en bevlogenheid ($N = 565$). Activering van het *behavioral inhibition system* (BIS; "gedragsvermijdingssysteem") was positief gerelateerd aan werkverslaving. Dit suggereert dat individuen die gevoelig zijn voor situaties die een bedreiging zouden kunnen vormen en voor negatieve gevolgen van het eigen gedrag, en die gemotiveerd zijn om dergelijke situaties en gevolgen te voorkomen, meer werkverslaafd zullen zijn. Activering van het *behavioral approach system* (BAS;

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"gedragsbenaderingssysteem") was positief gerelateerd aan bevlogenheid. Dit doet vermoeden dat individuen die gevoelig zijn voor positieve uitkomsten en die gemotiveerd zijn om deze uitkomsten te behalen, meer bevlogen zullen zijn.

Vraag 2: Hoe hangt regulatieve focus (i.e., preventie- en promotiefocus) samen met hard werken (i.e., werkverslaving en bevlogenheid)?

In hoofdstuk 3 werd aan de hand van de *Regulatory Focus Theory* onderzocht hoe individuele verschillen in het nastreven van plezier en het vermijden van pijn samenhangen met werkverslaving en bevlogenheid ($N = 680$). Een preventiefocus was positief gerelateerd aan werkverslaving, wat betekent dat individuen die gevoelig zijn voor de af- of aanwezigheid van negatieve uitkomsten en die erop gebrand zijn deze uitkomsten te vermijden meer werkverslaafd zullen zijn. Een promotiefocus was ook positief gerelateerd aan werkverslaving, wat betekent dat individuen die gevoelig zijn voor de af- of aanwezigheid van positieve uitkomsten en die deze uitkomsten nastreven ook meer obsessief-compulsieve werkgewoonten zullen vertonen. Verder was een promotiefocus positief gerelateerd aan bevlogenheid en was een preventiefocus negatief gerelateerd aan bevlogenheid. Met andere woorden, individuen die positieve uitkomsten nastreven zullen meer bevlogen zijn en individuen die negatieve uitkomsten proberen te vermijden zullen minder bevlogenheid zijn.

Op basis van de bevindingen in Hoofdstuk 2 en Hoofdstuk 3 kan geconcludeerd worden dat persoonlijkheidsfactoren verschillend gerelateerd zijn aan werkverslaving en bevlogenheid: werkverslaving lijkt voornamelijk gepaard te gaan met motivatie om negatieve uitkomsten te vermijden en bevlogenheid lijkt voornamelijk gepaard te gaan met motivatie op positieve uitkomsten te behalen.

Vraag 3: Hoe hangt hechting (i.e., veilige en onveilige hechting) samen met hard werken (i.e., werkverslaving en bevlogenheid)?

In Hoofdstuk 4 werd aan de hand van de *Attachment theory* onderzocht hoe individuele verschillen in hechting samenhangen met werkverslaving en bevlogenheid ($N = 201$). Hechtingsgerelateerde angst hing positief samen met werkverslaving. Dit suggereert dat individuen die zich zorgen maken over de beschikbaarheid en responsiviteit van hun partner (i.e., die onveilig zijn gehecht) meer obsessief-compulsief werkgedrag zullen vertonen. Hechtingsgerelateerde vermijding, oftewel de mate waarin individuen zich ongemakkelijk voelen als zij zich openstellen voor en vertrouwen op hun partner, was niet gerelateerd aan werkverslaving. Verder hing hechtingsgerelateerde angst negatief samen met bevlogenheid. Dit betekent dat individuen die verwachten dat hun partner voldoende beschikbaar en responsief is (i.e., die veilig gehecht zijn) meer bevlogen

zullen zijn. Hechttingsgerelateerde vermijding was niet gerelateerd aan bevlogenheid, maar dat kan mogelijk verklaard worden doordat hechttingsgerelateerde angst en hechttingsgerelateerde vermijding met elkaar samenhangen.

Kortom, er kan geconcludeerd worden dat werkverslaving gepaard gaat met onveilige hechting en dat bevlogenheid gepaard gaat met veilige hechting.

Vraag 4: Hoe hangt motivatie regulatie (i.e., externe, geïntrojecteerde, geïdentificeerde en intrinsieke regulatie) samen met hard werken (i.e., werkverslaving en bevlogenheid)?

In de Hoofdstukken 5-7 is aan de hand van de *Self-Determination Theory* onderzocht hoe verschillende typen motivatie gerelateerd zijn aan werkverslaving en bevlogenheid. Hoofdstuk 5 beslaat een onderzoek dat afwijkt van de andere hoofdstukken beschreven in dit proefschrift omdat vier typen werknemers – werkverslaafden, bevlogenen, bevlogen werkverslaafden (i.e., zowel bevlogen als werkverslaafd) en niet werkverslaafde/niet bevlogen werknemers – met elkaar vergeleken werden op motivatie ($N = 1,246$). De resultaten toonden aan dat werkverslaafden en bevlogen werkverslaafden sterker gedreven werden door externe regulatie en geïntrojecteerde regulatie dan bevlogenen en niet werkverslaafde/niet bevlogen werknemers. Daarnaast werden bevlogenen en bevlogen werkverslaafden meer gedreven door geïdentificeerde en intrinsieke regulatie dan werkverslaafden en niet werkverslaafde/niet bevlogen werknemers.

In hoofdstuk 6 werd de relatie tussen de verschillende typen motivatie en de twee typen hard werken onderzocht ($N = 760$). De resultaten toonden aan dat geïntrojecteerde regulatie positief samenhang met werkverslaving, wat suggereert dat individuen die werken om hun gevoelens van eigenwaarde te beschermen of te versterken meer werkverslaafd zullen zijn. Ook geïdentificeerde regulatie hing positief samen met werkverslaving. Individen die zich identificeren met hun werk zullen ook meer werkverslaafd zijn. Intrinsieke regulatie, daarentegen, was negatief gerelateerd aan werkverslaving. Dit betekent dat individuen die hun werk interessant en plezierig vinden en er voldoening uithalen minder werkverslaafd zullen zijn. Daarnaast hing intrinsieke regulatie sterk, maar positief samen met bevlogenheid. Individen die hun werk interessant en plezierig vinden en er voldoening uithalen zullen meer bevlogen zijn. Geïdentificeerde en geïntrojecteerde regulatie hingen in minder sterke mate positief samen met bevlogenheid, wat suggereert dat individuen die zichzelf identificeren met hun werk en die werken om negatieve emoties ten opzichte van zichzelf te vermijden en hun eigenwaarde te vergroten ook meer bevlogen zullen zijn.

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In hoofdstuk 7 werd de richting van de relatie tussen de verschillende typen motivatie en de twee typen hard werken onderzocht aan de hand van een *full panel design* ($N = 314$). De resultaten toonden dat een hoge mate van werkverslaving tot meer geïntrojecteerde regulatie en minder intrinsieke regulatie leidde. Klaarblijkelijk worden werkverslaafde werknemers steeds meer gedreven door het beschermen en verkrijgen van zelfvertrouwen en eigenwaarden. Gegeven dat geïntrojecteerde regulatie gepaard gaat met een interne druk om op een bepaalde manier te handelen, worden werknemers belemmerd in het nastreven van doelen die passen bij hun interesses. Hierdoor zullen werkverslaafde werknemers op de lange termijn hun werk als minder interessant en plezierig ervaren. Daarnaast leidde een hoge mate van bevlogenheid tot meer geïdentificeerde en intrinsieke regulatie. Bevlogen werknemers worden steeds meer gedreven door het onderliggende belang van hun werkzaamheden en het plezier dat zij beleven bij het uitvoeren van hun werkzaamheden. Echter, het is goed mogelijk dat er een dynamische relatie bestaat tussen de verschillende typen motivatie en de twee typen hard werken. Meer onderzoek is nodig.

Samenvattend kan er geconcludeerd worden dat de twee typen hard werken verschillend samenhangen met de verschillende typen motivatie die beschreven staan in de *Self-Determination Theory*. Werkverslaving gaat gepaard met een hoge mate van geïntrojecteerde regulatie en een lage mate van intrinsieke regulatie, terwijl bevlogenheid gepaard gaat met een hoge mate van geïdentificeerde en intrinsieke regulatie.

Vraag 5: Hoe hangt hard werken (i.e., werkverslaving en bevlogenheid) samen met burn-out, verlooptentatie, baantevredenheid en werkprestatie?

In Hoofdstukken 2-5 zijn ook de mogelijk gevolgen van werkverslaving en bevlogenheid onderzocht. Werkverslaving was positief gerelateerd aan burn-out en verlooptentatie, en negatief gerelateerd aan baantevredenheid en werkprestatie. Aan de hand van de *effort-recovery model* kan verondersteld worden dat werkverslaafden een disbalans ervaren tussen de inspanningen die zij leveren en de herstelmomenten die zij genieten. Dit kan op de lange termijn leiden tot burn-out. Een negatieve spiraal kan ontstaan met ontevredenheid over de baan, de wil om de organisatie te verlaten en een slechte prestatie tot gevolg. Hoewel er geen significante relatie werd gevonden tussen werkverslaving en extra-rol gedrag, meenden werkverslaafde werknemers dat zij de taken die in hun functieomschrijving staan onder de maat vervullen (i.e., in-rol gedrag). Echter, enige voorzichtigheid is hier geboden: het is denkbaar dat werkverslaafden hun prestaties onderschatten omdat zij bij zelfevaluaties de neiging lijken te hebben om

zich te richten op hun negatieve eigenschappen. Voor toekomstig onderzoek zou het interessant zijn om objectieve prestatie-maten te gebruiken.

Bevlogenheid, daarentegen, was negatief gerelateerd aan burn-out en verloopintentie, en positief gerelateerd aan baantevredenheid en werkprestatie. Bevlogen werknemers lijken geen moeite te hebben om zich van hun werkzaamheden los te maken. Zij ervaren weinig werk-thuis interferentie en besteden tijd aan familie, vrienden en hobby's. Dit suggereert dat zij een gezonde balans hebben tussen de inspanningen die zij leveren voor hun werk en herstel-mogelijkheden. Bovendien ervaren zij plezier bij het uitvoeren van hun werkzaamheden. Om deze redenen is het aannemelijk dat bevlogen werknemers tevreden zijn met hun baan en niet de intentie hebben om de organisatie te verlaten. Ook presteren zij goed. Zij vervullen de taken die in hun functieomschrijving staan en voeren daarnaast vrijwillig andere taken uit die de organisatie dienen.

Kortom, werkverslaving is gerelateerd aan ongunstige uitkomsten, terwijl bevlogenheid gerelateerd is aan gunstige uitkomsten. Bovendien onthulden de onderzoeksbevindingen dat een hoge mate van bevlogenheid de negatieve gevolgen die gepaard gaan met werkverslaving vermindert: werkverslaafden scoren hoger op burn-out dan bevlogen werkverslaafden.

Theoretische implicaties

De oorsprong van werkverslaving en bevlogenheid

Dit proefschrift ligt een tipje van de sluier op wat betreft de oorsprong van werkverslaving en bevlogenheid. Aangezien beide typen hard werken gerelateerd zijn aan activering van het *behavioral inhibition system* (BIS) en het *behavioral approach system* (BAS), kan gespeculeerd worden dat werkverslaving en bevlogenheid ten minste gedeeltelijk een neurobiologische oorsprong hebben. Bovendien suggereren de relaties met de twee regulatie foci en de verschillende hechtingsstijlen dat werkverslaving en bevlogenheid ten minste gedeeltelijk hun oorsprong hebben in de kindertijd en vroege socialisatie. Verder zijn er aanwijzingen dat er een dynamische relatie bestaat tussen de twee typen hard werken en de verschillende typen motivatie zoals beschreven in de *Self-Determination Theory*. Dit suggereert dat de sociale (werk) omgeving, oftewel het heden, tevens een rol speelt in de ontwikkeling van werkverslaving en bevlogenheid.

Bevlogen werkverslaafden

Dit proefschrift bevat één van de eerste onderzoeken naar werknemers die zowel werkverslaafd als bevlogen zijn, oftewel naar bevlogen werkverslaafden. Dit betekent in feite dat drie verschillende typen hard werkende werknemers

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onderscheiden kunnen worden: werkverslaafden, bevlogenen en bevlogen werkverslaafden. Hoewel deze drie typen hard werkende werknemers overeen lijken te komen met Spence en Robbins' drie typen werkverslaafden, bouwt de huidige indeling voort op concepten die vandaag de dag worden gebruikt in de arbeids- en gezondheidspsychologie, namelijk werkverslaving (i.e., excessief en compulsief werken) en bevlogenheid. Een dergelijke indeling draagt bij aan conceptuele duidelijkheid en consistente onderzoeksbevindingen.

Het meten van werkverslaving

Dit proefschrift benadrukt dat het meten van werkverslaving aan de hand van het aantal uren dat gewerkt wordt ongeschikt is en tot vertekende onderzoeksbevindingen leidt. Werkverslaafde werknemers en bevlogen werknemers werken even hard en bevlogen werkverslaafden werken zelfs nog harder. Bovendien scoort deze laatste groep niet het hoogst op burn-out. Dit geldt echter wel voor werkverslaafde werknemers. Om werkverslaafde werknemers van andere hard werkende werknemers te onderscheiden kan de *Dutch Work Addiction Scale* (DUWAS) worden gebruikt.

Werkverslaving en bevlogenheid als disposities

Dit proefschrift toont aan dat werkverslaving en bevlogenheid twee verschillende fenomenen zijn die werknemers motiveren om op een bepaalde manier te handelen. Werkverslaving bevordert zelfbeschermend gedrag, wat geassocieerd wordt met het ervaren van negatieve emoties. Bevlogenheid bevordert het nastreven van doelen die normen en waarden en interesses weerspiegelen, hetgeen geassocieerd wordt met het ervaren van positieve emoties. Kortom, werkverslaving en bevlogenheid zijn complexe fenomenen.

Praktische implicaties

Bevlogen werknemers lijken van grote waarde te zijn voor organisaties. Het is dus wenselijk om bevlogenheid zo veel mogelijk onder werknemers te stimuleren. Dit proefschrift biedt aanknopingspunten voor het ontwikkelen van geschikte preventie- en interventieprogramma's: zowel de twee regulatie foci als de verschillende hechtingsstijlen worden bepaald door socialisatie. De regulatie foci en hechtingsstijlen kunnen beïnvloed worden door managers die als rolmodel dienen, het geven van feedback en beloningssystemen. De aanwijzingen voor het bestaan van een dynamische relatie tussen de verschillende typen motivatie zoals beschreven in de *Self-Determination Theory* en de twee typen hard werken suggereren dat organisaties een optimale werkomgeving dienen te creëren die



voldoet aan de behoeften (aan autonomie, competentie en relationele verbondenheid) van werknemers.

Beperkingen

Ondanks de grote waarde van dit proefschrift, kent dit proefschrift ook twee belangrijke beperkingen. Ten eerste, er is gebruik gemaakt van een cross-sectioneel design om te onderzoeken hoe persoonlijkheid en hechting gerelateerd zijn aan werkverslaving en bevlogenheid, en hoe de twee typen hard werken gerelateerd zijn aan de verschillende uitkomstmaten. Hierdoor kunnen er geen conclusies worden getrokken met betrekking tot oorzaak en gevolg. Ten tweede, er is in dit proefschrift geen rekening gehouden met de werkcontext (e.g., de mate van autonomie en steun van collega's), terwijl de werkcontext werknemers kan motiveren en van invloed is op de ontwikkeling van werkverslaving en bevlogenheid. Het is aannemelijk dat een combinatie van persoonlijke kenmerken en de werkcontext bepaalt of werknemers hard werken en op welke manier zij dit doen.

Conclusie

Dit proefschrift toont aan dat twee typen hard werken onderscheiden kunnen worden: een "slecht" type, werkverslaving, en een "goed" type, bevlogenheid. Beide typen verschillen van elkaar met betrekking tot oorsprong en gevolgen. Op basis van deze bevindingen zijn de negatieve kant en de positieve kant van hard werken verder ontrafeld.



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Dankwoord



Dankwoord

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Nu is het tijd voor een nieuwe uitdaging.

Ilona

