

# Are Workaholics Born or Made? Relations of Workaholism With Person Characteristics and Overwork Climate

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*While the academic literature acknowledges that workaholism may result from individual characteristics as well as from environmental factors, little is known about the joint impact of these two kinds of antecedents. The present study explores whether the interaction between the perception of an overwork climate in the workplace and person characteristics (i.e., achievement motivation, perfectionism, conscientiousness, self-efficacy) may foster workaholism. Data were collected on a sample of 333 Dutch employees. The results of moderated regression analyses fully supported our hypotheses and showed that the interaction between an overwork climate and person characteristics is related to workaholism. More specifically, our results revealed a significant increase in workaholism when employees both possessed person characteristics that predispose them toward workaholism and perceived an overwork climate in their workplaces. In addition, conscientiousness and self-efficacy were related to workaholism, but only in interaction with the presence of an overwork climate. These results contribute to the ongoing conceptualization of workaholism by demonstrating empirically that a work environment characterized by an overwork climate may foster workaholism, especially for those high in achievement motivation, perfectionism, conscientiousness, and self-efficacy.*

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Organizations require their employees to be proactive and show initiative, to collaborate efficiently with their colleagues, to be committed to their own professional development, and to pursue high quality performance standards (Bakker & Schaufeli, 2008). From a broader perspective, current economic recession, organizational downsizings and restructurings, and growing levels of job insecurity may encourage employees to invest an increasing amount of time and effort into their work (Greenhouse, 2001; Selmer & Waldstrøm, 2007). Furthermore, the greater personal use of technological developments (e.g., smartphones and laptops) is enabling employees to carry out their work at any place at any time, thereby blurring the distinction between work and home (Jones, Burke, & Westman, 2006).

The high prevalence of overwork has led to concerns about its impact on employee well-being. The harmful consequences of working long hours include sleep deprivation, decline in neurocognitive and physiological functioning, impaired performance, and an increased risk of illnesses and injuries (e.g., Caruso, 2006). In addition, working overtime leads to prolonged exposure to workplace hazards and demands, decreases time for leisure activities and family life, and reduces recovery time (Dahlgren, Kecklund, & Akerstedt, 2006). The most dramatic consequences of excessive overwork have been observed in Japan, where the notion of *karoshi* is used to describe sudden death caused by brain and heart conditions stemming from overwork, whereas the term *karo-jisatsu* indicates suicide committed by employees suffering from depression related to overwork (Araki & Iwasaki, 2005; Kanai, 2006). In response to these developments, research has begun to focus on those aspects of the organizational context that reinforce overwork and competitiveness and disregard a healthy work–life balance, which may constitute a fertile ground for triggering workaholism (Burke & Koxsal, 2002). Indeed, workaholism is defined as a syndrome characterized by an obsession with one's work that leads employees to work excessively hard. Therefore, dedicating an extraordinary amount of time to work represents a defining component of this condition (Schaufeli, Taris, & Bakker, 2008). Workaholism has been shown to be positively associated with several indicators of overwork, such as working longer than one's contractual work hours, taking work home, and working during the weekends or holidays (Schaufeli, Taris, & Bakker, 2006). Hence, it may be argued that an organizational context that values and promotes working long hours and the willingness to sacrifice time committed to other life domains in order to attain success and career advancement, might foster workaholism.

Hence, workaholism refers to a strong inner compulsion to work excessively hard (Schaufeli et al., 2008). More specifically, it includes a behavioral

dimension (*working excessively*) as well as a cognitive dimension (*working compulsively*). Indeed, workaholics feel compelled to allocate an excessive amount of time and energy to work because they cannot resist their inner compulsion (Bakker & Schaufeli, 2008). Such workers comply with their obsession in order to prevent the tension, restlessness, and feelings of guilt and worthlessness that arise when they do not work. Therefore, person characteristics (i.e., personality traits and values) might also play a major role in engendering this obsession with work in addition to the organizational factors that emphasize a strong commitment to work (i.e., organizational culture and climate) (e.g., Burke, Burgess, & Oberklaid, 2003).

However, so far empirical investigations of the joint impact of these two kinds of antecedents of workaholism are lacking. The present study aims to fill this void by testing whether the interaction between overwork climate and individual characteristics (i.e., achievement motivation, perfectionism, conscientiousness, self-efficacy) may enhance workaholism.

## THEORETICAL BACKGROUND

The original conceptualization of workaholism was developed by Oates (1971), who defined it as an uncontrollable need to work incessantly, with consequences that may constitute a danger to one's health, personal happiness, interpersonal relations, and social functioning. Since then, several other conceptualizations of workaholism have been proposed. One of the most prominent contributions came from Spence and Robbins (1992), who proposed that "real work addicts" are characterized by high levels of *work involvement*, which lead them to work long hours, a strong inner *drive* and low *work enjoyment*.

An extensive review of the workaholism literature conducted by Scott, Moore, and Miceli (1997) argued that workaholism is grounded in three specific elements: (1) discretionary time spent in work activities; (2) persistently and frequently thinking about work when not at work; and (3) working beyond the organizational or financial requirements. A similar perspective was taken by Ng, Sorensen, and Feldman (2007), who conducted a systematic literature review and proposed an integrated description of workaholics as those who enjoy the act of working, who are obsessed by work, and who devote long hours and personal time to this activity. Taken together, these definitions of workaholism share the basic assumption that workaholics invest an excessive amount of time and energy into work because of an irresistible drive.

In line with this perspective, the present study adopts the definition of workaholism proposed by Schaufeli et al. (2008), which conceives worka-

holism as the combination of two dimensions: *working excessively* and *working compulsively*. According to this definition, *working excessively* represents the behavioral component of the construct indicating that workaholics dedicate an exceptional amount of their time and energy to work and work beyond what would be necessary to fulfill organizational or economic requirements. *Working compulsively*, on the other hand, represents the cognitive dimension of workaholism and implies that workaholics are obsessed with their work and persistently think about work, even when they are not working. Therefore, workaholics tend to work harder than is required primarily because they are driven by their inner compulsion (Bakker & Schaufeli, 2008).

### Workaholism and Person Characteristics

Compulsive behavior has been widely investigated in the field of clinical psychology, and research in this domain has found a strong relationship that links compulsive behaviors with personality traits (e.g., McCrae & Costa, 2003). This link is supported by empirical evidence that suggests workaholics are more likely to be rigid, perfectionist, and achievement-oriented than nonworkaholics (Goodman, 2006). In particular, Ng and colleagues (2007) proposed that achievement-related traits represent a major contributor to workaholism. Achievement motivation can be defined as the need to accomplish difficult objectives; to establish ambitious goals that require overcoming obstacles; to think and act quickly, thoroughly, and independently; to compete with and surpass other people by driving oneself hard; and to achieve immediate recognition and reward for one's own efforts (McClelland & Winter, 1969). Scott and colleagues (1997) identified a specific profile of workaholics, which they labeled as achievement-oriented workaholics, who are characterized by a competitive personality that promotes an intense desire for success and a strong career identity. To achieve the goals they have established for themselves, they tend to work excessively with a strong drive. Consequently, these employees are not only likely to become physically and psychologically exhausted, but such behavior may also negatively affect their relationships both within the workplace and with their families (Patel, Bowler, Bowler, & Methe, 2012).

In a similar vein, Robinson (2000) suggested a different classification for profiles of workaholism, which included relentless workaholics, a stereotypical kind of workaholic highly comparable to the achievement-oriented workaholics described above. Relentless workaholics are highly competitive and usually work long hours with the main objective of exceeding what is asked of them due to an inherent drive to work. Overall, the need to overcome

hurdles in order to succeed in accomplishing ambitious goals characterizes achievement motivation and translates into the tendency to spend considerable time and energy engaged in nonrequired work activities (Mudrack & Naughton, 2001). Indeed, achievement motivation prompts employees to spend a great deal of discretionary time on work activities, constantly thinking about work, and working beyond financial requirements (Liang & Chu, 2009).

Since the earliest conceptualizations of workaholism, perfectionism has been nominated as its main predictor. According to Oates (1971), the perfectionist nature of workaholics leads them to be merciless in their demands and scrupulous in executing their job tasks. Similarly, Scott et al. (1997) identified a specific profile of workaholics, labeled as perfectionist workaholics. These employees report an extraordinary need for orderliness, control, and a great obsession with deficits. Perfectionism is also related to workaholics' unwillingness to delegate tasks to others, essentially because the high standard for work set by perfectionists results in having great difficulty entrusting others with job responsibilities (Burke, Davis, & Flett, 2008; Killinger, 2006). Several studies have investigated the role of perfectionism in predicting workaholism, and attested that different dimensions of perfectionism influence workaholism to different degrees. Supporting this notion, Clark, Lelchhook, and Taylor (2010) found that the perceived gap between an employee's performance expectations and the self-evaluation of current performance represents a driving force behind workaholic behaviors. In contrast, in their study of the relationship between perfectionism and workaholism, Taris, van Beek, and Schaufeli (2010) distinguished between self-directed and socially prescribed forms of perfectionism, defined as high personal standards and concern over mistakes respectively, and showed that particularly socially prescribed perfectionism is associated with workaholism. More recently, by assuming it to be a unitary individual characteristic, Bovornusvakool, Vodanovich, Ariyabuddhipongs, and Sakkaphat (2012) identified perfectionism as a key factor in the development of workaholic behavior patterns. In addition, these authors suggested that workaholism may represent a socially acceptable opportunity for employees to enact their perfectionist inclinations. In work environments, employees who strive for perfection and thereby focus all their energy and attention on work projects are often rewarded with compensation and praise.

Other studies suggest that workaholism is associated with conscientiousness, a personality trait entailing a sense of duty and responsibility, industriousness, and perseverance (Bozionelos, 2004). This person characteristic is related to higher levels of self-control and the active process of planning, organizing, and carrying out tasks (Barrick & Mount, 1991). Given the perseverance displayed by conscientious employees and their tendency to formulate and implement purposeful plans, several empirical studies have

reported a strong correlation between conscientiousness and job performance (e.g., Barrick, Mount, & Strauss, 1993). Based on these findings, several authors point out that conscientiousness may be conceived as a key individual characteristic leading to workaholism (Liang & Chu, 2009). This is supported by the results obtained from different studies aimed at assessing the role of conscientiousness as an antecedent of workaholism. These studies used the so-called workaholic triad developed by Spence and Robbins (1992), which defines workaholism as constituted by *high work involvement*, *strong drive to work*, and *low work enjoyment*, and concluded that conscientiousness is positively associated with all three of these dimensions (Andreassen, Hetland, & Pallesen, 2010; Aziz & Tronzo, 2011). Along the same path, another investigation based on the same model of workaholism indicated that employees characterized by a greater degree of conscientiousness report higher levels of drive (Burke, Matthiesen, & Pallesen, 2006). This evidence is particularly relevant for establishing the link between conscientiousness and workaholism, since drive describes the inner compulsion that propels workaholics to work excessively hard. On the whole, being self-disciplined, reliable, and orderly may play a central role in predisposing employees toward workaholism (Andreassen et al., 2010). According to Bandura (1977), self-efficacy refers to the extent to which individuals believe in their own capabilities to organize and implement the courses of action required in order to achieve a given result. Based on the evidence that individuals scoring higher on generalized self-efficacy report greater levels of commitment to their work, Burke et al. (2006) assessed how generalized self-efficacy affects workaholism as conceived by Spence and Robbins (1992) and showed that higher levels of self-efficacy are related to a greater degree of workaholism. Del Líbano, Llorens, Salanova, and Schaufeli (2012) expanded on this result by testing the relationship between work self-efficacy and workaholism. The authors used specific measures of self-efficacy, which show more consistent and robust relationships with psychosocial health variables (Bandura, 2001), and found a mediating role of workaholism in the relationship between self-efficacy and negative outcomes (i.e., overwork and work/family conflict). This is consistent with the findings of Ng et al. (2007), who showed that those individuals who report higher levels of self-efficacy in work activities than in nonwork activities are more likely to become workaholics. The belief of being better able to handle work tasks rather than extrawork activities may lead such employees to devote as much time as they can to work activities in order to avoid nonwork activities at which they are less skilled. Taken together, these empirical findings suggest that achievement motivation, perfectionism, conscientiousness and self-efficacy significantly predispose employees toward becoming workaholics.

However, recent perspectives on work addiction suggest that organizational factors play a significant role in the development and mainte-



nance of workaholism. Therefore, great attention has been paid to the workplace practices and policies that may act as drivers of workaholism (Fry & Cohen, 2009). In this vein, Ng and colleagues (2007) proposed a theoretical model that conceives workaholism as the combined result of dispositional traits (e.g., needs, traits, values), sociocultural experiences (e.g., social learning, cultural emphasis on competence and competition), and behavioral reinforcements (e.g., organizational rewards and incentive systems). They suggested that employees are likely to become workaholics when they possess certain personality traits, their social environment facilitates workaholism, and their workaholic behaviors are systematically reinforced. Similarly, Liang and Chu (2009) developed a model that identifies three major antecedents of workaholism: personality traits, personal inducements, and organizational inducements. Once again, this explanation of workaholism assigns a crucial role to those organizational environments that prompt or oblige employees to work hard and recognizes the combination of personal and environmental conditions as a key antecedent in determining the manifestation of workaholism. Hence, organizations may unintentionally act as the “pushers” or “enablers” that encourage workaholic behaviors (Holland, 2008).

### Workaholism and the Work Environment

Workaholism has been suggested to be particularly prevalent in those work environments characterized by a masculine culture that encourages employees to be extremely competitive, power-hungry, task-oriented, and fearful of failure (Ng et al., 2007). This type of culture is likely to have a “winner takes all” or “star” reward system that may compensate for and promote workaholic behavior by setting fewer limits on excessive work habits. As a result, employees who work long hours are perceived to be highly committed and capable of competing with peers for rewards, recognition, and career development opportunities (Burke, 2001). In a similar vein, using the workaholic triad proposed by Spence and Robbins (1992); Johnstone and Johnston (2005) found that employees who perceive an organizational climate characterized by strong *work pressure* display higher levels of *drive* (i.e., the inner compulsion that prompts workaholics to work incessantly). This evidence provides additional support for the hypothesis that the perception of a work environment characterized by high work demands and time pressure encourages employees to devote an extraordinary amount of time and energy to their organization and fosters workaholism. Therefore, organizational climate seems to contribute significantly in enhancing workaholism.

Organizational culture and climate represent two complementary constructs that show overlapping yet distinct features in the psychological life of the organization (Schneider, 2000). Organizational *culture* implies a set of shared meanings on core values, beliefs, underlying ideologies and assumptions of organizational life taught to newcomers as the proper way to think and based on stories, myths, and socialization experiences (Schein, 2010).

On the other hand, organizational *climate* represents the shared perceptions of and meaning employees attach to the policies, practices, and procedures they experience and the behaviors they observe being rewarded and that are supported and expected (Schneider, Ehrhart, & Macey, 2013). Hence, organizational culture refers to fundamental assumptions about the organization, and it has strong roots in history, meaning that it is unchanging in nature, resistant to manipulation, and collectively held (Denison, 1996; Schein, 2010).

By contrast, organizational climate is more “immediate” and subjective in nature, since it is grounded in employees’ perceptions of their organization in terms of practices, policies, procedures, routines, and rewards (Schneider et al., 2013).

Beyond these core differences, culture and climate are closely related since the set of practices, policies, and procedures perceived by organizational members as climate reflect the underlying cultural values (Ostroff, Kinicki, & Tamkins, 2003). In this sense, climate should be conceived as the surface-level manifestation of culture (Schein, 1990). Moreover, the perception of an overwork climate is endorsed by the presence of executives and supervisors who encourage overtime work and expect employees to comply with it. This means that management conveys the message that working excessively represents desired behavior (Van Wijhe, Schaufeli, & Peeters, 2010). Indeed, researchers have long recognized the important role of organization leaders in the emergence of and consensus about climate perceptions (Ostroff et al., 2003). Managers and supervisors contribute to the development of common climate perceptions by exposing employees to the same policies, practices, and procedures, thus providing them with directions to where they should focus their skills and efforts on in order to attain organizational goals (Schneider, Gunnarson, & Niles-Jolly, 1994). In line with this theoretical perspective, workaholism may be fostered when employees perceive that working beyond set work hours, taking work home, and working during weekends or holidays are considered to be indispensable conditions for success and career advancement. In the current study, employees’ combined perceptions of these underlying values in their work environment is described by the term *overwork climate*.

The findings discussed above suggest that this particular organizational climate may foster workaholism, especially among those employees who possess the individual characteristics identified in the previous section.



Therefore, the present research is aimed to explore the interaction effect between overwork climate and person characteristics (achievement motivation, perfectionism, conscientiousness, self-efficacy) on workaholism. To the best of our knowledge, our study represents one of the first attempts to test the joint impact of environmental and individual antecedents of workaholism. Because person characteristics are, by nature, assumed to be rather stable over time, they act as moderators that amplify the impact of overwork climate on workaholism.

The following four hypotheses are tested in our study:

*Hypothesis 1:* Achievement motivation moderates the relationship between overwork climate and workaholism. We expect that employees exposed to a greater overwork climate are more workaholic if they are characterized by higher levels of achievement motivation.

*Hypothesis 2:* Perfectionism moderates the relationship between overwork climate and workaholism. The occurrence of workaholism is expected to be higher when employees working in organizations characterized by an overwork climate report higher levels of perfectionism.

*Hypothesis 3:* Conscientiousness moderates the relationship between overwork climate and workaholism. We hypothesize that the positive association between overwork climate and workaholism is greater for employees characterized by higher conscientiousness.

*Hypothesis 4:* Self-efficacy moderates the relationship between overwork climate and workaholism. We expect that overwork climate results in higher levels of workaholism for employees that have high levels of self-efficacy.

## THE CONTEXT OF THE STUDY

The study has been carried out in the Netherlands, which is an individualistic, western European country where employees place greater emphasis on personal goals and personal achievement (Hofstede, 2001). In such individualistic countries the need to work hard tends to be self-centered, in contrast to eastern collectivistic societies where working hard is fuelled by group-centered motives (Snir & Harpaz, 2012). The annual number of working hours in the Netherlands is rather low (1,181 hours), particularly because of widespread part-time jobs, notably for women. In the U.S.A., employees work on average 1,790 hours per year, which comes very close to

the average of 1,785 hours for all OECD countries. But a study among a representative sample of Dutch employees found that 62% worked overtime, with 20% working overtime for more than 10 hours per week (Beckers et al., 2007). Despite the relatively low number of working hours, levels of workaholism among Dutch employees are comparable to those in Japan (Schaufeli, Shimazu, & Taris, 2009), a country known for *karoshi* or work to death (Kanai, 2006).

## METHOD

### Procedure and Participants

Participants were recruited through an advertisement in an electronic newsletter of a Dutch training and consultancy agency. Subscribers to the newsletter received background information about the general aim of the study and they were invited to follow the link that allowed them to fill out an online questionnaire. In the introduction to the survey, participant anonymity was emphasized and confidentiality guaranteed. After completion, participants received an automatically generated individual report based on their questionnaire results. A total of 686 employees filled out the questionnaire.

Since the sample might be contaminated if it contained highly engaged employees who also work very hard, they were removed from the sample. Work engagement is defined as a positive, fulfilling, work-related state of mind that consists of three interrelated dimensions: vigor, dedication, and absorption (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). A recent study showed the existence of a specific group of hard workers, called *engaged workaholics* (van Beek, Taris, & Schaufeli, 2011). These employees score highly both on workaholism as well as on work engagement, meaning that they work harder than those recognized as being either only workaholic or engaged, while their levels of engagement seem to act as a buffer against the negative consequences of workaholism. Because the present research investigates the interaction effects between the organizational and individual antecedents of workaholism, we decided to eliminate the overlap between work engagement and workaholism by excluding highly engaged employees from our sample. Hence, we considered only employees having an engagement score lower than 3.74, which represents the average total score of the Dutch normative sample ( $N = 9,679$ ; Schaufeli & Bakker, 2004) of the Utrecht Work Engagement Scale (UWES 9; Schaufeli, Bakker, & Salanova, 2006).

The final sample of the study included 333 participants. The majority were women (51.4%) and the mean age of the sample was 45.4 years ( $SD =$

8.45). Participants were Dutch employees from a wide range of companies and occupations, such as managers (26.1%), consultants (13.8%), HR officers or consultants (6%), project leaders/project managers (5.1%), and trainers/coaches (3.6%). Regarding educational level, 82.6% of respondents had a university or college degree, while the remaining participants were primary or secondary education graduates. The majority of the sample had a permanent job (89.5%) and worked full-time (63.7%); the mean period of employment was 12.02 years ( $SD = 8.65$ ).

### Measures

*Overwork climate* was assessed using a scale developed for the purposes of this study; it included eight items with a 5-point answering format (see [Appendix](#)). This scale evaluated to what extent employees perceive their work environments to be characterized by a climate that expects them to perform overwork (i.e., working beyond set work hours, doing unpaid overtime work, taking work home, and working during weekends or holidays) in order to complete their work and achieve career advancement, financial benefits, or other kinds of perks. The factor structure of this scale was tested using confirmatory factor analysis (CFA), which showed the following fit indices:  $\chi^2/df = 2.92$ , CFI = .97; AGFI = .94; and RMSEA = .06. Factor loadings ranged from .43 to .78 and these were significant at  $p < .01$ . For the Cronbach's  $\alpha$ s of the scales, see [Table 1](#).

*Achievement motivation* was measured by using 10 items (e.g., "Do you tend to plan ahead for your job or career?"—reversed) taken from the short version of the Ray Achievement Motivation scale ([Ray, 1979](#)). Responses were 1 (*yes*), 2 (*neither no nor yes*), or 3 (*no*). Overall, a higher overall score on this scale corresponded to a greater level of achievement motivation.

*Perfectionism* was assessed using a self-constructed scale that included eight work-related items (e.g., "I strive to do my work perfectly") and it was scored using a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). This scale aims to assess a specific facet of perfectionism, namely *positive perfectionism*, as defined by [Frost, Heimberg, Holt, Mattia, and Neubauer \(1993\)](#). According to these authors, positive perfectionism entails behavior that refers to a willingness to approach stimuli, and to strive in order to achieve high standards. From a behaviorist perspective, these perfectionist behaviors are positively reinforced through praise, recognition, and feelings of accomplishment. This sense of pleasure in achieving one's goals generates positive affect, an enhanced self-esteem and self-satisfaction. The adequacy of the unidimensional factor structure was confirmed by CFA:  $\chi^2/df = 2.43$ ; CFI = .95; AGFI = .94; and RMSEA = .07. Factor loadings ranged from .32 to .72 and these were significant at  $p < .01$ .

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**Table 1.** Means, Standard Deviation, Cronbach's Alphas (in Brackets), and Correlations Among the Study Variables (N = 333)

Variable	M	SD	<i>I</i>	2	3	4	5	6	7	8	9
1. Gender (1 = female)	.51	.50	n.a.								
2. Age	45.4	8.45	-.23 <sup>***</sup>	n.a.							
3. Educational level (1 = higher education)	.83	.38	-.04	-.04	n.a.						
4. Overwork climate	2.40	.71	-.07	-.04	.12*	(.85)					
5. Achievement motivation	2.15	.38	.08	-.22 <sup>***</sup>	.16 <sup>**</sup>	.15 <sup>**</sup>	(.60)				
6. Perfectionism	3.32	.54	.13*	-.09	-.19 <sup>***</sup>	.10	.11*	(.75)			
7. Conscientiousness	3.71	.43	.11	.09	-.07	-.19 <sup>**</sup>	.18 <sup>***</sup>	.38 <sup>***</sup>	(.72)		
8. Self-efficacy	3.72	.37	-.12*	-.09	.06	.06	.18 <sup>**</sup>	-.07 <sup>**</sup>	.11*	(.64)	
9. Workaholism	2.07	.48	.03	-.18 <sup>**</sup>	.06	.29 <sup>***</sup>	.26 <sup>***</sup>	.21 <sup>***</sup>	-.07 <sup>**</sup>	-.01	(.82)

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

*Conscientiousness* was assessed by using the Conscientiousness Scale taken from the Dutch translation of the Big Five Inventory (Denissen, Geenen, Van Aken, Gosling, & Potter, 2008). This scale consisted of nine items (e.g., “At work, I persevere until the task is finished”) rated on a 5-point Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

*Self-efficacy* was assessed by using a self-constructed scale based on Bandura (2012) and composed of five items. All items (e.g., “At work, I reach my goal, even when unexpected situations arise”) were scored on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). The CFA results showed the following fit indices:  $\chi^2/df = 1.79$ ; CFI = .98; AGFI = .97; and RMSEA = .05. Factor loadings ranged from .41 to .65 and these were significant at  $p < .01$ .

*Workaholism* was measured using the 10-item Dutch Work Addiction Scale (DUWAS; Schaufeli, Bakker, Van der Heijden, & Prins, 2009) that included two subscales: Working Compulsively (e.g., “I feel that there’s something inside me that drives me to work hard”) and Working Excessively (e.g., “I seem to be in a hurry and racing against the clock”). Both subscales consisted of five items rated on a 4-point frequency scale ranging from 1 ([*almost*] *never*) to 4 ([*almost*] *always*). Accepting the definition of workaholism as a syndrome, the present study is based on an overall workaholism score (Schaufeli, Bakker et al., 2009).

### Strategy of Analysis

Our hypotheses were tested using moderated regression analyses, implemented in PROCESS macro for SPSS 18.0 developed by Hayes (2013). It is important to note that this macro does not test the product terms hierarchically, but rather simultaneously together with the main effects. This is not a limitation, however, as Edwards (2009) argued that product terms do not have to be tested hierarchically in moderated regression analyses. In addition to estimating the moderation effects, the conditional effect of the independent variable on the dependent variable at specific values of the moderator was tested (by default, at mean, 1 *SD* above the mean, and 1 *SD* below the mean). In line with our hypotheses, the interaction effects were tested separately for each person characteristic. In addition, as evidence of relationships between sociodemographic characteristics and workaholism has been suggested by previous research (e.g., Burgess, Burke, & Oberklaid, 2006; Taris, van Beek, & Schaufeli, 2012), gender, age, and educational level were included as covariates in the moderation models.

## RESULTS

### Descriptive Results

The means, standard deviations, correlations, and internal consistencies (Cronbach's alpha) were calculated for all study variables (see Table 1). All significant relationships between the variables were in the expected direction. Moreover, as shown in Table 1, the internal consistencies of the scores on all scales satisfied the criterion of .70 (Nunnally & Bernstein, 1994), except for the achievement motivation and self-efficacy scales, which showed slightly lower values ( $\alpha = .60$  and  $\alpha = .64$ , respectively).

### Control Variables

Each model featured the variable overwork climate as the predictor, workaholism as the dependent, and person characteristics as the moderator. As mentioned earlier, gender, age, and educational level were additionally included as covariates. As shown in Table 2, age negatively affected workaholism in each moderation model. This result is consistent with the negative correlation between age and workaholism ( $r = -.18, p < .01$ ) displayed in Table 1. Thus, in line with previous studies, in our sample lower levels of workaholism were reported for older employees. Furthermore, our results would suggest that education and gender were not significantly related to workaholism.

### Interaction Effects Between Overwork Climate and Person Characteristics

The first model tested whether achievement motivation moderated the relationship between an overwork climate and workaholism (Hypothesis 1). As reported in Table 2, the overall model,  $F(6, 326) = 10.94, p < .001$ , showed a significant main effect for overwork climate ( $\beta = .26, p < .001$ ) and achievement motivation ( $\beta = .19, p < .001$ ). Most relevant to Hypothesis 1, the interaction between overwork climate and achievement motivation was significant:  $\beta = .13, p < .05$ . Consistent with our expectations, employees exposed to a greater overwork climate in their workplaces are more workaholic if they are characterized by higher levels of achievement motivation (see Figure 1). These findings supported Hypothesis 1.

In the second model, perfectionism was hypothesized to influence the strength of the relationship between overwork climate and workaholism (Hypothesis 2). Once again, the overall model,  $F(6, 326) = 10.45, p < .001$ ,



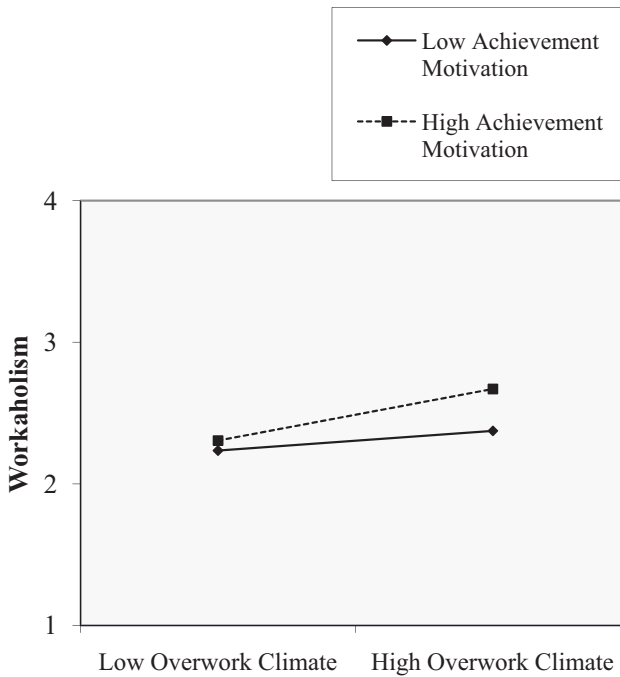
**Table 2.** Results of Moderated Regression Analyses

	<i>Workaholism</i>			
	<b>B</b>	<b>β</b>	<i>SE</i>	<b>ΔR<sup>2</sup></b>
<b>Main effects</b>				
Gender (1 = female)	.03	.03	.05	
Age	-.01*	-.13	.00	
Educational level (1 = higher education)	-.02	-.02	.06	
Overwork climate	.18***	.26	.03	
Achievement motivation	.24***	.19	.07	
<b>Interaction effects</b>				
Overwork climate × Achievement motivation	.21*	.13	.08	.02*
<b>Main effects</b>				
Gender (1 = female)	.01	.01	.05	
Age	-.01**	-.15	.00	
Educational level (1 = higher education)	.04	.03	.07	
Overwork climate	.18***	.26	.03	
Perfectionism	.16***	.18	.05	
<b>Interaction effects</b>				
Overwork climate × Perfectionism	.16*	.13	.06	.02*
<b>Main effects</b>				
Gender (1 = female)	.03	.04	.05	
Age	-.01**	-.17	.00	
Educational level (1 = higher education)	.02	.01	.07	
Overwork climate	.19***	.29	.04	
Conscientiousness	.01	.01	.06	
<b>Interaction effects</b>				
Overwork climate × Conscientiousness	.21**	.15	.08	.02**
<b>Main effects</b>				
Gender (1 = female)	.02	.03	.05	
Age	-.01**	-.16	.00	
Educational level (1 = higher education)	.01	.01	.07	
Overwork climate	.19***	.29	.03	
Self-efficacy	-.03	-.02	.07	
<b>Interaction effects</b>				
Overwork climate × Self-efficacy	.21*	.13	.08	.02*

*Note.* *N* = 333. All variables were mean-centered.  
 \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

was statistically significant. The main effects for overwork climate ( $\beta = .26, p < .001$ ) and perfectionism ( $\beta = .18, p < .001$ ) were significant as was the interaction between them ( $\beta = .13, p < .05$ ). Consistent with Hypothesis 2, for employees working in organizations characterized by a strong overwork climate, the occurrence of workaholism is higher when they are perfectionists (see Figure 2). Therefore, Hypothesis 2 was supported.

The third model included conscientiousness as a moderator between overwork climate and workaholism (Hypothesis 3). The main effect for overwork climate was significant ( $\beta = .29, p < .001$ ), but conscientiousness did not significantly relate to workaholism (*ns*). Nonetheless, conscientiousness seemed to influence the strength of the relationship be-



**Figure 1.** Interaction effect between overwork climate and achievement motivation on workaholism.

tween overwork climate and workaholism ( $\beta = .15, p < .01$ ), and the overall model was significant,  $F(6, 326) = 8.61, p < .001$ . As shown in Figure 3, the positive relationship between conscientiousness and workaholism in our sample only becomes significant when this person characteristic is associated with a strong overwork climate. These results supported Hypothesis 3.

Finally, we tested how the interaction between an overwork climate and self-efficacy impacts on workaholism (Hypothesis 4). Consistent with the previous results, the overall model was significant,  $F(6, 326) = 8.30, p < .001$ , as was the main effect of an overwork climate on workaholism ( $\beta = .29, p < .001$ ). By contrast, self-efficacy did not influence workaholism (*ns*), but the interaction between the overwork climate and self-efficacy was significant ( $\beta = .13, p < .05$ ). Hence, employees characterized by high levels of self-efficacy and who are exposed to an overwork climate display a higher degree of workaholism than those characterized by a low degree of self-efficacy and working in an overwork climate (see Figure 4). Hence, these results supported Hypothesis 4.

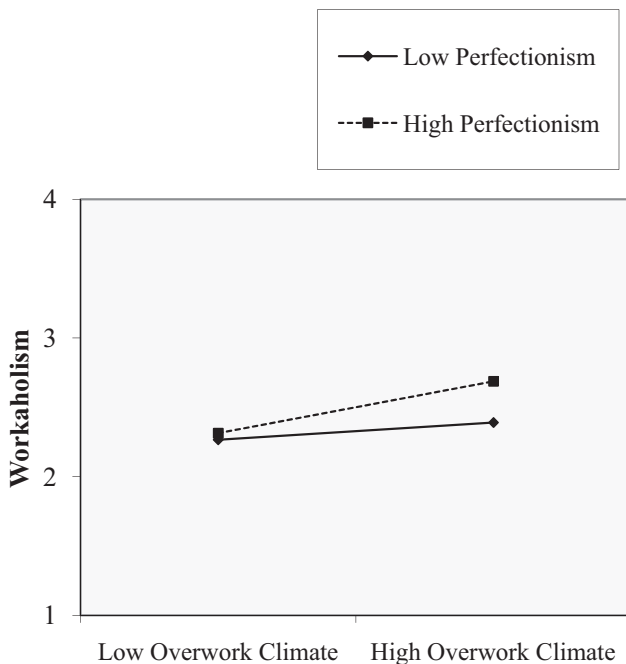
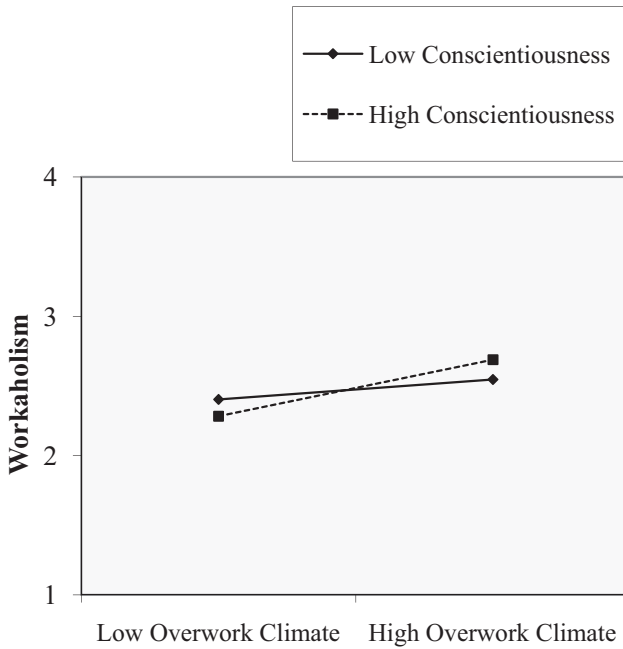


Figure 2. Interaction effect of overwork climate and perfectionism on workaholism.

### DISCUSSION

Drawing on data from 333 Dutch employees, the present results fully supported the hypotheses of an interaction effect between overwork climate and person characteristics in fostering workaholism. Our findings provide initial evidence of the presence of a positive relationship between overwork climate and workaholism, defined as the combination of working excessively and compulsively, especially for employees who displayed high levels of achievement motivation, perfectionism, conscientiousness, and self-efficacy. Among these person characteristics, achievement motivation and perfectionism were significantly associated with workaholism.

By contrast, the main effects of conscientiousness and self-efficacy on workaholism were not significant, although the interaction between these two characteristics and overwork climate fostered workaholism significantly. Therefore, contrary to previous empirical findings suggesting that conscientiousness and self-efficacy are dispositional antecedents of workaholism (e.g., Aziz & Tronzo, 2011; Del Libano et al., 2012), our results indicated that these person characteristics contribute to the development of obsession with work only when employees perceived an overwork climate. To be



**Figure 3.** Interaction effect of overwork climate and conscientiousness on workaholism.

precise, the interactions between conscientiousness and overwork climate on the one hand, and between self-efficacy and overwork climate on the other hand, were disordinal. Therefore, it may be concluded that, when no overwork climate exists, employees characterized by a low degree of conscientiousness were more likely to be workaholic than employees that have high levels of conscientiousness. This suggests that conscientiousness does not inherently act as an antecedent of workaholism; rather low levels of conscientiousness seem to foster workaholism when no overwork climate is perceived, whereas high levels of conscientiousness seem to foster workaholism when an overwork climate is perceived. As displayed in Figure 3, high levels of conscientiousness exert a stronger impact on workaholism across different organizational climates (i.e., a low or high overwork climate); in contrast, a low degree of conscientiousness does not engender a substantial variation in workaholism as the organizational climate changes. A similar pattern was found regarding the interaction between overwork climate and self-efficacy. Overall, and as hypothesized, a significant increase in workaholism was observed when employees possessed characteristics that predispose them toward becoming workaholics and when they perceived the presence of an overwork climate in their workplaces. As previously stated, empirical investigations on the joint impact of these different antecedents of workaholism

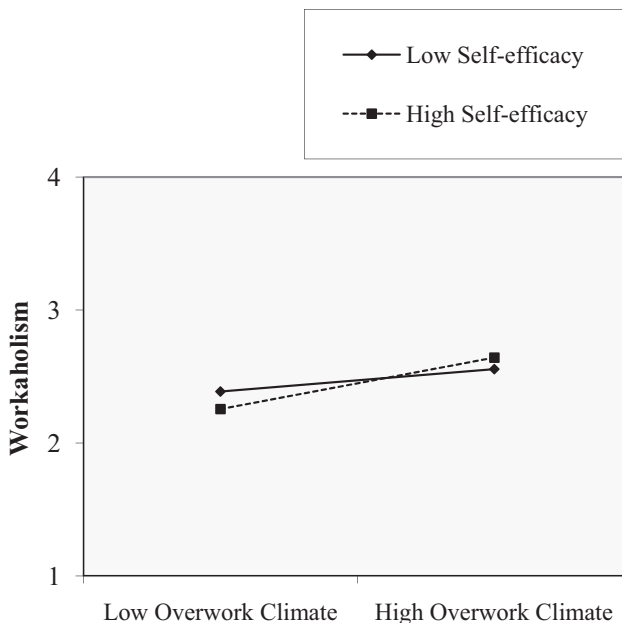


Figure 4. Interaction effect of overwork climate and self-efficacy on workaholism.

are lacking. The current study represents a first step toward a deeper understanding of the interaction between individual and environmental factors in fostering addiction to work.

However, it could be argued that employees with person characteristics that make them prone to workaholism are not influenced by the environment but instead these person characteristics may have led them to seek organizational contexts matching with their compulsion. The assumption that workaholics may be attracted to certain organizations is consistent with Attraction-Selection-Attrition theory (Schneider, 1987; Schneider, Goldstein, & Smith, 1995), which claims that different types of organizations attract, select, and retain different types of people. Hence, some individuals choose to work for organizations that correspond to their own traits and values (Burke, 2001). Following this lead, Porter (1996) focused on those organizational cultures that required employees to perform overwork in order to achieve success and advancement, and argued that the processes of self-selection, employee recruitment, socialization, and reward systems could forge a context in which workaholics are more likely to display their compulsive behavior than in other organizations. Further to this conclusion, the results of the present study showed not only that overwork climate is positively related to workaholism and that the interaction between this type of organizational climate and person characteristics fosters workaholism, but

also that conscientiousness and self-efficacy foster workaholism only in association with the presence of an overwork climate. Therefore, interventions aimed at modifying the work environment, in particular the organizational climate, could considerably reduce the level of workaholism among employees.

The present findings support the hypothesis that, compared with employees characterized by similar workaholic traits, those exposed to behavioral reinforcements in the workplace (e.g., an organizational climate that, to a certain extent, sustains workaholism) might display a greater degree of workaholism (Liang & Chu, 2009; Ng et al., 2007). This theoretical perspective on workaholism agrees with the findings of McMillan, O'Driscoll, and Burke (2003), who suggested that a combination of trait and learning theories provides the most promising potential for future research on workaholism: in particular, trait-based theory has received broad empirical support, and learning theory offers the most convincing scientific utility. Trait-based theory recognizes workaholism as a stable behavioral pattern that is dispositional in nature; it first emerges in late adolescence and is exacerbated by environmental stimuli. By contrast, learning theory is characterized by generality, parsimony, and pragmatism and presents a practicable basis for explaining workaholism. From an operant learning perspective, it may be concluded that the behavioral dimension of workaholism, namely working excessively, represents a desired behavior within the organization that is likely to be associated with continuous reinforcements (e.g., tangible rewards such as promotions, bonuses, fringe benefits, or salary increases).

The present research should be seen as an initial attempt to connect trait and learning perspectives on workaholism, by simultaneously considering person characteristics (achievement motivation, perfectionism, conscientiousness, self-efficacy) and the role of the environment (i.e., overwork climate).

### Study Limitations

This study has some limitations that should be acknowledged. The first limitation concerns the use of self-constructed scales. Although the psychometric properties of these measures were satisfactory on the whole, further studies could explore the same hypotheses by using well-validated instruments for assessing these constructs.

Second, all data were cross-sectional. This means that conclusions about causality could not unequivocally be drawn. Further research using a longitudinal design will be needed to further unravel and understand the causal relationships among overwork climate, person characteristics and workaholism.



Third, data were derived entirely from self-reported questionnaires; therefore, common method variance may have influenced our results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Future research should adopt a multimethod approach, combining self-reported and objective data, or data from more than one source (e.g., peer ratings from colleagues) in order to obtain more robust evidence.

Moreover, the scales used to assess achievement motivation and self-efficacy had a reliability coefficient slightly lower than the criterion of .70, which is traditionally considered as a heuristic (Nunnally & Bernstein, 1994). However, according to Nunnally's (1967) recommendation, scales with item consistencies higher than .60 can be used for research purposes. It would be appropriate in the future to increase the number of items in order to improve the psychometric properties of these instruments.

Finally, self-selection may have been a limitation. Indeed, the use of the Internet as a research tool has certain advantages, but also disadvantages. Online surveys have been criticized with regard to their representativeness (e.g., Couper, Kapteyn, Schonlau, & Winter, 2007). In general, respondents to online surveys are more likely to be younger and male than participants usually contacted through telephone surveys (Schmidt, 1997). However, the majority of participants in the present study were women and the average age was quite high. Moreover, whereas many stress-related studies are biased toward a specific group or occupation, the present research used data collected from employees working in a wide range of occupations and organizations.

### Practical Implications

Although the above-mentioned limitations of the present study render it an initial exploration of the multicausal nature of workaholism, our results could have implications for designing effective interventions that may prevent the fostering and exacerbation of workaholism. Overall, the present study suggests that workaholism is most likely to occur when person characteristics interact with a specific organizational climate. Given the very limited opportunities to influence person characteristics that predispose employees toward workaholism (i.e., achievement motivation, perfectionism, conscientiousness, self-efficacy), it might be more worthwhile for organizations to create an environment that does not reward compulsive work-related behavior. Organizational climate results from practices, policies, and procedures expected and rewarded in the workplace. As a consequence, an effective change in climate can be achieved only through a modification of these practices, which, in turn, may initiate a reinterpretation of organizational goals and expectations (Kopelman, Brief, & Guzzo, 1990).

Furthermore, managers and executives play a significant role in creating and maintaining the organizational climate, mainly because their behavior is relevant for employees to identify organizational goals and shape the prevailing climate (Dragoni, 2005). Therefore, an effective intervention to discourage workaholism by changing the organizational climate would only be successful when management acts as a role model, for instance by displaying work behaviors that favor a healthy work–life balance and minimize overwork (Van Wijhe et al., 2010). This way, management contributes to creating a climate that is not conducive to workaholism. This is particularly salient given the evidence that managers are often workaholic themselves and have gained professional advancement because of their tendency to work hard and compulsively (Brett & Stroh, 2003). Their contributions to organizational change are crucial because they implement shared practices through their behavior, communication, and interactions with employees (Ostroff et al., 2003).

As mentioned earlier, climate and culture are closely related constructs since climate can be conceived as the result of shared perceptions of enacted values and priorities within the organization, which represent the core elements of organizational culture (Zohar & Hofmann, 2012). Consequently, the successful modification of organizational climate may spur reinterpretations of culture (Ostroff et al., 2003). Therefore, an intervention to change or replace a climate that supports overwork may result in the reinterpretation of the culture and lead employees to perceive that their organization emphasizes the relevance of an adequate work–life balance and would stimulate working smarter rather than harder.

At first glance, it may seem as though workaholics attempt to give more of themselves to support organizational objectives, leading them to be frequently rewarded for their frantic work behavior in the workplace. The most obvious characteristic of workaholics is their tendency to display a great level of dedication to their jobs and to devote much more time to their work than others do (e.g., Burke & Fiksenbaum, 2009). Actually, these employees may compromise organizational goals in subtle ways in order to maintain or increase their need for more work (Porter, 2001). Hence, a crucial goal for organizations is finding ways to assist employees to perform work more efficiently. Indeed, the occurrence of workaholism may be prevented if employees are exposed to an organizational environment that provides positive feedback for efficient work based on more productive time management strategies (Holland, 2008). Therefore, effective interventions for workaholism require organizations and their representatives (i.e., managers, supervisors) not to encourage the appearance of productivity given by the extraordinary amount of time expended on work, but rather to promote the creation of a climate that allows employees to perform well and reach productive outputs, but also enjoy nonwork activities.

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Appendix

Overwork Climate, Perfectionism and Self-efficacy scales

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Previously unpublished scales are shown below. All measures used a Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

**Overwork Climate**

In my workplace . . .

1. Performing overwork is important to be promoted.
2. It is considered normal to work on weekends.
3. Most employees work beyond their official work hours.
4. It is considered normal for employees to take their work home.
5. Almost everybody expects employees to perform unpaid overtime work.
6. It is difficult to take a day off or paid holidays.
7. Management encourages overtime work.
8. Working overtime is appreciated by management.

**Perfectionism**

1. I am extremely meticulous.
2. I hate sloppy colleagues.
3. I often proofread the final versions of my colleagues' work.
4. My suggestions must be applied exactly as I say.
5. In your work, you should also pay attention to detail.

(Appendix continues)

6. I strive to do my work perfectly.
7. Sometimes, I do my work too well.
8. I'm not easily satisfied with the results of my work.

### **Self-Efficacy**

1. If there are difficult problems at work, I know how to solve them.
2. At work I reach my goal even when unexpected situations arise.
3. If I encounter obstacles at work, I always find a way to overcome them.
4. Even if it takes me a lot of time and energy, I reach my goals at work.
5. If something new comes to me at work, I always know how to deal with it.

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