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ORIGINAL PAPER

Fear of Being Exposed: The Trait-Relatedness of the Impostor Phenomenon and its Relevance in the Work Context

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Abstract
Purpose The impostor phenomenon (IP) refers to the intense feelings of intellectual fraudulence, often experienced by high-achieving individuals. The purpose of this study is threefold: (1) examine the trait-relatedness of the IP; (2) investigate the potential impact of impostor tendencies on relevant work attitudes (i.e., job satisfaction and organizational commitment) and organizational citizenship behavior (OCB); and (3) explore whether workplace social support can buffer the potential harmful effects of impostor tendencies.
Design/methodology/approach Belgian employees (N = 201) from three different sectors participated in a cross-sectional survey study.
Findings Hierarchical regressions revealed that Big Five personality traits, core self-evaluations, and maladaptive perfectionism explain large proportions of the variance in impostor tendencies ($\Delta R^2 = .59$). A relative weight analysis indicated self-efficacy as the most important predictor, followed by maladaptive perfectionism and Neuroticism. Further, results showed that employees with stronger impostor tendencies indicate lower levels of job satisfaction and OCB, and higher levels of continuance commitment. However, workplace social support buffered the negative effects of impostor tendencies on job satisfaction and OCB.
Implications Employees hampered by impostor tendencies could benefit from coaching programs that focus on the enhancement of self-efficacy and the alleviation of maladaptive perfectionistic concerns. Impostor tendencies have an impact on career attitudes and organizational behavior. Extra attention could be devoted to the assessment of this specific trait constellation in selection or development contexts. Interventions designed to increase social support are particularly relevant in this regard.
Originality/value Despite its relevance for contemporary work settings, the IP has barely been investigated in adult working samples.

Keywords Impostor phenomenon · Personality · Job satisfaction · Organizational citizenship behavior · Organizational commitment · Workplace social support

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Introduction

> *"Bluffing" their way through life – as they see it –, they are haunted by the constant fear of exposure. With every success, they think, "I was lucky this time, fooling everyone, but will my luck hold? When will people discover that I'm not up to the job?"* (Kets de Vries 2005, p. 110)

Under the influence of positive psychology, the 'bright side' of employees and their behavior at work have dominated applied research in the past decades. However, in the past few years, the industrial/organizational (I/O) psychology literature has witnessed an increased attention for the 'dark side' of behavior at work as well, including studies on leadership derailment (e.g., Kaiser and Hogan 2011), the 'dark triad' (O'Boyle et al. 2012), and aberrant personality tendencies (Wille et al. 2013). It is in this context of dysfunctional or maladaptive patterns of employee feelings, thoughts, and behaviors that the impostor phenomenon (IP) can be brought to the fore. The IP was first introduced by Clance and Imes (1978) to describe the intense feelings of intellectual and professional fraudulence, experienced by high-achieving individuals. Despite the accumulation of objective evidence suggesting the contrary, such as remarkable academic achievements and a successful career history, these persons are unable to internalize and accept successful experiences. Individuals experiencing impostor tendencies are convinced that others overestimate their capacities and will eventually discover that they are not truly efficacious but go through life as 'impostors.' As a consequence, they are haunted by the perpetual fear of being exposed as incompetent. Further, they have persisting doubts of their own abilities, and repeated successful experiences fail to weaken these feelings of fraud (cf. the 'impostor cycle'; Clance 1985).

Clearly, the IP may have detrimental effects on people's personal well-being, inducing feelings of depression (e.g., McGregor et al. 2008) and overall poorer mental health (Sonnak and Towell 2001). Moreover, impostor tendencies may be detrimental for people's potential for career advancement, for example, by acting as an internal barrier to move up to a more senior level (Kets de Vries 2005). However, to date, the IP is still poorly understood, despite its potential relevance in contemporary work settings. For instance, data from the Global Workforce Study (Towers Watson 2012), covering more than 32,000 full-time employees from 29 countries, revealed that with the growing global competition, workers around the world experience an excessive pressure on the job and are increasingly anxious, risk averse, and security-minded. In this increasingly achievement-oriented environment, for many people, failing is just not an option, and career advancement helps to ensure employment security in these economically difficult times. The adverse outcomes of such a climate are now clearly visible, with burnout and stress-related problems booming in many of the industrialized countries across the globe (Maslach 2012). It is not unthinkable that for a certain category of employees who are prone to feelings of fear and incompetence, this economic climate may also constitute a breeding ground for dysfunctional thoughts and feelings associated with the IP. Presuming that the IP may manifest more often than we think and that it might be related to adverse work-related outcomes, we believe that additional research on this topic is now timely and warranted.

The general objectives of this study are to improve our understanding of the IP, and to explore its relevance in the work context. To this end, we will first focus on the dispositional basis of this construct, investigating a broad range of personality constructs (i.e., Big Five personality traits, core self-evaluations, and perfectionism) that are potentially associated with the IP. Second, despite the fact that the IP could be a highly relevant construct in contemporary work settings, the IP has mainly been studied in student samples, and real-life organizational outcomes have been largely ignored so far. To the best of our knowledge, only one piece of work has suggested theoretical relationships between the IP and work-related outcomes (McDowell et al. 2007), although these propositions have never been tested empirically. The current study addresses the need for additional research on the IP in a working context, and represents one of the first to evaluate the relevance of the IP against a selection of organizationally relevant outcomes, including job satisfaction, organizational citizenship behavior (OCB), and organizational commitment. Finally, we will explore how environmental features, in particular workplace social support, may moderate the potential negative effects of this phenomenon on work-related criteria. In summary, the current study is centered around three main research questions:

(1) How is the IP related to a broad range of personality traits?
(2) How is the IP related to relevant work-related outcomes?
(3) Can workplace social support buffer the potential harmful effects of the IP?

The Trait-Relatedness of the Imposter Phenomenon

Although Clance and Imes (1978) initially emphasized environmental influences in the development and sustaining of impostor tendencies, more recently researchers have also started to consider personality variables in this context (e.g., Bernard et al. 2002). However, most if not all of the existing studies have addressed this issue in student populations and/or very specific research samples (e.g., Korean Catholics; Chae et al. 1995). Moreover, the scope of personality variables that have been considered is limited. We sought to extend previous findings for the IP and personality by (a) examining a broader trait spectrum and (b) addressing this topic in a sample of working adults.

Personality traits refer to *"dimensions of individual differences in tendencies to show consistent patterns of*

thoughts, feelings, and actions" (McCrae and Costa 2003, p. 25). Given that the IP is defined in terms of pervasive patterns of dysfunctional thoughts and feelings, we strongly support the interpretation of Ross and Krukowski (2003), describing the IP as a maladaptive personality style, which itself can be seen as the product of a combination of traits, including the Big Five traits (e.g., Watson 2012). Based on an extensive review of the IP literature, we have made a careful selection of personality variables that can be argued to be conceptually related to this specific dysfunctional personality tendency. By taking into account a wide array of personality variables, we aim to facilitate the definition and sharpen our understanding of the IP as a maladaptive personality style. What exactly are the personality building blocks that constitute this fear of being exposed? Is it about fear, self-perceived incompetence, or maybe the pursuit and cherishing of unrealistic goals? In the present study, this trait-relatedness of the IP will be evaluated against (1) a broad and comprehensive taxonomy of personality: The Five-Factor Model (FFM); (2) a higher order construct related to the self-concept, clearly relevant to feelings, and cognitions of being an intellectual fraud: Core Self-Evaluations (CSE); and (3) a more narrow trait with some conceptual overlap with the IP: Perfectionism.

Five-Factor Model Traits

The Five-Factor Model of personality is currently the most widely used framework for investigating the trait-relatedness of organizational phenomena. To date, however, only a small number of studies have tried to unravel the IP using this comprehensive framework of traits. Studies investigating student samples have consistently found a positive correlation with Neuroticism and a negative correlation with Conscientiousness (Bernard et al. 2002; Chae et al. 1995; Ross et al. 2001). Also, some of this research has indicated a negative relationship with Extraversion and/or Agreeableness (e.g., Chae et al. 1995; Ross et al. 2001), although these associations are generally much weaker and inconsistent across studies. For reasons of generalizability, it is crucial that these associations between the IP and traits of the FFM obtained in students are replicated in settings where stakes are much higher, such as the work context. A comparison of how personality is related to the IP in workers (this study) versus students (previous research) is further warranted given that the effects of personality on attitudes and behavior have been shown to depend on the specific stage of career development that one is in (Woods et al. 2013).

Clearly, the ongoing fear of being exposed as incompetent is a prominent emotion in the IP. Besides the central role of anxiety (e.g., Oriel et al. 2004), associations with other facets of *Neuroticism*, such as depression (McGregor et al. 2008) and shame (Cowman and Ferrari 2002), substantiate the importance of Neuroticism as a dispositional source of workers' impostor tendencies. Individuals high in *Conscientiousness* can be described as reliable, organized, ambitious, and thoughtful. Furthermore, they are characterized by strong feelings of competence, reflecting their belief in personal effectiveness (Hoekstra et al. 2007). This final asset of conscientious individuals is exactly what impostors seem to lack (e.g., Clance and Imes 1978). The persistent feelings of incompetence, which reside at the heart of the impostor construct, suggest a negative relationship between workers' impostor tendencies and Conscientiousness. Concerning the association with *Extraversion*, there have been no equivocal results in the literature; either a modest negative relationship was found (Chae et al. 1995; Ross et al. 2001) or no significant relationship was found (Bernard et al. 2002). However, assuming that interpersonal contacts make it more likely to be exposed as an impostor, impostors can be expected to be more introverted. Moreover, extraverts are inclined to be more cheerful and optimistic (i.e., the facet positive emotions), which is opposite to the impostor profile, characterized by generalized negative affect (e.g., worried, less optimistic, and relaxed; Leary et al. 2000). Concerning *Openness to experience* and *Agreeableness,* there are less clear conceptual reasons to expect an association with the IP. Moreover, except for Chae et al. (1995), who found a weak but significant relationship between the IP and Agreeableness, no significant associations have been reported previously. Although no relationships are expected a priori with these personality traits, these variables are nevertheless taken into account because we aim to explore the relationship with the complete FFM of personality in the present study. This leads to the following hypothesis:

Hypothesis 1 Regarding Big Five personality traits, workers' impostor tendencies are expected to be positively related to Neuroticism (1a), and negatively to Extraversion (1b), and Conscientiousness (1c).

Core Self-Evaluations (CSE)

According to Judge and colleagues, individuals with positive CSE appraise themselves in a consistently positive manner across situations, see themselves as capable, worthy, and in control of their lives (Judge and Kammeyer-Mueller 2012a). In contrast, individuals with impostor tendencies are characterized by low self-appraisals and general negative affect (e.g., Leary et al. 2000). Although the CSE construct and the IP demonstrate a strong level of convergence at the conceptual level, they have presently not been investigated jointly, as a result of which no direct estimates of their precise degree of overlap are available yet.

Judge et al. (1997) described CSE as a higher order latent construct that captures four core personality traits: self-esteem, generalized self-efficacy, emotional stability (low Neuroticism), and locus of control (LOC). In order to answer our first research question, we consider it to be useful to investigate the relationship between impostor tendencies and CSE at both the higher order level and the facet level. According to Judge and Kammeyer-Mueller (2012a), it can be relevant to study the individual core traits—whether or not complementary to the higher order construct—because there may be specific-factor variance that can be attributed to each of the core traits. A hybrid approach, considering both broad and narrow measures, might hence be the best choice when the aim is to better understand what predisposes impostor tendencies.

Although *self-esteem* has been reported to be a significant negative correlate of the IP (e.g., Sonnak and Towell 2001), others found no significant relationship (e.g., Garwick et al. 2011). However, assuming that feelings associated with the IP, such as self-doubt and self-criticism (e.g., Clance 1985; Thompson et al. 1998), must affect the value one places on oneself in a work context, we do expect a negative association in the current study. Moreover, we expect impostors to score lower on *emotional stability*, as we argued above (cf. high Neuroticism in the FFM), and there are also strong reasons to believe that *self-efficacy* and *LOC* play a considerable role in the IP. Clance and Imes (1978) argue that impostors typically lack self-confidence, and they experience a lasting sense of intellectual inauthenticity, despite repeated successful performance. As a result, impostors' judgments of their capabilities (i.e., self-efficacy) can expected to be low. Furthermore, impostors clearly have difficulty internalizing their success. They attribute their achievements to external factors such as luck, charm, knowing the right people, or working much harder than others to accomplish the same results, rather than to their own abilities (Clance and O'Toole 1988). The following hypothesis can be formulated:

Hypothesis 2 Workers' impostor tendencies are negatively related to core self-evaluations. More specifically, this means that more intense impostor tendencies will be related to lower levels of self-esteem (2a), lower generalized self-efficacy (2b), lower emotional stability (2c), and an external locus of control (2d).

Perfectionism

In addition to the FFM traits and CSE, a review of the IP literature also identifies perfectionism as a final trait potentially relevant for understanding this dysfunctional personality pattern (Clance 1985; Thompson et al. 2000). Although perfectionism has long been defined as an essentially negative construct (e.g., Hollender 1978), accumulated evidence now shows that perfectionism can better be considered as multifaceted (e.g., Stumpf and Parker 2000). Hamachek (1978) was one of the first who made a distinction between "normal" and "neurotic" forms of perfectionism. He described normal or adaptive perfectionists as those who set high expectations and standards for themselves but also experience a sense of pleasure and pride when those expectations are met. Neurotic or maladaptive perfectionists, on the other hand, are those who set high standards, but never seem to feel a sense of accomplishment, even when their high standards are met (Kearns et al. 2008). While the first type of perfectionism generally shows positive correlations with indicators of good adaptation, such as positive affect, life satisfaction, and an active coping style; the second—maladaptive perfectionism—is associated with indicators of maladjustment, such as negative affect, life dissatisfaction, depression, anxiety, and low self-esteem (Stoeber and Otto 2006). The present study is the first to consider this distinction between adaptive and maladaptive perfectionism in the context of impostor tendencies at work. The following hypothesis is proposed:

Hypothesis 3 Workers' impostor tendencies are expected to be positively related to maladaptive perfectionism (3a) and negatively to adaptive perfectionism (3b).

Work-Related Outcomes Associated with the Impostor Phenomenon

Although prevalence rates among working samples are lacking, the relatively high prevalence rate of the IP among students (e.g., 43 % in Sonnak and Towell 2001) might indicate that the IP is more common than we suspect and may leave its marks in the workplace. In line with Ross and Krukowski (2003), we believe that the IP represents a maladaptive and pervasive style of interacting in the world, which not only limits one's potential in educational contexts but also hinders one's functioning and performance at work. In an effort to begin the exploration of the IP in a work context, we will examine its relationship to a selection of outcomes that have proven to be of high relevance in this setting. First, we consider job satisfaction as a potential correlate of the IP, given that this attitudinal variable is one of the most predominant outcome variables in the applied literature (Judge and Kammeyer-Mueller 2012b). Moreover, job satisfaction has been shown to be related to a range of important constructs including employee well-being (Faragher et al. 2005) and performance (Judge et al. 2001). Second, we focus on organizational citizenship behavior, which is an aspect of job

performance that has been argued to be influenced by a person's level of efficacy perceptions (Beauregard 2012). As we argued, these perceptions of self-efficacy are expected to constitute one of the defining characteristics underlying the impostor construct. In a similar manner, given that perceived competence has also been shown to relate to an employee's commitment levels (Kittinger et al. 2009; Mathieu and Zajac 1990), we included organizational commitment as a final potential outcome of the IP in the current study.

Before we build our arguments concerning the expected relationships between impostor tendencies and the organizational outcomes, we will briefly discuss how the investigated personality variables relate to each of these outcomes, using prior meta-analytic work. As we believe the IP to be a constellation of personality traits, the individual dispositional variables can be considered as a part of the IP construct. Therefore, knowledge about how the separate personality variables relate individually to the organizational outcomes might give a preliminary indication about the expected relationships between the IP and the outcomes. Moreover and importantly, we will also illustrate how the IP as an overarching personality constellation can be related to the organizational outcomes through the combination and interaction of individual trait effects.

Job Satisfaction

Meta-analytic work on the dispositional source of job satisfaction has already revealed a robust negative association with Neuroticism (Judge et al. 2002) and positive associations with self-esteem (Judge and Bono 2001) and CSE (Lemelle and Scielzo 2012). Interestingly, the idea of the impostor phenomenon may help to better understand the combined effects of these and other personality variables on job satisfaction. Specifically, when an achievement-related task is assigned to them, impostors are usually plagued with worry, self-doubt, and anxiety. In order to deal with these feelings, they either extremely over-prepare a task or initially procrastinate followed by frenzied preparation. Mostly, they succeed, and they experience temporary feelings of elation and relief. However, their success reinforces the feelings of fraudulence rather than weakening them, because in their mind, this success does not reflect true ability. Once a new task is assigned, feelings of anxiety and self-doubt reoccur, a phenomenon referred to as the 'impostor cycle' (Clance 1985; Thompson et al. 1998). In the work environment, achievement-related tasks are common, and there are hence reasons to believe that an employee who is stuck in an impostor cycle and who fears to be exposed will report lower overall satisfaction in his or her job.

Organizational Citizenship Behavior

OCB is an aspect of job performance and can be described as "*individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization*" (Organ et al. 2006, p. 3). Research on individual dispositional factors underlying OCB has identified relatively robust positive associations with Conscientiousness and Agreeableness (Podsakoff et al. 2000), and with CSE and adaptive perfectionism (Beauregard 2012; Bowling and Wang 2012). Assuming that traits such as Conscientiousness, CSE, and adaptive perfectionism are inversely related to the IP, it can be expected that the IP, as a constellation of these individual traits, will also be inversely related to OCB. Moreover, here again, the IP offers a way to better understand the combined effects of these individual traits on OCB. The contextual knowledge and skill which Motowidlo et al. (1997) conceive as predictors of OCB are likely to be influenced by an individual's impostor tendencies. Specifically, as individuals high in impostor tendencies make less use of adaptive behavioral strategies (e.g., Want and Kleitman 2006), these individuals are less apt to have knowledge of both what citizenship behaviors are appropriate in a particular workplace situation and how to plan for and conduct these behaviors effectively. Furthermore, it can be argued that due to the fear of being exposed, impostors can become so engaged in their own tasks and performance that there remains less energy for tasks that are not part of their job description. Presuming that high personal achievement is the ultimate cover for their self-perceived fraudulence, and that personal resources are restricted, we expect impostors to be less inclined to engage in OCB.

Organizational Commitment

Allen and Meyer (1990) developed the three-component model of commitment which differentiates between affective, normative, and continuance commitment. Affective commitment reflects an emotional attachment to, identification with, and involvement in the organization. Normative commitment is experienced as a sense of obligation to remain, and continuance commitment reflects the perceived costs associated with leaving (Meyer et al. 2012). In the current study, we focus on two of these components, affective and continuance commitment, because they are most distinguishable from each other and because it has been demonstrated that they show different patterns of correlations with antecedent and consequence variables, in contrast to normative commitment, which strongly relates to affective commitment and has similar

correlation patterns with other variables (Meyer et al. 2002).

Prior research on individual personality traits and these commitment dimensions has indicated positive associations with CSE (Stumpp et al. 2009) and self-efficacy (Van Vuuren et al. 2008) for affective commitment, and a positive association with Neuroticism for continuance commitment (Erdheim et al. 2006). In terms of the IP, McDowell et al. (2007) theorized negative associations with affective commitment and positive associations with continuance commitment. With regard to affective commitment, they argued that impostors' intense feelings of self-doubt and their difficulties to internalize success could hinder the development of an emotional bond with the organization. Concerning continuance commitment, it can be argued that impostors think that they are selected into jobs that are at higher levels of responsibility and salary than they deserve. In case that they would leave their current job, they would feel that they are not able to find a job at the same level (McDowell et al. 2007). This is also in line with Powell and Meyer (2004) who found a positive relation between 'perceived lack of alternative employment opportunities' and continuance commitment. Hence, impostors' fear of failure is not expected to outweigh the cost of leaving the position. The following hypothesis can therefore be proposed concerning workers' impostor tendencies and work-related outcomes:

Hypothesis 4 With regard to work-related outcomes, impostor tendencies are expected to be negatively related to job satisfaction (4a), OCB (4b), and affective commitment (4c); and positively related to continuance commitment (4d).

Workplace Social Support as a Buffering Mechanism

In the present study, for the first time in the literature, it is empirically investigated whether workplace social support alleviates the potential negative outcomes associated with employees' imposter tendencies. Understanding the situational characteristics that might mitigate the potential negative effects of IP tendencies may hold benefits for both the employee and the organization. Whitman and Shanine (2012) recently posited that the ongoing thoughts and feelings within an impostor cycle may eventually result in a persistent state of physical and emotional depletion, which could form a threat for individuals' well-being and that of the organization. In order to continue functioning effectively, these authors argue that impostors must engage in behaviors that mitigate these feelings of exhaustion. More specifically, they suggest that social support could moderate the type of coping mechanism that exhausted impostors use. Impostors who perceive more social support may choose to engage in active coping strategies and may be more effective in addressing the source of the stress. Impostors experiencing less social support, in contrast, may rather choose to engage in avoidant coping strategies to deal with the exhaustion. Although the co-workers and superiors do not represent the true source of the threat, an impostors' fear that these people will expose him or her as inadequate, render them as threatening for the employee with impostor tendencies. By avoiding the source of the stress as a means of coping, the latter type of impostors could "*enter a loss spiral that subsequently leads to greater exhaustion*" (Whitman and Shanine 2012, p. 193). We propose that the perception of high support enables impostors to cope more adequately with their impostor tendencies, protecting them from negative organizational outcomes as compared to impostors with a low support perception. Following hypothesis is proposed:

Hypothesis 5 The negative relationships between workers' impostor tendencies and job satisfaction (5a), OCB (5b), and affective commitment (5c); and the positive relationship between impostor tendencies and continuance commitment (5d) are expected to be moderated by workplace social support, in such a way that social support will weaken these relationships.

Method

Design and Participants

Dutch-speaking Belgian white-collar workers ($N = 201$; 58 % female) participated voluntarily in this study. The mean age of the sample was 36.11 years ($SD = 10.18$). Table 1, detailing the demographic characteristics of the sample, further shows that participants were recruited from three different employment sectors: Finance and Accounting ($N = 62$), HRM ($N = 63$), and Education ($N = 76$). Among the participating organizations were an international accountancy firm, several HR-consultancy firms, and three schools. After the management had expressed their commitment to participate, they informed their employees about the investigation by email, including a friendly, noncommittal request to participate through a link that directed participants to an online survey. Employees from different organizational levels could be included in this study, and most of them held a master's (40 %) or a professional bachelor's (28 %) degree.

Measures

Except for the demographic and control measures, respondents were asked to endorse all survey-items on a

Table 1 Sample characteristics, distribution of impostor tendencies, and percentage categorical 'impostors' of the full sample (N = 201) and within demographic categories of the sample

	Sample size	Distribution of IP tendencies		Percentage 'impostors'[b]
	%	*M*	*SD*	%
Full sample	100	39.10	12.47	20
Sex				
Male	42	37.59	13.47	22
Female	58	40.21	11.62	18
Age[a]				
20–29	33	41.77	11.98	24
30–39	27	36.44	12.96	15
40–49	29	39.32	12.70	32
50–61	11	37.05	10.97	14
Sector				
Finance and accounting	31	38.26	12.71	23
HRM	31	39.65	13.35	22
Education	38	39.33	11.62	16
Educational level				
Secondary school	7.5	38.70	13.81	0
Professional bachelor	28	40.47	10.01	23
Academic bachelor	13	38.77	12.52	15
Master	40	38.26	14.19	21
Advanced Master	11	40.09	14.65	27
PhD	.5	41.00	–	0
Organizational level				
Junior	30	43.44	12.63	27
Experienced	32	38.06	11.13	16
Middle management	23	38.60	12.24	21
Higher management	10	37.50	15.28	20
Top management	5	33.50	14.48	20

[a] The mean age of the sample was 36.11 years (*SD* = 10.18)

[b] We used the cut-off value of 50 out of 80 to categorize employees as 'impostors,' based on the conventional cut-off score of 62 (Holmes et al. 1993) distinguishing 'impostors' from 'non-impostors' in the 20-item version of the CIPS (i.e., 100 (max. score in 20-item version)/100 × 62 = 62; 80 (max. score in 16-item version)/100 × 62 = 50)

5-point Likert scale; ranging from 1 (*not at all true*) to 5 (*very true*) for the impostor and perfectionism scale, and ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) for the other measures. All non-Dutch instruments were translated into Dutch using back-translation procedures as described by Brislin (1970).

Demographic Variables

Sex, age, employment sector, educational level, and organizational level were selected as relevant control variables. Because of their categorical nature, dummy variables were created for sex (one dummy with male = 0 and female = 1) and for sector (two dummies with Finance and Accounting being the reference category).

Impostor Phenomenon

Impostor tendencies were assessed using the 16-item Clance Impostor Phenomenon Scale (CIPS; Clance 1985). A validation study of the CIPS demonstrated that the IP was related to but substantially different from measures of depression, self-esteem, social anxiety, and self-monitoring (Chrisman et al. 1995). A more recent study revealed that the internal consistency reliability and item discrimination were satisfactory (French et al. 2008). However, these authors advised to use the total score of the CIPS because the confirmatory factor analysis results for the original theoretical model (i.e., with three subscales *Fake*, *Discount*, and *Luck*; Clance 1985) were unsatisfactory (French et al. 2008). Although the CIPS originally contained 20 items, four items were eliminated due to low inter-item correlations (French et al. 2008; Kertay et al. 1991). Example items of the final scale are "*I'm afraid people important to me may find out that I'm not as capable as they think I am*" and "*When people praise me for something I've accomplished, I'm afraid I won't be able to live up to their expectations of me in the future*." Cronbach's alpha of the impostor scale was .93.

It is important to note that in contrast to most of the prior IP studies (e.g., Ferrari 2005; Oriel et al. 2004; Sonnak and Towell, 2001; Thompson et al. 2000), we adopted a dimensional approach to measure impostor tendencies instead of the categorical approach that distinguishes 'impostors' from 'non-impostors.' Unlike the categorical approach, which uses—often arbitrary—cut-offs to differentiate between only two 'types,' the dimensional assessment considers the full range of scores on an underlying dimension of impostor tendencies. This approach is more consistent with the way personality tendencies, adaptive and maladaptive, are distributed in the population (e.g., Campbell and Miller 2011). Distributions of IP tendencies (means and standard deviations) in the entire sample and within different demographical subsamples are presented in Table 1. However, in order to enable comparisons with prior studies, a categorical variable was also created to provide base rate information of categorized 'impostors' in addition to the distributions of IP continua. Using a cut-off score of 50 out of 80 (see Note below Table 1; cf. Holmes et al. 1993), 20 % of our adult working sample is

categorized as an 'impostor' ($M = 57.93$, $SD = 6.96$) and 80 % as 'non-impostor' ($M = 34.42$, $SD = 8.48$).

Big Five Traits

Big Five personality traits were assessed using the Dutch/Flemish version of the 60-item NEO Five Factor Inventory (NEO-FFI; Hoekstra et al. 2007). The internal consistencies of the five personality domains are acceptable to good, ranging between .70 (Openness to experience) and .87 (Neuroticism).

Core Self-Evaluations

The Dutch/Flemish version of the CSE scale (De Pater et al. 2007) by Judge et al. (2003) was used to assess participants' core self-evaluations. To avoid item-overlap, we eliminated the Neuroticism/emotional stability subscale from this instrument because this trait was already covered by the NEO-FFI. The three remaining facets of the CSE scale were each surveyed by means of three items: self-esteem (e.g., "*Overall, I am satisfied with myself*"), generalized self-efficacy (e.g., "*When I try, I generally succeed*"), and LOC (e.g., "*I determine what will happen in my life*"). A higher score on LOC represents an internal locus of control. To obtain a score of the higher order CSE construct, we combined the three CSE subscales with the 12-item Neuroticism scale (reversed), as measured with the NEO-FFI. Because of the item imbalance between the CSE components (i.e., three items for self-esteem, self-efficacy, and LOC versus 12 items for emotional stability), the aggregate CSE score represents the mean of the four subscale scores instead of the mean of the 21 items. The internal consistency of the entire CSE scale—including emotional stability—was good ($\alpha = .91$). The Cronbach's alpha for the separate subscales was somewhat lower: $\alpha = .71$ for self-esteem, $\alpha = .60$ for self-efficacy, $\alpha = .87$ for emotional stability, and $\alpha = .67$ for LOC.

Perfectionism

The validated Dutch perfectionism instrument by Soenens et al. (2005) was used, measuring three scales of the Frost Multidimensional Perfectionism Scale (Frost et al. 1990): Personal Standards (7 items; e.g., "*I set higher goals than most people*"), Concern over Mistakes (9 items; e.g., "*I should be upset when I make a mistake*"), and Doubts about Actions (4 items; e.g., "*Even when I do something very carefully, I often feel that it is not quite right*"). Previous research has identified the subscale Personal Standards as an indicator of adaptive perfectionism and the other two subscales as indicators of maladaptive perfectionism (Frost et al. 1990). To obtain a measure of adaptive perfectionism, the items of the subscale Personal Standards were averaged. A score on maladaptive perfectionism was obtained in a similar way, namely by averaging the scores on the subscales Concern over Mistakes and Doubts about Actions. Cronbach's alpha was .80 for adaptive perfectionism and .92 for maladaptive perfectionism.

Job Satisfaction

The three-item scale from the Michigan Organizational Assessment Questionnaire (Cammann et al. 1979) was used to measure overall job satisfaction (e.g., "*All in all, I am satisfied with my job*"). Cronbach's alpha was .92.

Organizational Citizenship Behavior

The Dutch translation of the OCB questionnaire by Podsakoff et al. (1990) was adopted from De Clercq and Fontaine (2007). This self-report instrument consists of 24 items that cover Organ's (1988) five OCB dimensions (i.e., altruism, Conscientiousness, civic virtue, courtesy, and sportsmanship). Lepine et al. (2002) found in their meta-analysis that the different OCB dimensions are strongly interrelated and that they are not differentially related to the most commonly studied antecedents. Therefore, only the aggregate OCB construct will be taken into account in the present study ($\alpha = .87$). Sample items are "*I help others who have heavy workloads*" and "*I attend meetings that are not mandatory, but considered important.*"

Organizational Commitment

The revised six-item versions of the commitment scales of Meyer and Allen (1997) were used. In the context of this study, only affective (e.g., "*This organization has a great deal of personal meaning for me*") and continuance commitment (e.g., "*I feel that I have very few options to consider leaving this organization*") are considered. While the affective commitment scale had a good internal consistency ($\alpha = .82$), Cronbach's alpha for the continuance commitment scale was substantially lower ($\alpha = .62$).

Workplace Social Support

Participants completed the 15-item Mentoring and Communication Support Scale (Hill et al. 1989), which measures four types of social support at work, namely social support from colleagues, task support, career mentoring, and coaching. Examples of items are "*Someone of a higher rank frequently devotes extra time and consideration to me*" and "*My associates and I assist each other in accomplishing assigned tasks.*" Cronbach's alpha of the composite scale was .84.

Table 2 Descriptive statistics and variable intercorrelations

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Sex[a]	–	–										
2. Age	36.11	10.18	−.04									
3. Education[b]	5.16	1.29	−.16*	.01								
4. Org. level[c]	2.34	1.08	−.23**	.53†	.22**							
5. Sector dummy 1	–	–	−.24**	−.04	.00	.12						
6. Sector dummy 2	–	–	.04	−.09	.07	.12	−.45†					
7. Impostor tendencies[d]	39.10	12.47	.10	−.11	−.02	−.17*	−.05	.03	**.93**			
8. Neuroticism	2.53	.68	.12	−.12	−.07	−.21**	−.07	−.03	.64†	**.87**		
9. Extraversion	3.73	.54	.04	−.05	.03	.18*	−.05	.14*	−.43†	−.47†	**.81**	
10. Openness	3.20	.55	−.01	.09	.22**	.08	−.20**	.08	−.10	−.08	.12	**.70**
11. Agreeableness	3.79	.48	.26†	.10	−.01	.11	−.03	−.02	−.18*	−.10	.32†	.04
12. Conscientiousness	3.94	.54	.05	.10	−.01	.16*	.03	.06	−.41†	−.43†	.39†	−.02
13. CSE[e]	3.81	.55	−.02	.09	.02	.16*	−.02	.03	−.71†	−.86†	.56†	.07
14. Self-esteem	3.97	.60	.03	−.02	.01	.07	.03	.06	−.55†	−.64†	.48†	−.06
15. Self-efficacy	4.05	.57	−.01	.12	.08	.20**	−.11	.05	−.71†	−.66†	.53†	.22**
16. Emotional stability[f]	3.47	.68	−.12	.12	.07	.21**	.07	.03	−.64†	−1.00†	.47†	.08
17. LOC[g]	3.73	.71	.04	.09	−.06	.06	−.06	−.02	−.56†	−.62†	.45†	.00
18. Adaptive perfectionism	3.11	.72	−.17*	.00	.12	.19**	−.03	.16*	.03	−.03	.13	.07
19. Maladaptive perfectionism	2.27	.78	.03	−.16*	−.01	−.08	−.01	.05	.62†	.55†	−.35†	−.09
20. Job satisfaction	4.26	.82	.09	.09	−.01	.13	−.21**	−.03	−.30†	−.25†	.33†	.03
21. OCB	4.05	.43	.10	.17*	−.03	.22**	−.10	−.01	−.36†	−.41†	.38†	−.01
22. Affective commitment	3.66	.84	.13	.12	.02	.23**	−.19**	.02	−.13	−.11	.27†	−.03
23. Continuance commitment	2.62	.74	.06	.06	−.06	−.09	−.02	.00	.23**	.24**	−.24**	−.05
24. Social support	3.26	.62	.05	−.09	.07	.02	−.08	.07	.02	−.03	.24**	.05

	11	12	13	14	15	16	17	18	19	20	21	22	23	24
11. Agreeableness	**.75**													
12. Conscientiousness	.28†	**.82**												
13. CSE[e]	.19**	.51†	**.91**											
14. Self-esteem	.17*	.43†	.87†	**.71**										
15. Self-efficacy	.21**	.44†	.85†	.69†	**.60**									
16. Emotional stability[f]	.10	.43†	.86†	.64†	.66†	**.87**								
17. LOC[g]	.19**	.44†	.86†	.68†	.60†	.62†	**.67**							
18. Adaptive perfectionism	−.20**	.35†	.10	.13	.12	.03	.08	**.80**						
19. Maladaptive perfectionism	−.23**	−.24†	−.56†	−.41†	−.54†	−.55†	−.43†	.43†	**.92**					
20. Job satisfaction	.25†	.27†	.40†	.36†	.37†	.25†	.39†	.09	−.25†	**.92**				
21. OCB	.40†	.48†	.52†	.48†	.49†	.41†	.43†	.15*	−.29†	.55†	**.87**			
22. Affective commitment	.27†	.23**	.20**	.18*	.21**	.11	.20**	.08	−.03	.71†	.44†	**.82**		
23. Continuance commitment	.03	−.10	−.30†	−.22**	−.23**	−.24**	−.32†	−.01	.27†	−.33†	−.14	−.10	**.62**	
24. Social support	.14*	.11	.10	.16*	.11	.03	.06	.22**	.01	.44†	.39†	.41†	−.11	**.84**

Bold values on the diagonal show the internal consistency of the relevant variable

Org. level organizational level, *OCB* organizational citizenship behavior

* $p < .05$, ** $p < .01$, † $p < .001$

[a] Sex is dummy coded such that 0 = male and 1 = female

[bc] In resp. 6 and 5 categories

[d] Maximal score is 80

[e] CSE including emotional stability

[f] Reversed Neuroticism, as measured with NEO-FFI

[g] Negative correlations represent an external LOC/positive correlations an internal LOC

Results

Preliminary Analyses

With regard to the mean impostor tendencies, shown in Table 1, a *t* test first indicated no significant sex differences in mean impostor tendencies, $t(199) = -1.48$, $p > .05$. Moreover, an analysis of variance test showed that there were no significant differences in mean IP tendencies between the three sectors, $F(2,198) = .21$, $p > .05$.

All descriptive statistics, variable intercorrelations, and internal consistencies are reported in Table 2. The results first show that impostor tendencies are highly correlated with a number of personality constructs. Both the higher order CSE construct ($r = -.71$, $p < .01$) and the facets of CSE are strongly associated with impostor tendencies, with self-efficacy showing the strongest relation ($r = -.71$, $p < .01$), followed by emotional stability, LOC and self-esteem ($r = -.64$, $r = -.56$, and $r = -.55$, respectively, $p < .01$). Further, maladaptive perfectionism ($r = .62$, $p < .01$) and the Big Five personality domains Neuroticism ($r = .64$, $p < .01$), Conscientiousness ($r = -.41, p < .01$), and Extraversion ($r = -.43$, $p < .01$) also show relatively strong correlations with impostor tendencies, and a smaller but significant relationship was found with Agreeableness ($r = -.18$, $p < .05$). Regarding the associations between impostor tendencies and the work-related outcomes, significant relationships were found with job satisfaction ($r = -.30$, $p < .01$), OCB ($r = -.36$, $p < .01$), and continuance commitment ($r = .23$, $p < .01$).

Personality Variables Associated with Impostor Tendencies

The hypotheses concerning the trait-relatedness of the IP were first investigated by means of a series of four hierarchical regression analyses that each examine the effects of one personality framework (FFM, CSE, and perfectionism) separately. In each of these regression models, control variables were entered in a first step, followed by the personality variables in a second step (see Table 3, Models 1–3). In line with our hybrid approach regarding CSE, we conducted two separate regression analyses for this construct: one with the higher order CSE construct as a predictor of IP tendencies (Model 2a) and one with its facets (Model 2b).

Consistent with our expectations regarding the Big Five traits (Hypothesis 1), impostor tendencies are positively related to Neuroticism and negatively to Conscientiousness ($\beta = .51$ and $-.13$, respectively, $p < .001$). No significant relationships were observed between impostor tendencies and Openness or Agreeableness ($\beta = -.04$ and $-.07$, respectively, $p > .05$). Finally, the expected negative relationship with Extraversion (Hypothesis 1b) failed to reach significance when the Big Five traits were entered as a set ($\beta = -.12, p > .05$). Together, the Big Five traits explained up to 43 % of the variance in impostor tendencies, above and beyond the control variables, $F(5,189) = 30.32$, $p < .001$.

The results of the subsequent regression models (Model 2a and 2b) partially supported our expectations concerning core self-evaluations (Hypothesis 2). Model 2a confirms the expected negative association between CSE and impostor tendencies ($\beta = -.71$, $p < .001$). The CSE higher order construct accounted for 49 % of the variance in impostor tendencies, over and above control variables, $F(1,193) = 195.86$, $p < .001$. Taking a closer look at the CSE components separately (Model 2b), we can see that the expected negative association was confirmed for self-efficacy ($\beta = -.50$, $p < .001$) and emotional stability ($\beta = -.25$, $p < .01$), but not for LOC and self-esteem ($\beta = -.13$ and .04, respectively, $p > .05$). Moreover, the four CSE traits accounted for 54 % of the variance in impostor tendencies, $F(4,190) = 60.10$, $p < .001$.

Consistent with our expectations (Hypothesis 3), Model 3 shows that impostor tendencies are positively related to maladaptive perfectionism ($\beta = .74$, $p < .001$) and negatively to adaptive perfectionism ($\beta = -.28$, $p < .001$). Together, both perfectionism scales account for 42 % of the variance in impostor tendencies, $F(2,192) = 75.28$, $p < .001$.

In a second step, the associations of all (lower-order) personality variables with impostor tendencies were investigated simultaneously, taking into account the interrelations between the personality constructs (see Model 4 in Table 3). The results first indicate that the entire set of personality traits accounted for 59 % of the variance in impostor tendencies, over and above the variance accounted for by control variables. Moreover, only two individual traits, namely self-efficacy ($\beta = -.40$, $p < .001$) and maladaptive perfectionism ($\beta = .28$, $p < .001$), remained significantly associated with impostor tendencies in this model. In order to determine the relative importance of each of the correlated personality traits for predicting impostor tendencies, a relative weight analysis (Tonidandel and LeBreton 2011) was also conducted (see column 3 in Model 4). In the presence of multicollinearity, relative weights supply meaningful estimates of variable importance, while standardized regression weights, and other traditional statistics are inadequate in such circumstances (Tonidandel and LeBreton 2011). The reported percentages give an indication of the contribution that each personality trait makes to the R^2 in the presence of the other correlated traits. The results confirm that self-efficacy (24.1 %) had the highest relative importance among the investigated predictors, followed by maladaptive perfectionism (19.9 %) and Neuroticism/emotional stability (15.7 %). Openness was identified as the least important predictor (0.7 %). Note that for these analyses, we included the four individual CSE traits rather than the CSE higher

Table 3 Summary of hierarchical regression analyses examining the associations between impostor tendencies and personality traits

	Model 1: Big Five traits			Model 2a: higher order CSE			Model 2b: CSE facets			Model 3: perfectionism			Model 4: All personality traits			
	β	SE (b)	ΔR^2	β	SE (b)	ΔR^2	β	SE (b)	ΔR^2	β	SE (b)	ΔR^2	β	SE (b)	%[a]	ΔR^2
Control variables (Step 1)			.04			.04			.04			.04			3.6[b]	.04
Big Five traits (Step 2)			.43[†]													
Neuroticism	.51[†]	.08											.14	.09	15.7	
Extraversion	−.12	.10											.01	.09	5.6	
Openness	−.04	.08											.01	.07	.7	
Agreeableness	−.07	.10											−.01	.09	1.0	
Conscientiousness	−.13[*]	.09											−.07	.09	6.4	
Core self-evaluations (Step 2)				−.71[†]	.07	.49[†]			.54[†]							
Self-esteem							.04	.10					.03	.10	9.8	
Self-efficacy							−.50[†]	.10					−.40[†]	.11	24.1	
Emotional stability							−.25[**]	.08					−.14	.09	15.7	
Locus of control[c]							−.13	.08					−.11	.08	11.1	
Perfectionism (Step 2)												.42[†]				
Adaptive										−.28[†]	.07		−.01	.08	2.1	
Maladaptive										.74[†]	.06		.28[†]	.07	19.9	
All personality traits (Step 2)																.59[†]

Control variables, i.e., sex, age, educational level, organizational level, and employment sector, were entered in the first step of the regressions. For Models 1–3, separate analyses were conducted for each personality taxonomy. In Model 4, all personality variables were entered together in step 2 of the hierarchical regression

* $p < .05$, ** $p < .01$, † $p < .001$

[a] Percentages give an indication of the relative importance of the independent variables in relation to impostor tendencies

[b] Relative weights of the control variables were summed

[c] Negative coefficients represent an external LOC/positive coefficients an internal LOC

order construct. We believe that this "narrow" approach better serves the aim of sharpening our understanding of the IP as a maladaptive personality style, as it enables us to explore the unique value of each of the self-evaluations in predicting the IP. Also, it is important to point out that the trait Neuroticism/emotional stability was only included once in this relative weight analysis.

Finally, in order to demonstrate the distinctiveness and the unique contribution of the investigated personality variables, we additionally conducted a hierarchical regression analysis in four steps. Controls were entered (Step 1) followed by Big Five traits (Step 2), higher order CSE (Step 3), and perfectionism (Step 4). Incremental validities obtained from this analysis show that CSE adds significantly to the prediction of impostor tendencies ($\Delta R^2 = .07$) beyond Big Five traits, and perfectionism adds significantly over and above Big Five traits and CSE ($\Delta R^2 = .06$).

Work-Related Outcomes Associated with Impostor Tendencies

Next, a series of four hierarchical regression analyses were conducted to investigate the associations between impostor tendencies and each of the four work-related outcomes. In each of these regression models, control variables were entered in a first step, followed by impostor tendencies in a second step. The results presented in Table 4 partially confirmed our expectations (Hypothesis 4). Specifically, impostor tendencies are negatively related to job satisfaction and OCB ($\beta = -.29$ and $-.35$, respectively, $p < .001$), and positively to continuance commitment ($\beta = .22$, $p < .01$). The expected negative association with affective commitment (Hypothesis 4c) was not significant ($\beta = -.11$, $p > .05$).

Further, we also explored whether impostor tendencies relate significantly to the work outcomes, after controlling

for the various personality variables. The results of the hierarchical regressions indicated no significant increases in R^2 when IP tendencies were added to the regression models, suggesting no incremental validity of the IP for each of the work-related outcomes.

Buffering Effect of Workplace Social Support

Hierarchical regression analyses were used to test the moderation hypotheses. To reduce the problem of multicollinearity as much as possible and to make the interpretation of the regression coefficients more meaningful, centered values were calculated for the moderator variable and the independent variable prior to the analyses. The control variables (i.e., sex, age, education, organizational level, and employment sector) were entered in a first step, followed by the centered independent variable (i.e., impostor tendencies) and moderator variable (i.e., workplace social support) in a second step, and the interaction term of the centered independent variable and moderator in a third and final step.

The buffering hypothesis (Hypothesis 5) was partially confirmed. Significant moderation effects were found in the present study for job satisfaction (Hypothesis 5a; $b = .30$, $p < .001$) and OCB (Hypothesis 5b; $b = .15$, $p < .01$). Figure 1 illustrates that when social support is low, strong impostor tendencies are associated with low job satisfaction and less OCB. In contrast, when social support is high, impostor tendencies do not have a negative effect on either job satisfaction or OCB. For affective and continuance commitment (Hypotheses 5c and 5d), these moderation effects were nonsignificant ($b = .12$ and $b = .06$, respectively, $p > .05$).

Table 4 Hierarchical regression analyses examining the associations between impostor tendencies and work-related outcomes

	Job satisfaction			OCB		
	β	SE (b)	ΔR^2	B	SE (b)	ΔR^2
Step 1						
Sex	.08	.12	.11**	.12	.06	.09**
Age	−.08	.01		.02	.00	
Education	−.04	.05		−.06	.02	
Org. level	.26†	.07		.28†	.04	
Sector dummy 1	−.32†	.14		−.15	.08	
Sector dummy 2	−.22*	.14		−.10	.08	
Step 2						
Impostor tendencies	−.29†	.07	.08†	−.35†	.04	.12†
	Affective commitment			Continuance commitment		
	β	SE (b)	ΔR^2	B	SE (b)	ΔR^2
Step 1						
Sex	.14	.12	.14†	.03	.11	.03
Age	−.10	.01		.16	.01	
Education	−.03	.05		−.02	.04	
Org. level	.37†	.07		−.17	.06	
Sector dummy 1	−.28†	.15		.04	.14	
Sector dummy 2	−.16*	.14		.05	.13	
Step 2						
Impostor tendencies	−.11	.07	.01	.22**	.07	.05**

OCB organizational citizenship behavior, *Org. level* organizational level

* $p < .05$, ** $p < .01$, † $p < .001$

Discussion

This study aimed to increase our knowledge about the nature of the IP, and to gain an understanding of how this phenomenon could be relevant in the work context. To this end, we addressed three central research questions: (1) How is the IP related to a broad range of personality traits?; (2) How is the IP related to relevant work-related outcomes?; and (3) Can workplace social support buffer the potential harmful effects of impostor tendencies? In order to address these questions accurately, we abandoned the categorical approach to the IP (differentiating between impostors and non-impostors) and used a dimensional perspective on impostor tendencies instead. This shift aligns with the more general trend of conceptualizing adaptive *and* maladaptive personality functioning as continua rather than as separate categories (e.g., Wille and De Fruyt 2014). A person is not either a narcissist or not (Campbell and Miller 2011) but can more accurately be described in terms of his or her score on an underlying dimension of narcissistic tendencies. Similarly, there exists a wide range of impostor tendencies in the population; variability that is largely ignored when a categorical approach is used. This dimensional perspective on dysfunctional personality is particularly useful for research in organizational contexts, where most individuals have middle-level scores on these tendencies instead of extreme low or high scores. However, for ease of comparison with prior work, we also created a dichotomous variable and found a base rate of 20 % 'categorized' impostors in our adult working sample, which is—although still substantial—noticeably lower than the prevalence rates obtained in student samples. By itself this finding already suggests that our knowledge about the IP derived from research in student samples might not automatically apply to workers' impostor tendencies, and that additional research in this area is warranted. The present study was one of the first to investigate how impostor tendencies operate in actual work contexts.

Trait-Relatedness of the IP

This study first showed that the trait-relatedness of workers' impostor tendencies is considerable and cannot be

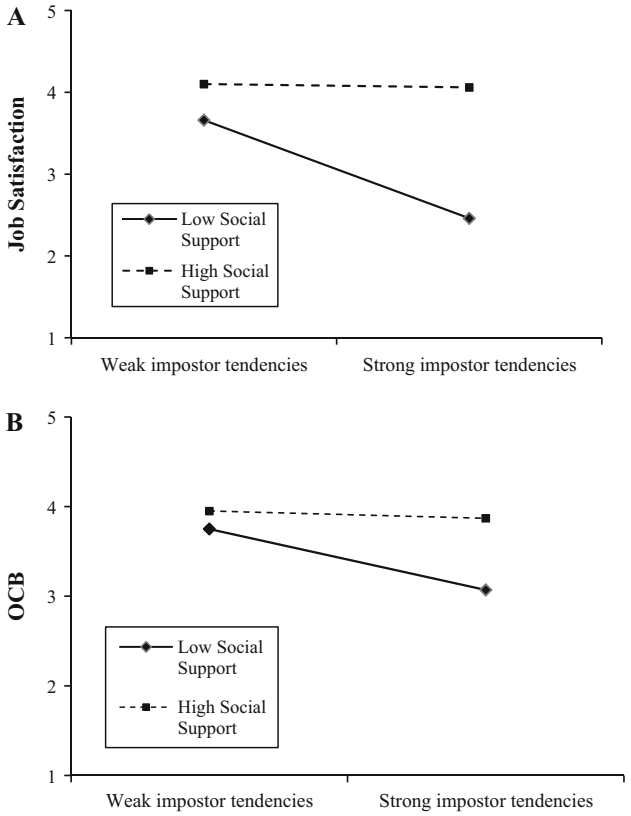

Fig. 1 Moderating effect of social support in the relationship between impostor tendencies and job satisfaction (panel **a**) and OCB (panel **b**)

overlooked. Big Five personality traits, CSE, and perfectionism are important dispositional factors that give form to the impostor construct, explaining large proportions of its variance. A relative weight analysis further indicated self-efficacy to be the most important personality trait related to impostor tendencies, followed by maladaptive perfectionism and Neuroticism. Interestingly, among the entire scope of personality traits considered in this study, the more narrow constructs seemed to play a more prominent role in the IP, relative to the general Big Five traits.

With regard to the Big Five traits, stronger impostor tendencies are associated with higher scores on Neuroticism and with lower scores on Conscientiousness. Although we found a relatively high correlation between IP tendencies and Extraversion, this association failed to reach significance when taking account of the other Big Five traits. Interestingly, we replicated the negative relationship between impostor tendencies and Conscientiousness. Given that the IP is used to describe people who deliver superior work, this negative association does not seem obvious at first sight. However, we argued that this could reflect a lower score on the Conscientiousness-facet Competence, which deals with individuals' believed coping ability. Importantly, however, Bernard et al. (2002) found impostors to score lower on other Conscientiousness-facets as well, including Self-Discipline, indicating that low Competence perceptions alone cannot fully account for this negative association between impostor tendencies and Conscientiousness. We recommend future researchers to use the complete NEO-PI-R for the assessment of the FFM traits, in order to further disentangle the trait-relatedness of the IP, and particularly the complex effects of Conscientiousness and its facets.

Furthermore, we found core self-evaluations to be strongly related to impostor tendencies. Specifically, individuals with impostor tendencies are inclined to have lower CSE scores, appraising themselves in a consistently negative manner across situations. Regarding the CSE facets, we did not find a significant association between impostor tendencies and self-esteem and LOC, at least not when it was considered along with the other self-evaluations. Our findings might suggest that, compared to emotional stability and especially self-efficacy, general self-esteem is too broad to capture aspects of workers' impostor tendencies. When using a more differentiated measure of self-esteem, it is possible that impostors report a satisfactory self-esteem on most components, such as lovability and body appearance but report lower levels on components that appeal to work-related functioning, such as competence. Despite the significant negative correlation with LOC, which suggests that impostors indeed experience problems allocating success to their own accomplishments, this effect disappeared when the other, more powerful effects of CSE traits were taken into account.

Besides the conceptual resemblance between self-efficacy and the IP, the current study provides some empirical evidence that both constructs have a substantial overlap and, therefore, we believe that a low self-efficacy judgment resides at the core of the IP. However, we do not believe that the IP can be reduced to a low self-efficacy judgment. The IP, as understood as a maladaptive personality *style*, incorporates more than a (set of) cognitive self-evaluation(s). Other cognitive features such as maladaptive perfectionistic concerns, along with emotional and behavioral features such as fear of being exposed and over-preparing tasks also nourish the phenomenon, in addition to a low self-efficacy judgment. It is the complex co-occurrence of these different but interrelated personality manifestations that form the breeding ground of impostor tendencies, a phenomenon that—despite its underlying complicatedness—is readily observable in the work context.

With regard to perfectionism, our results indicated that impostor tendencies are positively associated with maladaptive perfectionistic tendencies, while a negative association was found with the adaptive dimension of perfectionism. We therefore recommend future investigators to take this differentiation into account.

Work Outcomes Associated with the IP

The present study was the first to investigate the relationships between the IP and work-related outcomes, and revealed that employees with strong IP tendencies (i) are rather dissatisfied with their jobs, (ii) report less OCB, and (iii) express a stronger intention to stay in the organization because the monetary, social, and psychological costs associated with leaving the organization are perceived as too high. Consistent with our expectations, we found that the constant fear of being exposed as incompetent along with the reoccurring feelings of anxiety and self-doubt are also reflected in lower levels of overall job satisfaction. Further, we argued that the negative association between impostor tendencies and OCB could be explained by a potential lack of contextual knowledge and skill, and a scarcity of personal resources. Future research could deepen our understanding of this negative association between IP tendencies and OCB by considering contextual knowledge and skill as mediators of this association. Furthermore, including a measure of in-role performance next to the assessment of extra-role behavior could test the scarcity-hypothesis. Regarding organizational commitment, we found that employees with strong IP tendencies are inclined to report stronger continuance commitment, but they are not necessarily less emotionally connected with their organization. It is possible that they are highly engaged in their job, to prevent them from being exposed as incompetent, which could make their identification with their organization stronger in the long term. Saks (2006), for example, found that job engagement is positively related to affective organizational commitment. Future research could investigate whether IP tendencies are indeed positively associated with levels of engagement, and whether this mediates the association between the IP and affective commitment.

We further found that IP tendencies showed no incremental validity in the prediction of our work-related outcomes beyond the effects of the various traits considered in this study. Nevertheless, as was also argued in the introduction, our results concerning the IP *are* meaningful and important because they help to clarify how a specific and recognizable *constellation of personality traits resorts an effect on relevant work outcomes.* Too often in the literature, dispositional effects on work-related outcomes are studied by considering the isolated effects of individual traits separately. Conversely, the identification and labeling of such trait constellations and their manifestation at work facilitates communication among assessors, is helpful to design follow-up and intervention strategies, and can further be the subject of theory building. Conceptually speaking, the IP is comparable to the idea of the 'entrepreneurship-prone personality profile' (Obschonka et al. 2013), both referring to a constellation of personality traits with relevance to understand behavior at work. This kind of multidimensional constructs gain extra meaning and significance when considered holistically, rather than considered as a conglomerate of single personality variables. The results of the present study show that the IP can be conceptualized as a specific trait-configuration of low self-efficacy (i.e., self-doubt), maladaptive perfectionism (i.e., unrealistic goal setting), and Neuroticism (i.e., fear and worry) and that this constellation of traits is related to relevant attitudinal outcomes, such as job satisfaction, organizational commitment, and OCB. Although the IP does not seem to demonstrate incremental validity over a broad set of personality traits, the main advantage of considering the IP in our theory, research, and practice is that it provides a way to conceptualize the (recognizable) effects of various individual personality variables working in on each other.

Social Support as a Buffer

A final aim of this study was to investigate the moderating role of workplace social support in the relationships between impostor tendencies and work outcomes. Our results indicated that, to a certain extent, social support can indeed act as a buffering variable in these relationships. We specifically found that, when social support is high, the negative relationships between impostor tendencies and satisfaction and OCB disappear. This suggests that perceptions of strong workplace social support could be the key to temper some of the negative effects of impostorism. We support Whitman and Shanine's (2012) proposition that this buffering effect could be due to the more adaptive coping mechanisms impostors use in case of a high social support perception. Although we also expected social support to act as a buffer in the relationship between impostor tendencies and continuance commitment, this could not be confirmed. We found that high IP tendencies are associated with higher continuance commitment, regardless of the level of social support at work. Impostors' feeling that they are not able to find a similar job when leaving their current job might be so strong that no buffering effect of social support occurs. Future research is warranted that explores other potential conditions under which impostor tendencies could be triggered or tempered, for instance using trait-activation theory (Tett and Burnett 2003) as a guiding framework.

Practical Implications

This study first revealed the specific traits that form a dispositional risk factor for the development of impostor tendencies. Employees hampered by strong impostor tendencies, could perhaps benefit from individual coaching programs, including cognitive behavior exercises that focus

on the alleviation of maladaptive perfectionistic concerns and the enhancement of self-efficacy (Ilkhchi et al. 2011; Lo and Abbott 2013). Further, the current study demonstrated that impostor tendencies can have an impact on career-relevant attitudes, which could for instance be informative for career counselors. As impostor tendencies can keep someone back from moving on to higher managerial levels (Kets de Vries 2005) or from moving to another organization (i.e., continuance commitment), career transitions seem for example less likely for people scoring higher on the IP. Moreover, extra attention could be devoted to the assessment of these trait-configurations in employee selection or development contexts. Taken into account that individuals with strong impostor tendencies are often high-achieving persons with a successful career history, we do not claim that applicants with impostor tendencies should be excluded from employment consideration. Instead, as this study also highlighted how organizations might buffer potential adverse work outcomes associated with impostor tendencies, the implementation of interventions designed to (a) monitor and (b) enhance employees' perceptions of workplace social support (e.g., through formal and informal feedback programs) seems particularly relevant when stronger impostor tendencies are observed.

Study Limitations

Finally, this study also has some limitations. First, a cross-sectional research design is used, which makes it not possible to draw firm causal conclusions regarding the associations that were observed. Second and related, all variables in this study were measured using self-reports, which may raise concerns regarding common method bias. More specifically, given the nature of our central research variable (i.e., the IP, which is a tendency to downgrade oneself), part of our findings could partially reflect *under-reporting effects*. Two of our findings deserve some additional attention in this regard. First, the negative association between Conscientiousness and impostor tendencies was interpreted in the present study as a *true effect*, namely that individuals with stronger imposter tendencies *are* less conscientious compared to individuals with less pronounced impostor tendencies. However, an alternative explanation could be that impostors *perceive and describe* themselves as lower on Conscientiousness, while in reality they are not. Perhaps impostors set very high standards for themselves, and feel that they 'cannot be conscientious enough.' As another example, it could be that the negative association between impostor tendencies and OCB is also partially the result of impostors discounting or minimizing any extra-role behaviors they engage in. Want and Kleitman (2006), for instance, also suggested that impostors demonstrate a "gap" in the assessment of their abilities and performance. Clearly, in order to empirically disentangle the relative validity of true versus underreporting explanations of these intriguing findings, future research can collect peer ratings of personality and co-worker assessments of (extra-role) performance in addition to self-reports. A third limitation of our study is that three of our scales had relatively low internal consistencies (i.e., LOC, self-efficacy, and continuance commitment). Although some researchers argue that the threshold may decrease to .60 for exploratory research (e.g., Hair et al. 2010; Robinson et al. 1991), it needs to be acknowledged that the internal consistencies are below the commonly accepted threshold of .70, and that therefore, these results should be interpreted with caution. Specifically, the most likely implication of these lower reliability estimates is that the associations between these variables and for instance the IP are underestimated. Finally, we acknowledge that the measurement of CSE, combining three facets of the CSE scale with reversed Neuroticism, as measured with the NEO-FFI, is not optimal. However, we believe that the added value of having an operationalization of CSE at the higher order level and a Cronbach's alpha of .91 for the aggregated scale should justify our approach.

Conclusion

The present study contributed to the understanding of the impostor phenomenon by, for the first time in the literature, delving deep into the trait-relatedness of this construct and by investigating potential correlates that are of high relevance in organizational settings and for individual careers. The emerging picture confirmed a substantial dispositional basis, highlighting the most fundamental personality building blocks of this phenomenon. Further, initial evidence was provided for the potentially dysfunctional nature of this fascinating trait configuration in a work context, underlining the importance of future research on this topic.

References

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology, 63*, 1–18.

Beauregard, T. A. (2012). Perfectionism, self-efficacy and OCB: The moderating role of gender. *Personnel Review, 41*, 590–608.

Bernard, N. S., Dollinger, S. J., & Ramaniah, N. V. (2002). Applying the big five personality factors to the imposter phenomenon. *Journal of Personality Assessment, 78*(2), 321–333.

Bowling, N. A., & Wang, Q. (2012). The moderating effect of core self-evaluations on the relationships between job attitudes and organisational citizenship behavior. *Applied Psychology: An International Review, 61*, 97–113.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*, 185–216.

Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1979). *The Michigan Organizational Assessment Questionnaire.* Unpublished manuscript, University of Michigan, Ann Arbor, Michigan.

Campbell, W. K., & Miller, J. D. (2011). *The handbook of narcissism and narcissistic personality disorder: Theoretical approaches, empirical findings, and treatments*. Hoboken, NJ: Wiley.

Chae, J., Piedmont, R. L., Estadt, B. K., & Wicks, R. J. (1995). Personological evaluation of Clance's impostor phenomenon scale in a Korean sample. *Journal of Personality Assessment, 65*, 468–485.

Chrisman, S. M., Pieper, W. A., Clance, P. R., Holland, C. L., & Glickauf-Hughes, C. (1995). Validation of the clance impostor phenomenon scale. *Journal of Personality Assessment, 65*, 456–467.

Clance, P. R. (1985). *The impostor phenomenon: Overcoming the fear that haunts your success*. Atlanta, GA: Peachtree.

Clance, P. R., & Imes, S. A. (1978). The impostor phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research, and Practice, 15*, 241–247.

Clance, P. R., & O'Toole, M. A. (1988). The imposter phenomenon: An internal barrier to empowerment and achievement. *Women and Therapy, 6*(3), 51–64.

Cowman, S. E., & Ferrari, J. R. (2002). Am I for real? Predicting impostor tendencies from self-handicapping and affective components. *Social Behaviour and Personality, 30*, 119–126.

De Clercq, S., & Fontaine, J.R.J. (2007). Extending the Schwartz value theory for assessing supplementary person-organization fit. Unpublished Doctoral Dissertation, Ghent University, Ghent, Belgium.

De Pater, I. E., Schinkel, S., & Nijstad, B. A. (2007). Validatie van de Nederlandstalige Core Self-evaluations Vragenlijst. *Gedrag en Organisatie, 20*, 82–99.

Erdheim, J., Wang, M., & Zickar, M. J. (2006). Linking the Big Five personality constructs to organizational commitment. *Personality and Individual Differences, 41*, 570–959.

Faragher, E. B., Cass, M., & Cooper, C. L. (2005). The relationship between job satisfaction and heath: A meta-analysis. *Occupational and Environmental Medicine, 62*, 105–112.

Ferrari, J. R. (2005). Impostor tendencies and academic dishonesty: Do they cheat their way to success? *Social Behavior and Personality, 33*, 11–18.

French, B. F., Ullrich-French, S. C., & Follman, D. (2008). The psychometric properties of the Clance Impostor Scale. *Personality and Individual Differences, 44*, 1270–1278.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449–468.

Garwick, M. R., Ford, A. C., & Hughes, J. L. (2011). Impostor phenomenon and females' self-esteem, GPA, and relationship with mother. *Undergraduate Research Journal for the Human Sciences*, *10*. http://www.kon.org/urc/v10/garwick.html

Hair, J. F., Black, W., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology, 15*, 27–33.

Hill, S. E. K., Bahniuk, M. H., Dobos, J., & Rouner, D. (1989). Mentoring and other communication support in the academic setting. *Group and Organization Studies, 14*, 355–368.

Hoekstra, H. A., Ormel, J., & De Fruyt, F. (2007). *Handleiding: NEO persoonlijkheids-vragenlijsten/Manual: NEO personality questionnaires*. Amsterdam: Hogrefe.

Hollender, M. H. (1978). Perfectionism, a neglected personality trait. *Journal of Clinical Psychiatry, 39*, 384.

Holmes, S. W., Kertay, L., Adamson, L. B., Holland, C. L., & Clance, P. R. (1993). Measuring the impostor phenomenon: A comparison of Clance's IP scale and Harvey's IP scale. *Journal of Personality Assessment, 60*, 48–59.

Ilkhchi, S. V., Poursharifi, H., & Alilo, M. M. (2011). The effectiveness of cognitive-behavioral group therapy on self-efficacy and assertiveness among anxious female students of high schools. *Procedia Social and Behavioral Sciences, 30*, 2586–2591.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*, 80–92.

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The core self-evaluations scale: Development of a measure. *Personnel Psychology, 56*(2), 303–331.

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-Factor Model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*, 530–541.

Judge, T. A., & Kammeyer-Mueller, J. D. (2012a). General and specific measures in organizational behavior research: Considerations, examples, and recommendations for researchers. *Journal of Organizational Behavior, 33*(2), 161–174.

Judge, T. A., & Kammeyer-Mueller, J. D. (2012b). Job attitudes. *Annual Review of Psychology, 63*, 341–367.

Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19*, 151–188.

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. R. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*, 376–407.

Kaiser, R. B., & Hogan, J. (2011). Personality, leader behavior, and overdoing it. *Consulting Psychology Journal: Practice and Research, 63*(4), 219–242.

Kearns, H., Forbes, A., Gardiner, M., & Marshall, K. (2008). When a high distinction isn't good enough: A review of perfectionism and self-handicapping. *The Australian Educational Researcher, 35*, 21–36.

Kertay, L., Clance, P.R., & Holland, C.L. (1991). *A factor study of the Clance Impostor Phenomenon Scale*. Unpublished manuscript, Georgia State University, Atlanta, GA.

Kets de Vries, M. F. R. (2005). The dangers of feeling like a fake. *Harvard Business Review, 83*, 108–116.

Kittinger, J., Walker, A., Cope, J. G., & Wuensch, K. (2009). The relationship between core self-evaluations and affective commitment. *Journal of Behavioral and Applied Management, 11*, 68–92.

Leary, M. R., Patton, K. M., Orlando, A. E., & Wagoner Funk, W. (2000). The impostor phenomenon: Self-perceptions, reflected appraisals, and interpersonal strategies. *Journal of Personality, 68*, 725–756.

Lemelle, C. J., & Scielzo, S. A. (2012). How you feel about yourself can affect how you feel about your job: A meta-analysis examining the relationship of core self-evaluations and job satisfaction. *Journal of Business Diversity, 12*(3), 116–133.

Lepine, J. A., Erez, A., & Johnson, D. E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology, 87*, 52–65.

Lo, A., & Abbott, M. J. (2013). Review of the theoretical, empirical, and clinical status of adaptive and maladaptive perfectionism. *Behaviour Change, 30*, 96–116.

Maslach, C. (2012). Burnout in the workplace: A global problem in need of solution. *International Journal of Psychology, 47*(SI), 549–549.

Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin, 108*, 171–194.

McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective* (2nd ed.). New York: Guilford Press.

McDowell, W. C., Boyd, N. G., & Bowler, W. M. (2007). Overreward and the impostor phenomenon. *Journal of Managerial Issues, 19*, 95–110.

McGregor, L. N., Gee, D. E., & Posey, K. E. (2008). I feel like a fraud and it depresses me: The relation between the imposter phenomenon and depression. *Social Behavior and Personality, 36*, 43–48.

Meyer, J. P., & Allen, N. J. (1997). *Commitment in the workplace: Theory, research and application*. Thousand Oaks, CA: Sage.

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior, 61*, 20–52.

Meyer, J. P., Stanley, D. J., Jackson, T. A., McInnis, K. J., Maltin, E. R., & Sheppard, L. (2012). Affective, normative, and continuance commitment levels across cultures: A meta-analysis. *Journal of Vocational Behavior, 80*(2), 225–245.

Motowidlo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance, 10*, 71–83.

O'Boyle, E. H., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. (2012). A meta-analysis of the dark triad and work behavior: A social exchange perspective. *Journal of Applied Psychology, 97*(3), 557–579.

Obschonka, M., Schmitt-Rodermund, E., Silbereisen, R. K., Gosling, S. D., & Potter, J. (2013). The regional distribution and correlates of an entrepreneurial-prone personality profile in the United States, Germany, and the United Kingdom: A socioeconomical perspective. *Journal of Personality and Social Psychology, 105*, 104–122.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington.

Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Organizational citizenship behavior: Its nature, antecedents, and consequences*. Thousand Oaks, CA: Sage.

Oriel, K., Plane, M. B., & Mundt, M. (2004). Family medicine residents and the impostor phenomenon. *Family Medicine, 36*, 248–252.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviours and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviours. *Leadership Quarterly, 1*(2), 107–142.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management, 26*, 513–563.

Powell, D. M., & Meyer, J. P. (2004). Side-bet theory and the three-component model of organizational commitment. *Journal of Vocational Behavior, 65*, 157–177.

Robinson, J. P., Shaver, P. R., Wrightsman, L. S., & Andrews, F. M. (1991). *Measures of personality and social psychological attitudes*. San Diego, CA: Academic Press.

Ross, S. R., & Krukowski, R. A. (2003). The impostor phenomenon and maladaptive personality: Type and trait characteristics. *Personality and Individual Differences, 34*, 477–484.

Ross, S. R., Stewart, J., Mugge, M., & Fultz, B. (2001). The impostor phenomenon, achievement dispositions, and the Five factor Model. *Personality and Individual Differences, 31*, 1347–1355.

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600–619.

Soenens, B., Vansteenkiste, M., Luyten, P., Duriez, B., & Goossens, L. (2005). Maladaptive perfectionistic self-representations: The mediational link between psychological control and adjustment. *Personality and Individual Differences, 38*, 487–498.

Sonnak, C., & Towell, T. (2001). The impostor phenomenon in British university students: Relationship between self-esteem, mental health, parental rearing style and socioeconomic status. *Personality and Individual Differences, 31*, 863–874.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295–319.

Stumpf, H., & Parker, W. D. (2000). A hierarchical structural analysis of perfectionism and its relation to other personality characteristics. *Personality and Individual Differences, 28*, 837–852.

Stumpp, T., Hülsheger, U. R., Muck, P. M., & Maier, G. W. (2009). Expanding the link between core self-evaluations and affective job attitudes. *European Journal of Work and Organizational Psychology, 18*, 148–166.

Tett, R. P., & Burnett, D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology, 88*, 500–517.

Thompson, T., Davis, H., & Davidson, J. (1998). Attributional and affective responses of imposters to academic success and failure outcomes. *Personality and Individual Differences, 25*, 381–396.

Thompson, T., Foreman, P., & Martin, F. (2000). Impostor fears and perfectionistic concern over mistakes. *Personality and Individual Differences, 29*, 629–647.

Tonidandel, S., & LeBreton, J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. *Journal of Business and Psychology, 26*, 1–9.

Towers Watson (2012, July). *2012 Global Workforce Study: Engagement at risk: Driving strong performance in a volatile global environment.*

Van Vuuren, M., de Jong, M. D. T., & Seydel, E. R. (2008). Contributions of self and organizational efficacy expectations to commitment. *Employee Relations, 30*, 142–155.

Want, J., & Kleitman, S. (2006). Impostor phenomenon en self-handicapping: Links with parenting styles en self-confidence. *Personality and Individual Differences, 40*, 961–971.

Watson, J. M. (2012). Educating the disagreeable extravert: Narcissism, the Big Five personality traits, and achievement goal orientation. *International Journal of Teaching and Learning in Higher Education, 24*(1), 76–88.

Whitman, M. V., & Shanine, K. K. (2012). Revisiting the impostor phenomenon: How individuals cope with feelings of being in over their heads. *Research in Occupational Stress and Well-Being, 10*, 177–212.

Wille, B., & De Fruyt, F. (2014). Fifty shades of personality: Integrating Five-Factor Model bright and dark sides of personality at work. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 7*, 121–126.

Wille, B., De Fruyt, F., & De Clercq, B. (2013). Expanding and reconceptualizing aberrant personality at work: Validity of Five-Factor Model aberrant personality tendencies to predict career outcomes. *Personnel Psychology, 66*, 173–223.

Woods, S. A., Lievens, F., De Fruyt, F., & Wille, B. (2013). Personality across working life: The longitudinal and reciprocal influences of personality on work. *Journal of Organizational Behavior (IRIOP Special Issue), 34*, 7–25.