

**University of Houston**

---

**From the Selected Works of L. A. Witt**

---

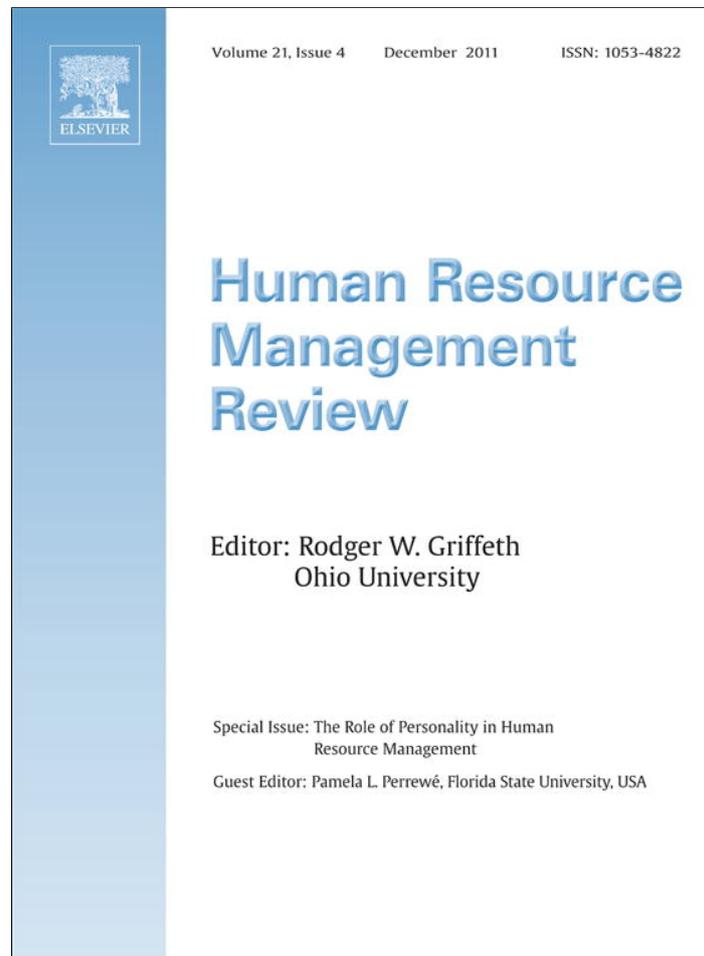
2011

**A review of personality and performance:  
Identifying boundaries, contingencies, and future  
research directions**



Available at: <https://works.bepress.com/witt/22/>

Provided for non-commercial research and education use.  
Not for reproduction, distribution or commercial use.



This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>



Contents lists available at ScienceDirect

## Human Resource Management Review

journal homepage: [www.elsevier.com/locate/humres](http://www.elsevier.com/locate/humres)

## A review of personality and performance: Identifying boundaries, contingencies, and future research directions

Lisa M. Penney<sup>\*</sup>, Emily David, L.A. Witt*Department of Psychology, University of Houston, United States*

## ARTICLE INFO

*Keywords:*Job performance  
Personality  
Big Five  
Trait activation  
Trait interactions

## ABSTRACT

This article reviews the literature linking the Big Five personality traits with job performance in order to identify the most promising directions for future research. Specifically, we recommend expanding the criterion domain to include internal and external service-oriented behavior as well as adaptive performance. We also review situational moderators of the personality–performance relationship and suggest additional moderators at the task, social, and organizational levels. Finally, we discuss trait interactions and explain why we expect that our capability to predict employee behavior will be considerably improved by considering the interaction among traits.

© 2010 Elsevier Inc. All rights reserved.

The use of personality measures to predict job performance has a long and storied history. In 1965, Guion and Gottier concluded that personality tests were not valid predictors of performance and therefore should not be used in employee selection (Guion and Gottier (1965)). In the decades that followed, many challenged this assertion (see Hogan (2005) for a historical review). However, methodological advances in meta-analytic techniques and the advent of the now widely-accepted Big Five model of personality – Conscientiousness, Extraversion, Agreeableness, Emotional Stability, and Openness to Experience renewed interest in personality as a selection device among academics.

Although empirical evidence demonstrates that the Big Five account for significant variance in performance criteria, some researchers have argued that their validities are moderate at best. Some have even argued that the low validity issue combined with issues regarding faking should preclude the widespread use of personality tests in selection contexts (Hurtz & Donovan, 2000; Morgeson et al., 2007; Tett & Christiansen, 2007). Despite the ongoing debate, we argue that personality is an important determinant of individual behavior in the workplace. Whereas we acknowledge the limitations of both past research findings and the use of personality in selection contexts, we are optimistic that continued research and refinement of theoretical issues will yield favorable evidence demonstrating the utility of the Big Five in predicting employee behavior. Our goal was not to review the history of the debate or to provide a thorough review of the validity evidence of the Big Five with performance, as others have already done this well (see Barrick, Mount, & Judge, 2001; Hogan, 2005; Rothstein & Goffin, 2006). Rather, our primary objective was to illustrate what we believe are the most promising directions for future research in personality and performance.

Specifically, we hope to contribute to the personality literature by offering possible explanations for the modest validities associated with the Big Five and further our understanding of personality and behavior. To that end, we had three goals. The first was to demonstrate the importance of carefully defining the criterion domain. The second was to review the literature examining situational moderators of the personality–performance relationship. The third was to describe how varying levels of one trait can impact the expression of other traits. In particular, we hoped to show that certain traits may either intensify or constrain the effects of other personality facets. We begin by reviewing theories describing the relationship between personality and performance. These frameworks provide the underlying rationale that drives the most promising future directions for research on personality and performance.

<sup>\*</sup> Corresponding author. Department of Psychology, University of Houston, Houston, TX 77204 5022. Tel.: +1 713 743 8031; fax: +1 713 743 8588.  
E-mail address: [lpennney@uh.edu](mailto:lpennney@uh.edu) (L.M. Penney).

## 1. Theories of personality and performance

### 1.1. Personality and motivation

The most widely-accepted theories regarding the relationship between personality and job performance focus on work motivation as the key mediating mechanism (Barrick & Mount, 2005; Hogan, 1996; Hogan & Holland, 2003; Kanfer & Ackerman, 2000). Although motivation has been defined in many ways, the most commonly cited theories focus on the cognitive processes underlying goal-setting, defined as the “arousal, direction, intensity and persistence of voluntary actions that are goal directed” (Mitchell, 1997, p. 60).

Barrick and his colleagues (e.g., Barrick, Mitchell, & Stewart, 2003; Barrick & Mount, 2005; Barrick, Stewart, & Piotrowski, 2002) have heavily researched the cognitive-motivational processes that mediate the personality–performance relationship. They noted that because the Big Five and job performance are broadly defined, the goals or intentions that mediate the relationship between personality and performance should be equally as broad. They outlined three motivational intentions that they expected to influence behavior in the workplace. The first, communion-striving, refers to goals related to fostering positive relationships in the workplace. The second, status striving, refers to “goals directed toward obtaining power and dominance within a status hierarchy” (Barrick et al., 2003, p. 66). Together, these two motivational intentions are comparable to the socioanalytic idea that individual behavior in groups, including the workplace, is driven by the motivations to get along and get ahead (Hogan & Holland, 2003). The third motivational intention, accomplishment striving, refers to goals related to task achievement. Within this third intention, Barrick and Mount (2005) suggested that personality can affect motivation in one of two ways: (a) by influencing what one chooses to do and where they choose to work (i.e., the direction of behavior), or (b) by impacting the amount of effort one puts forth (i.e., the intensity of the behavior).

Schneider's (1987) attraction–selection–attrition (ASA) paradigm predicts that people are attracted to environments filled with other people like themselves. Accordingly, individuals high in Extraversion may seek excitement and social stimulation, causing them to be drawn to jobs, fields, and organizations that are characterized by other highly energized and talkative people. Recent research has corroborated this notion, showing that personality does indeed influence the type of environments that workers seek (Barrick, Mount, & Gupta, 2003; Judge & Cable, 1997; Schneider, Smith, & Paul, 2001).

More attention has been focused on the relationship between personality and the intensity of work behavior. For example, Gellatly (1996) described the cognitive process model of motivation and task performance. Applicable primarily to Conscientiousness, this theory describes how individuals who work towards challenging goals are likely to be more motivated and have higher performance than those not working towards specific goals. Further, individual differences in Conscientiousness are predictive of performance expectancy, performance valence, and goal choice, which then lead to differences in task performance. In other words, exacting, ambitious, and disciplined workers (i.e., those high in Conscientiousness) are more likely to believe they can succeed, choose difficult goals, and set high performance standards for themselves (Gellatly, 1996). Further supporting this theory, several researchers have used Conscientiousness as a proxy for motivation because employees high in this dimension are more likely to persevere and effectively engage in self-discipline (Colquitt & Simmering, 1998), be more proactive (Barrick, Mount, & Strauss, 1993), and exert more effort (Mount & Barrick, 1995) than employees low in this dimension. Indeed, Schmidt and Hunter (1998) labeled Conscientiousness the most important trait-based motivation variable in the field.

Barrick et al. (2003) proposed that the other Big Five dimensions may also relate to job performance through their effect on one or more proximal motivational intentions. Specifically, they argued that Emotional Stability would also be associated with accomplishment striving, as low-Emotional Stability individuals are less concerned with completing tasks than high-Emotional Stability workers. According to Malouff, Schutte, Bauer, and Mantelli (1990), individuals high in instability, hopelessness, and depression (factors related to Emotional Stability) are unlikely to be goal-oriented. Instead, Emotion Stability, particularly when low, may also be associated with the motivation to reduce negative emotions or avoid failure. Agreeableness, which is associated with the tendency to be friendly and generous, is likely to be associated with communion-striving. Barrick et al. (2003) expected that the assertiveness and high energy associated with Extraversion would be related to motivational intentions for status striving. Finally, because it is not related to many work outcomes and is the least understood of the Big Five, they made no predictions regarding Openness to Experience. However, the imaginative and curious nature of individuals high in Openness suggests they may be motivated by novelty. Hence, they may direct their resources toward the pursuit of novel situations or creative ideas, perhaps even when simpler solutions are available and equally as viable. Empirically supporting the link between personality and motivation, a meta-analysis by Judge and Ilies (2002) demonstrated that the Big Five had a robust multiple-correlation with goal-setting, expectancy, and self-efficacy motivation. Moreover, in a study of sales professionals, Barrick et al. (2002) found that the relationships of Conscientiousness and Extraversion with sales performance were mediated by accomplishment and status striving, respectively.

In sum, the primary mechanism through which personality affects job performance is motivation. That is, personality traits are associated with broad intentions to pursue certain types of goals, and to the extent that those goals are congruent with job requirements, traits are likely to facilitate effective performance. By allowing employees to more effectively define and achieve work goals, personality acts as a key contributor to high task performance. However, the evidence to date is largely based on cross-sectional studies; thus our understanding of these relationships would benefit from additional longitudinal (e.g., Colquitt & Simmering, 1998) and experimental designs. Moreover, empirical validation requires not only predictors that are well-defined and theoretically linked to criteria but also criteria that are equally well-defined. In the following section, we discuss performance

criteria and offer suggestions on how the criterion domain can be expanded in ways that may better illustrate the validity of the Big Five.

## 2. Job performance: Defining performance criteria

Accurately defining performance criteria is a critical step in empirical validation. It is a measurement issue in that criterion measures should be reliable and valid, as well as a business issue, as strategy defines success (i.e., what behaviors and outcomes matter). However, defining performance criteria is also a conceptual issue, as criteria should accurately represent all important performance requirements of the target job (Penney & Borman, 2005). If criterion measures fail to capture all of the important aspects of a job, the validity estimates are likely to be attenuated. Therefore, we focus our discussion on the latter point.

For the purposes of validating personality measures, we urge researchers to focus on performance measures that reflect employee behaviors (i.e., “goal-relevant actions that are under the control of the individual;” Campbell, McCloy, Oppler, & Sager, 1993, p. 40) as opposed to the effectiveness of those actions. Measures of effectiveness, such as sales volume, are certainly important from an organization’s standpoint, but they are likely to be more reflective of individual differences in abilities or skills (e.g., cognitive ability, social skill) and are frequently contaminated by factors beyond the control of employees (e.g., size and location of sales territory). In contrast, employee behavior and effort (e.g., diligently following-up on leads; developing and maintaining positive relationships with customers) are more likely to be determined by individual differences in motivation and personality.

Campbell, Gasser, and Oswald (1996) argued that rather than focusing on global measures of job performance, we should instead examine specific dimensions or facets of performance. Whereas significant progress has been made in expanding the criterion domain beyond simply capturing the formal task-related requirements of jobs, we suggest that further expansion of the criterion domain will likely yield stronger validity evidence for the Big Five. In the sections that follow, we first review the current status of performance criteria in a broad sense and briefly review evidence for the validity of the Big Five in relation to those criteria. Then, we discuss what we believe are the most promising directions for expanding and refining the criterion space.

Today, most organizational scientists agree that overall job performance can be defined in terms of three broad dimensions (Rotundo & Sackett, 2002): task performance, contextual performance, and counterproductive behavior. Task performance refers to activities that contribute either directly or indirectly to the organization’s technical core (Borman & Motowidlo, 1997). To illustrate, task performance for a postal delivery employee may entail, among other things, delivering mail items to the correct address in a timely manner. In contrast, contextual performance contributes to organizational effectiveness in ways that shape the organizational, social, and psychological context in which task performance occurs. Examples of behaviors falling into this category include volunteering for extra duties, helping others, and persisting with extra enthusiasm. For a postal delivery employee, contextual performance may include smiling and chatting with customers or hand-delivering letters to people standing outside their home. Counterproductive behavior refers to volitional behaviors by employees that have the potential to harm an organization or its members (Rotundo & Sackett, 2002; Spector & Fox, 2005). Examples of counterproductive behavior include theft, deliberately performing work slowly or incorrectly, insulting or ignoring others at work, sabotage, and withdrawal (e.g., coming to work late, leaving early, and calling in “sick”). Continuing with the postal example, counterproductive behavior may include stealing coupons from the mail or leaving a mailbox open during a rainstorm.

Of all the Big Five traits, Conscientiousness has shown the strongest and most consistent validities across all three performance dimensions (Barrick & Mount, 1991; Barrick et al., 2001; Berry, Ones, & Sackett, 2007; Borman, Penner, Allen, & Motowidlo, 2001; Hurtz & Donovan, 2000; Organ & Ryan, 1995; Salgado, 2002; Tett, Jackson, & Rothstein, 1991). In addition, Emotional Stability has also shown fairly consistent validities with job performance and counterproductive behavior but not contextual performance.

The validity evidence for Agreeableness and Extraversion has been mixed with regard to task performance, although the validity of these traits may depend on the job. However, Agreeableness does predict significant variance in contextual performance and counterproductive behavior; in general, those relationships are stronger for behavior directed at other people as opposed to organizations (e.g., Berry et al., 2007). In contrast, the validities for Extraversion with contextual performance and counterproductive behavior are generally weak (Berry et al., 2007; Borman et al., 2001; Salgado, 2002). Similarly, Openness to Experience has not demonstrated significant validities for task, contextual, or counterproductive performance. In addition to their individual effects, however, the Big Five also contribute incremental validity in the prediction of performance over general mental ability (e.g., Mount, Witt, & Barrick, 2000; Schmidt & Hunter, 1998) and are more valid when considered together than when considered separately (Frei & McDaniel, 1998; Judge, Heller, & Mount, 2002).

### 2.1. Expanding the criterion domain

We suggest that the validity of the Big Five may be enhanced by making improvements in how we define performance criteria. For example, Mount, Barrick, and Stewart (1998) noted two significant trends in jobs over the last 20 years: (a) an increase in service jobs and (b) the increased use of work teams to accomplish tasks. Moreover, as a result of globalization and the emergence and adaptation of new technologies, the modern workplace is increasingly complex and characterized by rapid change (Burke, Pierce, & Salas, 2006). We suggest that these three trends highlight potentially fruitful areas for expanding the criterion domain. We present our case in the sections that follow.

### 2.1.1. Service-oriented behavior and work teams

In 2007, Chandra reported that service industries comprise nearly 90% of the US economy (Chandra (2007)). Moreover, the US Bureau of Labor Statistics (2006) predicted a 19% growth in service occupations between 2004 and 2014. A defining characteristic of service organizations is the heavy reliance upon interpersonal contact between employees and customers to deliver products or services (Johns, 1999). Thus, capturing the interpersonal service aspects of performance is likely to be of great importance in service organizations.

Researchers have already expanded contextual performance to include service-oriented behaviors, that is, “behaving in a conscientious manner in activities surrounding service delivery to customers” (Bettencourt, Gwinner, & Meuter, 2001, p. 30). Service-oriented behaviors include maintaining a positive attitude, being courteous to customers regardless of circumstances, and attending to customer requests in a timely and thorough manner. Applying theories of personality and work motivation, we suggest that these behaviors are likely to be exhibited by individuals motivated by communion- and achievement-striving.

Bettencourt et al. (2001) examined the relationship between personality and service-oriented citizenship behaviors using traits similar to the Big Five. They defined service orientation as “an individual’s predisposition to provide superior service through responsiveness, courtesy, and a genuine desire to satisfy customers’ needs” (p. 31). This is conceptually similar to both Conscientiousness and Agreeableness, as it reflects elements of both achievement- and communion-striving. They also examined empathy, which shares conceptual overlap with Agreeableness as both are associated with compassion. They found that these traits predicted significant variance in service-oriented citizenship behaviors beyond job attitudes and job knowledge (Bettencourt et al., 2001).

Service-oriented behaviors have typically been discussed in terms of the treatment of external customers. However, for at least two reasons, internally-directed service behaviors are also important. First, interdependent teams require intense collaboration, communication, and coordination of activities in order to meet work goals (Stevens & Campion, 1994). Traits associated with the desire to maintain group harmony and work diligently (i.e., Agreeableness and Conscientiousness) are likely to predict performance in teams. Indeed, the Mount et al. (1998) meta-analysis indicated that the validities for Agreeableness and Conscientiousness are higher for jobs that require interpersonal interactions, particularly those that require teamwork. Second, an emerging literature suggests that internal service contributes to organizational effectiveness and external customer satisfaction (Johnston, 2008; Miles & Snow, 1995; Mills & Ungson, 2001). Schneider and his colleagues have positioned internal service as a necessary condition for the development of service climate and the resulting external service (e.g., Schneider, Macey, & Young, 2006). Ehrhart, Witt, Schneider, and Perry (in press) found that a robust service climate does not yield excellence in external customer service in the absence of effective internal service delivered to retail units. Like external service, internal service reflects not only the accuracy and speed of the transaction but also the treatment of the customer. The former likely reflects Conscientiousness and Emotional Stability, and the latter likely reflects Extraversion, Agreeableness, and Emotional Stability. We argue that a focused effort on both internal and external service behaviors is likely to improve the validity of the Big Five traits.

### 2.1.2. Adaptive performance

Work on adaptive performance began in the sales literature (McIntyre, Claxton, Anselmi, & Wheatley, 2000). Since then, management researchers have explored adaptive performance with increasing frequency as an important work criterion (e.g., Chen, Thomas, & Wallace, 2005; Han & Williams, 2008; Lang & Bliese, 2009). Krischer and Witt (2010) defined adaptive performance as consisting of: (a) recognizing the need or opportunities for change, (b) proactively enhancing competencies and behaviors in response to either the anticipated or current change, and (c) effectively applying the adjusted competencies in the workplace. They emphasized that adaptive performance encompasses a set of behaviors, not merely ability and/or intent. Adaptive performance is particularly important in today’s rapidly changing, technological, and global workplace (Offermann & Gowing, 1990).

Pulakos, Arad, Donovan, and Plamondon (2000) proposed that adaptive performance contains eight facets: handling emergencies or crisis situations, handling work stress, solving problems creatively, dealing with uncertain and unpredictable work situations, learning work tasks, technologies, and procedures, demonstrating interpersonal adaptability, demonstrating cultural adaptability, and demonstrating physically oriented adaptability. Despite these varied components, Pulakos et al. (2002) found that a unidimensional factor structure best fit their adaptive performance measure.

In line with limited previous research, we suggest that personality may impact the ability of workers to behaviorally and psychologically adapt to changing situations. LePine, Colquitt, and Erez (2000) found that although cognitive ability alone predicted task performance before change was implemented, workers high in Openness to Experience and, surprisingly, low in Conscientiousness made the best decisions following an unexpected change in the task context. Post hoc analyses revealed that the dependability facets of Conscientiousness (rather than the volitional aspects) were responsible for individuals’ inability to adapt to changing requirements (LePine et al., 2000). Pulakos et al. (2002) also replicated the finding that high Openness to Experience resulted in better adaptive performance.

In sum, the nature of jobs is changing in at least two ways. One is a trend away from manufacturing to service jobs, which has increased the importance of interpersonal effectiveness. The other is near-constant change, which reflects both frequent advances in technology and the availability of information in the global economy. The frequency and intensity of change have heightened the importance of adaptive performance. We acknowledge that researchers have already expanded the criterion domain to include service-oriented and adaptive behaviors. However, we emphasize two points. One is that attempts to validate the Big Five are more likely to yield accurate outcomes when focused specifically on behaviors reflecting facets of performance (e.g., adaptive performance) rather than overall performance. Second, empirical attention given to service and adaptive behaviors remain

disproportionate to their importance. Therefore, we encourage researchers to utilize performance measures that reflect these behaviors. We also call for the development of new criteria that capture performance-related behavior in emerging aspects of the workplace, such as teamwork in virtual teams.

### 3. Situational moderators

Although the study of personality main effects on performance has a rich history, in recent years researchers have shifted their focus to identifying the boundary conditions of such effects. The [Tett et al. \(1991\)](#) meta-analysis highlighted the importance of choosing personality predictors based on theoretical links between traits and job demands identified in a job analysis. Similarly, [Barrick and Mount \(1991\)](#) reported higher validities when traits were matched to job demands (e.g., Extraversion in sales and manager positions).

The idea that the impact personality has on behavior depends on characteristics of the work situation is not new. For example, [Mischel \(1977\)](#) argued that traits will only manifest in behavior in weak as opposed to strong situations. In recent years, theoretical advancements have moved beyond the broad idea of situational strength or press ([Murray, 1938](#)) to explain more specifically how and why different situations allow the expression of certain traits. In particular, the theory of trait activation asserts that the presence of trait-relevant situational cues more so than the strength of a situation determines trait expression ([Tett & Guterman, 2000](#); [Tett & Burnett, 2003](#)). [Tett and Burnett \(2003\)](#) offered the example of a new employee moving into an office left untidy by a previous employee. The messy office serves as a situational cue for the trait of orderliness – a facet of Conscientiousness – by providing an opportunity to clean up the workspace. The situation may be strong (i.e., the employee receives a clear directive from a supervisor to clean the office or risk termination) or weak (i.e., no such directive is received). The weak situation allows for variability in behavioral responses based on the individual's proclivity for orderliness. However, because the same situation is less relevant to Extraversion, for example, it provides little opportunity to observe Extraversion-based variability in behavior.

According to [Tett and Burnett \(2003\)](#), situational cues exist at the task, social, and organizational levels. Next, we review research at each level and propose new directions for study.

#### 3.1. Task-level demands

Task-level demands refer to characteristics of job tasks and job requirements. As [Tett and Burnett \(2003\)](#) noted, [Holland's \(1985\)](#) RIASEC model (realistic, investigative, artistic, social, enterprising and conventional) is the most widely used taxonomy of job demands. Although empirical evidence suggests that the Big Five are differentially related to vocational preferences associated with the RIASEC model (e.g., [DeFruyt & Mervielde, 1999](#)), a recent meta-analysis has also shown that interests and values overshadow personality in the prediction of organizational attraction and person–organization fit ([Kristof-Brown, Zimmerman, & Johnson, 2005](#)). Future research that investigates the role of the Big Five in predicting performance in jobs that offer ample opportunity to engage in tasks complementary to vocational preferences is likely to yield considerable utility.

Autonomy, defined as the amount of discretion employees have in determining how to perform job tasks ([Hackman & Oldham, 1975](#)), is a job demand that has received some empirical attention in relation to the Big Five. According to [Barrick et al. \(2003\)](#), jobs with high autonomy allow employees to behave in idiosyncratic ways; hence, the validity of personality is likely to be higher in jobs with high as opposed to low-autonomy. [Barrick and Mount \(1993\)](#) found that Conscientiousness and Extraversion were more predictive of managerial performance in jobs high rather than low in autonomy ( $\beta$ 's = 1.22 and .17, respectively). Similarly, [Gellatly and Irving \(2001\)](#) reported that Extraversion was a valid predictor of contextual performance only among managers reporting high levels of autonomy ( $\beta = .99, p < .05$ ). Surprisingly, they also found that Agreeableness exhibited a positive relationship with contextual performance when autonomy was high ( $\beta = .90, p < .05$ ), but a negative relationship when autonomy was low ( $\beta = -1.1, p < .05$ ). They suggested that high-Agreeableness people may have difficulty in low-autonomy managerial jobs wherein they are required to enforce rules.

One job demand that may be a promising area for future research is emotional labor. Jobs that require emotional labor or emotion work ([Zapf, 2002](#)) involve direct contact with clients, and employees in those jobs must manage the display of their emotions as part of their formal job requirements. Emotional display rules include the expression of positive emotions, such as service industry requirements of providing “service with a smile,” as well as requirements to suppress the display of negative emotions such as anxiety, anger, or fear (e.g., 911 operators must remain calm on the line).

In their meta-analysis, [Mount et al. \(1998\)](#) reported that Emotional Stability and Agreeableness are valid for jobs requiring dyadic service interactions (e.g., residential counselors, customer service representatives, and telemarketers). Although the estimated true validities they reported were significant, they were not terribly high (.14 and .22 for Emotional Stability and Agreeableness, respectively). However, they did not examine emotional labor demands, per se. It is possible that the kinds of interactions employees have with clients may affect validity estimates. For example, in a study of volunteer counselors, [Bakker, Van Der Zee, Lewig, and Dollard \(2006\)](#) found that Emotional Stability and Agreeableness protected employees from burnout under trying conditions. These two traits were unrelated to burnout when employees had few negative experiences with clients but were significantly and negatively related to burnout when employees had many negative experiences. Because burnout is related to job performance ([Cropanzano, Rupp, & Byrne, 2003](#); [Halbesleben & Bowler, 2007](#)), [Bakker et al.'s \(2006\)](#) results suggest that the validity of Emotional Stability and Agreeableness with job performance may be higher in jobs where employees are likely to have many negative encounters with clients or the public (e.g., nursing and law enforcement).

Another potentially relevant aspect of service work is the duration of the relationship with clients or customers. For example, Gutek, Bhappu, Liao-Troth, and Cherry (1999) distinguished between service relationships and service encounters. The former involves repeated interactions between a customer and service provider over time (e.g., hair stylist and accountant), whereas the latter involves interactions wherein the customer and service employee have no expectation of future interactions (e.g., cashier and food service). Because the cumulative effect of being responsive and courteous to customers may be particularly important in long-term relationships, such traits as Conscientiousness and Agreeableness may be more crucial to the performance of employees who must maintain service relationships compared to the performance of employees who primarily engage in service encounters.

In sum, whether or not emotional labor demands or the duration of client relationships affect the validity of the Big Five traits may be fertile ground for future research. Precision in defining the nature of the task is critical to accurately defining the validity of the Big Five.

### 3.2. Social-level demands

Relative to task-level demands, more research has been conducted on the impact that different social demands have on the validity of the Big Five traits on performance. Barrick et al. (2003) proposed that different traits would be relevant for jobs that require cooperation among coworkers compared to jobs with competitive demands. From a trait activation and motivational striving standpoint, cooperative situations provide cues for Agreeableness, as well as abundant opportunities for employees to fulfill their need for communion-striving. Moreover, Digman (1997) argued that Conscientiousness, Agreeableness, and Emotional Stability are indicative of proper socialization, such as an individual's ability to demonstrate equanimity and self-discipline and get along with others. Thus, these traits may be particularly relevant in cooperative situations. In contrast, competitive situations provide cues for Extraversion because they offer greater opportunities to achieve status.

Mount et al. (1998) found that Agreeableness and Emotional Stability are valid predictors of performance in jobs requiring interpersonal interaction, particularly those requiring cooperative, interdependent teamwork (.33 and .37, respectively). Furthermore, Hogan and Holland (2003) reported that Emotional Stability, Conscientiousness, and Agreeableness are valid in jobs where getting along is emphasized (i.e., those involving high levels of interdependence or teamwork;  $\rho$ 's = .34, .31, and .23, respectively). They also found that Emotional Stability, Extraversion, and Openness predicted performance in jobs where getting ahead is emphasized (i.e., highly competitive environments, such as sales;  $\rho$ 's = .22, .26, and .15, respectively). Similarly, Barrick and Mount (1991) reported that Extraversion is a valid predictor of performance in sales and managerial jobs ( $\rho$ 's = .15 & .18, respectively).

Although the moderating role of social demands has been relatively well explored, we suggest that more research is needed to investigate the impact of workgroup personality composition on the relationship between individual personality and performance. For example, Liao, Joshi, and Chuang (2004) argued that high-Conscientiousness and high-Agreeableness employees work more effectively with others that have similar personality traits, whereas Extraverts work better with dissimilar others. They found higher levels of interpersonal deviance in groups with high-Conscientiousness dissimilarity and high-Extraversion similarity, and higher levels of organizational deviance in groups with high Agreeableness dissimilarity. More research is needed to determine whether the personality composition of workgroups is related to other dimensions of individual and group performance.

### 3.3. Organization-level demands

According to Tett and Burnett (2003), work demands at the organization level “are captured in organizational culture and climate” (p. 507), and employees are likely to perform better in organizations with cultures that match their personality. Whereas Judge and Cable (1997) showed that individuals are more attracted to organizations with cultures that match their personality, they did not investigate performance. Few studies have examined the impact of organizational culture and climate on task performance. However, a number of studies have examined the effects of related variables on contextual performance and counterproductive behavior.

Witt, Kacmar, Carlson, and Zivnuska (2002) examined how organizational politics affect the relationships between Conscientiousness, Agreeableness, and Extraversion and the interpersonal facilitation dimension of contextual performance. Politically charged environments are unfair, unpredictable, and characterized by self-serving behaviors that are performed without regard for or at the expense of others at work. Witt et al. reasoned that employees low in Conscientiousness, Extraversion, or Agreeableness may be more sensitive to unfair exchanges and accordingly refrain from helping others in politically charged environments. However, individuals high in those traits are likely to exhibit high levels of interpersonal facilitation regardless of politics because they are motivated by achievement, status, and communion, respectively. As predicted, they found that the negative effect of politics on interpersonal facilitation was attenuated for individuals high in Agreeableness. However, employees engaged in less contextual performance when politics were high as opposed to low regardless of Conscientiousness and Extraversion levels.

Hogan, Rybicki, Motowidlo, and Borman (1998) investigated whether the number of opportunities for advancement in an organization affected the validity of personality. They suggested that because Extraverted individuals are motivated to achieve status and recognition, they would engage in more contextual performance in jobs that offer many opportunities for advancement. However, when few such opportunities exist, contextual performance is more strongly predicted by the disposition to work diligently. They found that in jobs with few opportunities for advancement, the strongest predictor of contextual performance was

Conscientiousness as measured by the Hogan Personality Inventory (HPI) Prudence scale ( $r = .19$ ). In contrast, in jobs with ample opportunities for advancement, the strongest predictor of contextual performance was Extraversion as measured by the HPI Ambition scale ( $r = .21$  and  $.12$  for interpersonal facilitation and work dedication, respectively,  $p$ 's =  $.01$  and  $.05$ , respectively).

Other organizational climate variables that may affect the validity of the Big Five traits are work environments that are unfair, complex, or otherwise stressful. For example, a number of studies in the job stress literature have shown that individuals high in trait negative affectivity are more likely than individuals low in trait negative affectivity to engage in deviant or counterproductive behavior when experiencing stressful work conditions, such as organizational injustice (Skarlicki, Folger, & Tesluk, 1999), constraints, conflict (Fox, Spector, & Miles, 2001), role stressors (Bowling & Eschleman, 2010), and incivility (Penney & Spector, 2005). Although not one of the Big Five, high negative affectivity is generally considered to be comparable to low-Emotional Stability (e.g., Larsen, Diener, & Lucas, 2002; Watson & Clark, 1984).

Counterproductive behavior is often described as a manifestation of the negative emotions that employees experience when confronted with stressful conditions in the workplace (Spector, 1998). Thus, when in a high-stress environment, individuals low in Emotional Stability may be motivated to reduce or cope with their negative emotions by engaging in counterproductive behavior, such as taking longer breaks or making fun of coworkers (Diefendorff & Mehta, 2007; Fox et al., 2001; Liu & Perrewe, 2005; Penney & Spector, 2007). Furthermore, the time low-Emotional Stability employees spend coping with their emotions, as well as the counterproductive means they may use to cope, divert attention away from job task activities and likely adversely impact their job performance.

High-stress or complex work environments may also affect the validity of other Big Five traits (Barrick et al., 2003). For example, because high-Agreeableness employees are motivated to build cooperative relationships with others, they likely have a strong social network upon which they can rely for professional support to facilitate job performance. Their social network may be particularly useful in difficult work environments. Further, because Conscientiousness is associated with goal-setting and the motivation to achieve (Barrick et al. 2003; Judge & Ilies, 2002), high-Conscientiousness employees may be more likely to persist in the face of obstacles and search for effective strategies to meet performance requirements compared to low-Conscientiousness employees. Colbert, Mount, Harter, Witt, and Barrick (2004) found that conscientiousness and organizational support did interactively predict counterproductive behavior. Similarly, Bowling and Eschleman (2010) found that high-Conscientiousness employees are less likely to engage in counterproductive behavior when they experience work stressors (e.g., interpersonal conflict, constraints, and role stressors) compared to low-Conscientiousness employees.

At least one study indicates that the overall quality of social interactions among work colleagues can affect the validity of the Big Five traits. Kamdar and Van Dyne (2007) found that Conscientiousness and Agreeableness were more strongly related to task performance and helping behaviors when leader-member or team-member exchanges were of poor as opposed to high quality. Thus, an organizational culture characterized by the presence of high quality exchanges may act as a strong situation that elicits more helping and better task performance regardless of personality. However, the presence of poor exchanges may provide greater opportunities for employees high in Conscientiousness or Agreeableness to work harder and engage in more helping in order to improve exchanges and meet work goals. Similarly, Skarlicki et al. (1999) found that when perceiving high levels of organizational injustice, high-Agreeableness employees engaged in less retaliatory behaviors than low-Agreeableness employees. Thus, there is some evidence that the presence of unfair or otherwise stressful work conditions may affect the validity of the Big Five. However, our review suggests that this is a relatively unexplored area.

In sum, an abundance of literature demonstrates that the expression of traits in job-related behavior depends on situational cues. As such, we believe that much can be gained by developing a comprehensive taxonomy of situational factors that are likely to impact the personality-performance relationship. The work by Barrick, Mount, and Gupta (2003) and Tett and Burnett (2003) are excellent building blocks for such a taxonomy. However, in addition to being affected by the external work environment, the validity of personality traits may also be affected by the "internal" environment (i.e., an individual's other personality traits). Accordingly, our final goal was to describe how the expression of traits varies as a function of other traits.

#### 4. Trait interactions

That personality traits do not exist in a vacuum, but co-exist within individuals along with a constellation of other traits, has been acknowledged by many scholars. However, most studies examining personality-performance relationships have examined bivariate relationships between a specific personality facet dimension and core or global job performance (Arthur, Woehr, & Graziano, 2001). In order to more fully explain behavior, including performance, the joint impact of multiple traits should be explored (Hogan, Hogan, & Roberts, 1996).

There are at least two reasons for examining the impact of multiple traits in concert. First, personality researchers have found that some items may have meaningful secondary loadings on other traits (Hofstee, de Raad, & Goldberg, 1992; Johnson & Ostendorf, 1993); that is, the Big Five have been criticized for being non-orthogonal (Ones, Viswesvaran, & Dilchert, 2005). The Abridged Big Five Dimensional Circumplex (AB5C; Hofstee et al., 1992; Hofstee et al., 1992; Johnson & Ostendorf, 1993) considers second-order factor loadings of the Big Five traits. It presents pairs of the Big Five traits in circular models and directly assesses the intersection between traits with items designed to capture specific trait combinations (e.g., Low-Emotional Stability and High-Extraversion) as opposed to a single trait (Judge & Erez, 2007). The validity of the Big Five circumplex model has been supported by measurement studies (e.g., Johnson & Ostendorf, 1993).

Second, despite research demonstrating the validity of the Big Five circumplex and repeated calls for research examining trait interactions (Barrick & Mount, 2005; Hogan et al., 1996; John & Srivastava, 1999), few studies have empirically examined the

interaction of the Big Five traits in relation to job performance (Judge & Erez, 2007; Witt, 2001b, 2002a,b; Witt et al., 2002). In all of these studies, the interaction between two traits explained incremental variance in job performance beyond the additive effects of individual traits. Moreover, a number of studies have provided empirical evidence that the interaction among personality traits accounts for significant incremental variance in other important employee outcomes (e.g., helping behavior, emotional exhaustion, subjective well-being, resistance tactics, complaining, problem-drinking, and strain; Bamberger & Bacharach, 2006; Burke & Witt, 2004; Hotard, McFatter, McWhirter, & Stegall, 1989; Judge & Erez, 2007; King, George, & Hebl, 2005; Lynn & Steel, 2006; Perry et al., 2008; Witt et al., 2002; Zellars, Perrewé, Hochwarter, & Anderson, 2006). Although only two studies examined the interaction of two traits using the circumplex model (i.e., Judge & Erez, 2007; Witt, 2002a), Judge and Erez (2007) compared the circumplex approach to the statistical interaction approach and found that the results produced were similar. Therefore, because non-circumplex measures of the Big Five are the most widely used, we discuss the interaction of traits in terms of the statistical interaction among traits. However, we acknowledge that the circumplex approach is a meaningful alternative for conceptualizing trait combinations.

In the sections that follow, we articulate how the theories of motivation discussed earlier may explain how the Big Five traits may interact to influence work-related outcomes. Further, we review empirical studies on trait interactions and offer suggestions for future research.

#### 4.1. Theory for trait interactions

Barrick et al. (2003) argued that the Big Five are related to performance through motivational processes related to goal-setting. Halbesleben and Bowler (2007) described motivation as, “the investment of resources” (p. 94), such as time, attention, and effort. Thus, the Big Five traits are associated with various goals, and individuals are motivated to direct their resources toward behaviors that will facilitate reaching those goals.

For the sake of parsimony, we focus only on two-trait combinations while acknowledging that an individual's entire constellation of traits may be important. Additionally, we refrain from discussing interactions with Openness to Experience, as the motivational strivings or goals associated with this trait are not well understood. Further, we limit our discussion to the interactions of Conscientiousness and Emotional Stability with other traits for three reasons. First, as Barrick et al. (2003) noted, Conscientiousness and Emotional Stability are most relevant for the workplace because the motivation to achieve and remain focused on goals should facilitate performance in all jobs. Second, they are the most valid traits across criteria, although modest uncorrected validities suggest that there may be room for improvement. Third, nearly all studies to date on trait interactions have included at least one of those two traits.

Because individuals can be described in terms of their standing on multiple traits, their behavior is likely determined by multiple goals. Motivation researchers acknowledge that individuals can have multiple and even competing goals simultaneously (Austin & Vancouver, 1996; Emmons, King, & Sheldon, 1993). According to Austin and Vancouver (1996), goal conflict is associated with negative emotions that individuals are motivated to reduce, and the resolution of goal conflict may be positive or negative. Much research has been conducted to determine how goals and goal conflict affect performance (e.g., Erez, Early, & Hulin, 1985; Kernan & Lord, 1990; Locke, Smith, Erez, Chuh, & Schaffer, 1994; Slocum, Cron, & Brown, 2002). However, the majority of goal conflict studies have focused on specific, lower order goals, particularly those that are externally imposed (e.g., meeting a performance quota). Few have examined the mid-level internal personal strivings that Barrick et al. (2003) argue are most relevant in explaining the personality–performance relationship.

Because mid-range goals reflect “broad general intentions or motives that direct future courses of action at work” (Barrick et al. 2003, p. 65) and thus may be general enough to be satisfied by varied courses of action, goal conflict may not be a major issue for Big Five trait interactions. For example, Snyder (1993) argued that individual behavior may be influenced by more than one motive, and any single behavior may fulfill any number of goals. Similarly, Austin and Vancouver (1996, p. 340) argued that the principle of equifinality (i.e., that an end-state or goal can be achieved by a number of means) can be used to explain personality (i.e., goals are stable, even if the means are not). Thus, with regard to how traits interact, we argue that individuals will search for and engage in behaviors that allow them to achieve multiple goals simultaneously. However, goal conflict may be most relevant with regard to low-Emotional Stability because individuals are generally motivated to reduce negative emotions. For example, strong negative emotions are generally associated with short response latencies that may immediately divert and consume attention, energy, and other resources (Lord & Harvey, 2002). Because they tend to experience frequent negative emotions that divert their attention and other resources, low-Emotional Stability employees may have fewer resources to direct toward work goals. Thus, because Emotional Stability may be most likely to affect the validity of other traits, we begin by discussing trait interactions involving Emotional Stability.

#### 4.2. Conscientiousness $\times$ Emotional stability

High-Conscientiousness employees are motivated to achieve and therefore allocate their resources toward behaviors that facilitate the completion of work-related goals in a timely manner. When Conscientious employees are high in Emotional Stability, they have ample, energy, attention, and other resources for investment toward achieving performance goals. However, high-Conscientiousness employees who are low in Emotional Stability have fewer resources available to direct toward performance because their attention and other resources are frequently consumed by worry and fear of failure. Therefore, the positive

relationship between Conscientiousness and desired performance (e.g., task and contextual performance) is likely to be stronger for employees high than low in Emotional Stability (Witt, 2003).

To our knowledge, only four studies have examined this particular interaction in relation to employee behavior (King et al., 2005; Perry et al., 2010; Witt, 2001b; Witt & Jones, 2003). King et al. (2005) examined supervisor-rated interpersonal helping (volunteering to help others with work tasks) among women in the construction industry. They found that the relationship between Conscientiousness and helping was positive when employees were high in Emotional Stability ( $\beta = 1.08$ ) but negative when employees were low in Emotional Stability ( $\beta = -.20$ ). Witt (2001b) found that conscientiousness was associated with high levels of job performance among emotionally stable workers and low levels of job performance among emotionally unstable workers. Similarly, recent work suggests that these personality traits jointly influence effectiveness in virtual teams (Perry et al., 2010).

Witt and Jones (2003) reported that Conscientiousness and Emotional Stability interactively predicted length of employment (i.e., time in job before involuntary turnover). We suspect that the negative relationship between Conscientiousness and other forms of counterproductive behavior may also become attenuated or negative among low-Emotional Stability employees. Whereas high-Conscientiousness employees generally refrain from counterproductive behavior because of their goal-orientation, those who are also low in Emotional Stability may be willing to engage in these behaviors as a form of coping, knowing that their ability to focus on task completion will continue to be compromised unless they manage their negative emotions. For example, Komar, Brown, Komar, and Robie (2008) noted that "because conscientiousness partially reflects achievement motivation, it might be expected to positively relate with any strategy... that results in success" (p. 142). Thus, these employees may be willing to invest their available resources in strategies that may be considered counterproductive in order to achieve work goals. For example, they may yell at uncooperative coworkers to motivate them to provide resources needed to avoid failure. They may also invest their remaining resources conservatively to avoid further resource loss that would interfere with goal achievement, such as taking longer breaks to regain composure or withholding effort, perhaps preferring to produce less work than to produce poor quality work.

#### 4.3. Extraversion $\times$ Emotional stability

With regard to performance, Emotional Stability is likely to have a similar effect on Extraversion. Extraversion is associated with the motivation to achieve status and rewards. Accordingly, Extraverted employees are motivated to allocate their resources toward behaviors that will provide them with opportunities for recognition and positive feedback. However, the ability of Extraverted employees to effectively do so may be compromised when they are low in Emotional Stability. For example, Judge and Erez (2007) found that Extraversion was positively related to supervisor performance ratings among high-Emotional Stability employees, but exhibited a negative (albeit weak) relationship with performance among low-Emotional Stability employees. As stated previously, evidence for the validity of Extraversion is not particularly strong. The main effect for Extraversion on performance was non-significant in Judge and Erez's study. However, Judge and Erez's results suggest that the validity of Extraversion may be improved by jointly considering employees' standing on Emotional Stability.

Additionally, Hotard et al. (1989) found that the relationship between Extraversion and subjective well-being depends on Emotional Stability. Extraversion was unrelated to well-being among those high in Emotional Stability. That is, high-Emotional Stability Introverts and Extraverts reported relatively high levels of well-being. In contrast, Extraversion was positively related to well-being only among those low in Emotional Stability. Perhaps the sociability associated with Extraversion serves as a resource that helps them cope with their anxiety and fear, thereby facilitating well-being. However, Introverts have fewer social resources they can leverage to cope with negative emotions and therefore have lower levels of well-being.

#### 4.4. Agreeableness $\times$ Emotional stability

Compared to Conscientiousness and Extraversion, the effect Emotional Stability has on the relationship between Agreeableness and work outcomes may be somewhat different. That is, high-Emotional Stability rather than low-Emotional Stability may attenuate the relationship between Agreeableness and performance. Employees low in both Agreeableness and Emotional Stability are not motivated to maintain positive relationships with others and have been described as defensive, quarrelsome, cranky, and impatient (Hofstee et al., 1992). Thus, they are unlikely to get along with coworkers and may exhibit relatively low task and contextual performance and high counterproductive behavior. However, high-Agreeableness, low-Emotional Stability employees strive to maintain harmonious relationships with others and are described as good-tempered, albeit emotional or high-strung (Hofstee et al., 1992; Johnson & Ostendorf, 1993) and may engender compassion from coworkers. Thus, although their attention may be frequently distracted by strong emotions, their motivation to cultivate positive relationships may facilitate the cultivation of a strong social support network upon which they can rely for work-related assistance. Accordingly, Agreeableness may be positively related to task and contextual performance and negatively related to counterproductive behavior among employees low in Emotional Stability.

In contrast, the relationship between Agreeableness and performance outcomes may be weaker among high-Emotional Stability employees. Although low-Agreeableness, high-Emotional Stability employees may not be motivated to proactively invest their time and energy in cultivating social relationships, their calm demeanor may prevent them from antagonizing others; thus they may not necessarily refuse to help others or engage in much counterproductive behavior. High-Agreeableness, high-Emotional Stability employees strive to maintain harmony and are described as patient, relaxed and optimistic (Hofstee et al.,

1992; Johnson & Ostendorf, 1993) and likely engage in high levels of contextual performance and low levels of counterproductive behavior.

#### 4.5. *Conscientiousness* × *Agreeableness*

The interaction between Conscientiousness and Agreeableness has received growing attention. High-Conscientiousness employees strive to achieve, but the manner in which they pursue work goals may depend on their standing on Agreeableness. Specifically, employees who value achievement and communion (high-Conscientiousness, high-Agreeableness) are likely to pursue work goals in a manner that also fosters positive relations with others. For example, they may support others' work activities, voluntarily help coworkers with job tasks, and refrain from actions that may upset or offend others, such as complaining, being disrespectful, or arguing with others. However, employees who are driven to achieve (high-Conscientiousness) but have little concern for others (low-Agreeableness) may have few reservations about engaging in behavior that might offend others in their pursuit of work goals. Because resources are limited, they may also believe that helping others is an unwise investment of their time and energy because it detracts from their own goals.

For example, Witt et al. (2002) suggested that “when highly conscientious people lack interpersonal competence, dysfunctional outcomes may result” (p. 165). They described high-Conscientiousness workers low in Agreeableness as “micromanaging, unreasonably demanding, inflexible, curt, and generally difficult to deal with” (p. 165) and found that supervisors gave those employees lower performance ratings than their counterparts high in Agreeableness. Similarly, King et al. (2005) reported that the relationship between Conscientiousness and helping behavior was positive when employees were high in Agreeableness ( $\beta = 1.10$ ), but negative when employees were low in Agreeableness ( $\beta = -.40$ ). That is, employees high in both Conscientiousness and Agreeableness were more likely to help coworkers than high-Conscientiousness, low-Agreeableness employees. Further, Burke and Witt (2004) reported that employees high in Conscientiousness and low in Agreeableness engage in more complaining and spur more dissension among group members than other employees, behaviors that can be construed as interpersonal deviance. Together, these studies suggest that high-Conscientiousness may not always lead to positive employee behavior, particularly among employees who are also low in Agreeableness.

#### 4.6. *Conscientiousness* × *Extraversion*

Both Conscientiousness and Extraversion are associated with ambitious motivations (i.e., achievement and status, respectively) that direct attention and other resources toward goal completion. Thus, the multiplicative effect of both traits may better predict performance outcomes than either trait alone. We suggest that high levels of both traits are likely associated with higher levels of performance compared to low levels of one or both traits. Employees who are high in both traits are bold and optimistic (high-Extraversion), as well as focused and diligent (high-Conscientiousness); thus, they may set higher goals and be particularly effective and persistent in directing their resources toward behaviors that facilitate goal achievement. Although low-Conscientious, high-Extraversion employees seek recognition and status, they are unlikely to spend their time, energy, and other resources on effective strategies (low-Conscientiousness). For example, they may waste time, perform work haphazardly, or engage in unproven, high-risk strategies. High-Conscientious, high-Extraversion individuals are described as ambitious, serious, and purposeful (Hofstee et al., 1992; Johnson & Ostendorf, 1993), whereas low-Conscientious, high-Extraversion individuals are described as unruly, playful, and reckless.

High-Conscientious, low-Extraversion employees are described as deliberate, formal, and cautious (Hofstee et al., 1992; Johnson & Ostendorf, 1993). Although they may work diligently to achieve work goals, they may set less ambitious goals than their high-Extraversion counterparts because they are not motivated by status, and may therefore exhibit relatively lower performance. Finally, employees who are low on both traits are unlikely to perform at a high level because they care little about reaching work-related goals or status. Thus, the relationship between Conscientiousness and performance outcomes may be stronger for employees high as opposed to low in Extraversion.

Testing these notions, Witt (2002a) applied the AB5C to study the interactive effects of Conscientiousness and Extraversion on performance ratings. Across three samples, he found that whereas high-Extraversion, low-Conscientious workers annoyed their supervisors and had low performance ratings, those workers high in both Extraversion and Conscientious had the highest performance ratings. He found similar results in predicting sales volume (Witt, 2001a). Similarly, King et al. (2005) found that employees high in both traits engaged in more interpersonal helping than other employees. Zellars et al. (2006) found lower levels of strain (e.g., job tension and emotional exhaustion) among individuals with high levels of both Conscientiousness and positive affectivity, a trait that some consider comparable to Extraversion (e.g., Watson, 2000), compared to individuals with high levels of only one trait. We encourage future researchers to examine the interactive effect of these two traits on counterproductive work behavior and adaptive performance outcomes.

In sum, there are both theoretical and empirical evidence that the validity of the Big Five traits may be improved by considering the multiplicative effect of two traits as opposed to only main effects. The interaction of some trait pairs has received more empirical attention than others. In particular, the Emotional Stability × Agreeableness and Conscientiousness × Extraversion interactions have received relatively little empirical attention. Applying theories of motivation, we offered general predictions regarding how the interaction of these traits may affect performance-related outcomes in the hope of inspiring future studies.

Moreover, because replication is one of the cornerstones of science, we also encourage further exploration of the significant interactions that have already been examined. For example, whereas Witt et al. (2002) found that the relationship between

Conscientiousness and performance depends on Agreeableness, Warr, Bartram, and Martin (2005) found no significant interactions between Conscientiousness and the remaining Big Five traits in predicting objective sales performance. Warr et al. acknowledged that the reasons for their findings are unclear, as they expected significant interactions. However, interaction effects are difficult to detect due to low power issues (e.g., Cronbach, 1987), and the low sample sizes in the Warr et al. studies (n's ranged from 78 to 119) may have further contributed to their non-significant findings. Nevertheless, replication studies may prove valuable as contradictory findings may identify additional contingencies on the relationship between personality and performance.

Over the long-term, what may offer the highest potential is progress on the configural nature of the Big Five. That is, considering all traits simultaneously is likely to provide the greatest prediction. For example, we invite the reader to consider the behavior of workers high in Conscientiousness, low in Openness to Experience, low in Emotional Stability, low in Agreeableness, and high in Extraversion. We suggest that such workers are high-maintenance and therefore ineffective in a variety of ways.

## 5. Conclusion

We offer optimism regarding the usefulness of personality in predicting work-related behavior and suggestions for what we believe to be the most fruitful avenues of research to help us better understand the personality–performance relationship and improve predictive validities. In particular, we suggest that further expansion of the criterion domain to include internal and external service-oriented behaviors as well as adaptive performance. We also encourage further theoretical and empirical investigation into situational moderators and join others (e.g., Barrick et al. 2003; Tett & Burnett, 2003) in their call for a comprehensive taxonomy of situational variables likely to impact the validity of the Big Five traits. Finally, we suggest that our ability to predict important employee behavior is likely to be considerably improved by considering the interaction among traits as opposed to main effects. Whereas our discussion of trait interactions was limited to trait pairs, we also acknowledge the potential value in considering how a third trait or situational variables may further improve our ability to predict employee behavior.

In conclusion, we suggest that current ways of measuring performance may not fully capture the entire range of behaviors that are likely to be influenced by personality and a more comprehensive view of personality is needed, as traits do not exist or work in isolation. We hope that our review inspires researchers to remember that considering a single personality trait in isolation is akin to using only physical agility to select for basketball players. Just as the relationship between Extraversion and performance may greatly depend on Conscientiousness levels, even nimble individuals will not excel at basketball if they are blind.

## References

- Arthur, W., Jr., Woehr, D. J., & Graziano, W. G. (2001). Personality testing in employment settings: Problems and issues in the application of typical selection practices. *Personnel Review*, *30*, 657–676.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *120*, 338–375.
- Bakker, A. B., Van Der Zee, K. I., Lewig, K. A., & Dollard, M. F. (2006). The relationship between the Big Five personality factors and burnout: A study among volunteer counselors. *Journal of Social Psychology*, *146*, 31–50.
- Bamberger, P. A., & Bacharach, S. B. (2006). Abusive supervision and subordinate problem drinking: Taking resistance, stress and subordinate personality into account. *Human Relations*, *59*, 723–752.
- Barrick, M. R., Mitchell, T. R., & Stewart, G. L. (2003). Situational and motivational influences on trait–behavior relationships. In M. R. Barrick, & A. M. Ryan (Eds.), *Personality and work: Reconsidering the role of personality in organizations* (pp. 60–82). San Francisco: Jossey-Bass.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*, 1–26.
- Barrick, M. R., & Mount, M. K. (1993). Autonomy as a moderator of the relationship between the Big Five personality dimensions and job performance. *Journal of Applied Psychology*, *78*, 111–118.
- Barrick, M. R., & Mount, M. K. (2005). Yes, personality matters: Moving on to more important matters. *Human Performance*, *18*, 359–372.
- Barrick, M., Mount, M., & Gupta, R. (2003). Meta-analysis of the relationship between the five-factor model of personality and Holland's occupational types. *Personnel Psychology*, *56*, 45–74.
- Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment*, *9*, 9–30.
- Barrick, M. R., Mount, M. K., & Strauss, J. P. (1993). Conscientiousness and performance on sales representatives: Test of the mediating effects of goal setting. *Journal of Applied Psychology*, *78*, 715–722.
- Barrick, M. R., Stewart, G. L., & Piotrowski, M. (2002). Personality and job performance: Test of the mediating effects of motivation among sales representatives. *Journal of Applied Psychology*, *87*, 43–51.
- Berry, C. M., Ones, D. S., & Sackett, P. R. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis. *Journal of Applied Psychology*, *92*, 410–424.
- Bettencourt, L. A., Gwinner, K. P., & Meuter, M. L. (2001). A comparison of attitude, personality, and knowledge predictors of service-oriented organizational citizenship behaviors. *Journal of Applied Psychology*, *86*, 29–41.
- Borman, W. C., & Motowidlo, S. M. (1997). Task performance and contextual performance: The meaning for personnel selection. *Human Performance*, *10*, 99–109.
- Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment*, *9*, 52–69.
- Bowling, N. A., & Eschleman, K. J. (2010). Employee personality as a moderator of the relationships between work stressors and counterproductive work behavior. *Journal of Occupational Health Psychology*, *15*, 91–103.
- Burke, C. S., Pierce, L. G., & Salas, E. (Eds.). (2006). *Understanding adaptability: A prerequisite for effective performance within complex environments*. Oxford, United Kingdom: Elsevier.
- Burke, L. A., & Witt, L. A. (2004). Personality and high maintenance behavior. *Journal of Business and Psychology*, *18*, 349–363.
- Campbell, J. P., Gasser, M. B., & Oswald, F. L. (1996). The substantive nature of performance variability. In K. R. Murphy (Ed.), *Individual differences and behavior in organizations*. San Francisco: Jossey-Bass.
- Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of performance. In N. Schmitt, & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 35–70). San Francisco: Jossey-Bass.
- Chandra. U.S. economy: Services growth slowed last month, Retrieved May 16, 2007 from [http://www.bloomberg.com/apps/news?pid=20601087&sid=a\\_jpn8SslY78&refer=home](http://www.bloomberg.com/apps/news?pid=20601087&sid=a_jpn8SslY78&refer=home).

- Chen, G., Thomas, B., & Wallace, J. (2005). A multilevel examination of the relationships among training outcomes, mediating regulatory processes, and adaptive performance. *Journal of Applied Psychology, 90*, 827–841.
- Cronbach, L. J. (1987). Statistical tests for moderator variables: Flaws in analyses recently proposed. *Psychological Bulletin, 102*(3), 414–417.
- Colbert, A. E., Mount, M. K., Harter, J. K., Witt, L. A., & Barrick, M. R. (2004). Interactive effects of personality and situation on workplace deviance. *Journal of Applied Psychology, 89*, 599–609.
- Colquitt, J., & Simmering, M. (1998). Conscientiousness, goal orientation, and motivation to learn during the learning process: A longitudinal study. *Journal of Applied Psychology, 83*, 654–665.
- Cropanzano, R., Rupp, D., & Byrne, Z. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. *Journal of Applied Psychology, 88*, 160–169.
- DeFruyt, F., & Mervielde, I. (1999). RIASEC types and Big Five traits as predictors of employment status and nature of employment. *Personnel Psychology, 52*, 701–727.
- Diefendorff, J. M., & Mehta, K. (2007). The relations of motivational traits with workplace deviance. *Journal of Applied Psychology, 92*, 967–977.
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73*, 1246–1256.
- Ehrhart, K. H., Witt, L. A., Schneider, B., & Perry, S. J. (In press). Service employees give as they get: Internal service as a moderator of the service climate-service outcomes link. *Journal of Applied Psychology*.
- Emmons, R. A., King, L. A., & Sheldon, K. (1993). Goal conflict and the self-regulation of action. In D. M. Wegner, & J. M. Pennebaker (Eds.), *Handbook of mental control* (pp. 528–550). Englewood Cliffs, NJ: Prentice Hall.
- Erez, M., Early, P., & Hulin, C. (1985). The impact of participation on goal acceptance and performance: A two-step model. *Academy of Management Journal, 28*, 50–66.
- Fox, S., Spector, P. E., & Miles, D. (2001). Counterproductive work behavior (CWB) in response to job stressors and organizational justice: Some mediator and moderator tests for autonomy and emotions. *Journal of Vocational Behavior, 59*, 291–309.
- Frei, R. L., & McDaniel, M. A. (1998). Validity of customer service measures in personnel selection: A review of criterion and construct evidence. *Human Performance, 11*, 1–27.
- Gellatly, I. R. (1996). Conscientiousness and task performance: Test of a cognitive process model. *Journal of Applied Psychology, 81*, 474–482.
- Gellatly, I. R., & Irving, P. G. (2001). Personality, autonomy, and contextual performance of managers. *Human Performance, 14*, 231–245.
- Guion, R. M., & Gottier, R. F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology, 18*, 135–164.
- Gutek, B. A., Bhappu, A. D., Liao-Troth, M. A., & Cherry, B. (1999). Distinguishing between service relationships and encounters. *Journal of Applied Psychology, 84*, 218–233.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology, 60*, 159–170.
- Halbesleben, J., & Bowler, W. (2007). Emotional exhaustion and job performance: The mediating role of motivation. *Journal of Applied Psychology, 92*, 93–106.
- Han, T., & Williams, K. (2008). Multilevel investigation of adaptive performance: Individual- and team-level relationships. *Group & Organization Management, 33*, 657–684.
- Hofstee, W. K. B., de Raad, B., & Goldberg, L. R. (1992). Integration of the Big Five and circumplex approaches to trait structure. *Journal of Personality and Social Psychology, 65*, 563–576.
- Hogan, R. (1996). A socioanalytic perspective on the Five-Factor Model. In J. S. Wiggins (Ed.), *The Five Factor Model of personality* (pp. 163–179). New York: Guilford Press.
- Hogan, R. (2005). In defense of personality measurement: New wine for old whiners. *Human Performance, 18*, 331–341.
- Hogan, R., Hogan, J., & Roberts, B. W. (1996). Personality measurement and employment decisions: Questions and answers. *American Psychologist, 51*, 469–477.
- Hogan, J., & Holland, B. (2003). Using theory to evaluate personality and job performance relations. *Journal of Applied Psychology, 88*, 100–112.
- Hogan, J., Rybicki, S. L., Motowidlo, S. J., & Borman, W. C. (1998). Relations between contextual performance, personality, and occupational advancement. *Human Performance, 11*, 189–207.
- Holland, J. L. (1985). *Making vocational choices: A theory of vocational personalities and work environments* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Hotard, S. R., McFatter, R. M., McWhirter, R. M., & Stegall, M. E. (1989). Interactive effects of Extraversion, Neuroticism, and social relationships on subjective well-being. *Journal of Personality and Social Psychology, 57*, 321–331.
- Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance. The Big Five revisited. *Journal of Applied Psychology, 85*, 869–879.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York: Guilford.
- Johns, N. (1999). What is this thing called service? *European Journal of Marketing, 33*, 958–973.
- Johnson, J. A., & Ostendorf, F. (1993). Clarification of the Five-Factor Model with the abridged Big Five dimensional circumplex. *Journal of Personality and Social Psychology, 65*, 563–576.
- Johnston, R. (2008). Internal service – Barriers, flows, and assessment. *International Journal of Service Industry Management, 19*, 210–231.
- Judge, T. A., & Cable, D. M. (1997). Applicant personality, organizational culture, and organization attraction. *Personnel Psychology, 50*, 359–394.
- Judge, T. A., & Erez, A. (2007). Interaction and intersection: The constellation of emotional stability and extraversion in predicting performance. *Personnel Psychology, 60*, 573–596.
- 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., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87*, 797–807.
- Kamdar, D., & Van Dyne, L. (2007). The joint effects of personality and workplace social exchange relationships in predicting task performance and citizenship performance. *Journal of Applied Psychology, 92*, 1286–1298.
- Kanfer, R., & Ackerman, P. L. (2000). Individual differences in work motivation: Further explorations of a trait framework. *Applied Psychology: An International Review, 49*, 470–482.
- Kernan, M. C., & Lord, R. G. (1990). Effects of valence, expectancies, and goal-performance discrepancies in single and multiple goal environments. *Journal of Applied Psychology, 75*, 194–203.
- King, E. B., George, J. M., & Hebl, M. R. (2005). Linking personality to helping behaviors at work: An interactional perspective. *Journal of Personality, 72*, 585–607.
- Komar, S., Brown, D. J., Komar, J. A., & Robie, C. (2008). Faking and the validity of conscientiousness: A Monte Carlo investigation. *Journal of Applied Psychology, 93*, 140–154.
- Krischer, M., & Witt, L. A. (2010, April). Achieving adaptive performance in the workplace: The compensatory effects of general mental ability and adaptive leadership. Presented at annual meeting of the Society for Industrial and Organizational Psychology, Atlanta.
- Kristof-Brown, A., Zimmerman, R., & Johnson, E. (2005). Consequences of individual's fit at work: A meta-analysis of person–job, person–organization, person–group, and person–supervisor fit. *Personnel Psychology, 58*, 281–342.
- Liao, H., Joshi, A., & Chuang, A. (2004). Sticking out like a sore thumb: Employee dissimilarity and deviance at work. *Personnel Psychology, 57*, 969–1000.
- Lang, J., & Bliese, P. (2009). General mental ability and two types of adaptation to unforeseen change: Applying discontinuous growth models to the task-change paradigm. *Journal of Applied Psychology, 94*, 411–428.
- Larsen, R. J., Diener, E., & Lucas, R. E. (2002). Emotion: Models, measures, and individual differences. In R. G. Lord, R. J. Klimoski, & R. Kanfer (Eds.), *Emotions in the workplace: Understanding the structure and role of emotions in organizational behavior* (pp. 64–106). San Francisco: Jossey-Bass.
- LePine, J. A., Colquitt, J. A., & Erez, A. (2000). Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience. *Personnel Psychology, 53*, 563–593.
- Liu, Y., & Perrewe, P. L. (2005). The role of emotion in employee counterproductive work behavior. Integrating the psychoevolutionary and constructivist perspective. In C. E. J. Hartel, W. J. Zerbe, & N. M. Ashkanasy (Eds.), *Emotions in organizational behavior* (pp. 67–86). Mahwah, NJ: Erlbaum.
- Locke, E. A., Smith, K. G., Erez, M., Chuh, D., & Schaffer, A. (1994). The effect of goal conflict on performance. *Journal of Management, 20*, 67–91.

- Lord, R. G., & Harvey, J. L. (2002). An information processing framework for emotional regulation. In R. G. Lord, R. J. Klimoski, & R. Kanfer (Eds.), *Emotions in the workplace: Understanding the structure and role of emotions in organizational behavior* (pp. 115–146). San Francisco: Jossey-Bass.
- Lynn, M., & Steel, P. (2006). National differences in subjective well-being: The interactive effects of Extraversion and Neuroticism. *Journal of Happiness Studies*, 7, 155–165.
- Malouff, J., Schutte, N., Bauer, M., & Mantelli, D. (1990). Development and evaluation of a measure of the tendency to be goal oriented. *Personality and Individual Differences*, 11, 1191–1200.
- McIntyre, R. P., Claxton, R. P., Anselmi, K., & Wheatley, E. W. (2000). Cognitive style as an antecedent to adaptiveness, customer orientation, and self-perceived selling performance. *Journal of Business and Psychology*, 15, 179–196.
- Miles, R. E., & Snow, C. C. (1995). The new network firm: A spherical structure built on a human investment philosophy. *Organizational Dynamics*, 23, 4–18.
- Mills, P. K., & Ungson, G. R. (2001). Internal market structures: Substitutes for hierarchies. *Journal of Service Research*, 3, 252–264.
- Mischel, W. (1977). The interaction of person and situation. In D. Magnusson, & N. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology*. Hillsdale, NJ: Erlbaum.
- Mitchell, T. R. (1997). Matching motivational strategies with organizational contexts. *Research in Organizational Behavior*, 19, 57–149.
- Morgeson, F. P., Campion, M. A., Dipboye, R. L., Hollenbeck, J. R., Murphy, K., & Schmitt, N. (2007). Reconsidering the use of personality tests in personnel selection contexts. *Personnel Psychology*, 60, 683–729.
- Mount, M. K., & Barrick, M. R. (1995). The Big Five personality dimensions, Implications for research and practice in human resources management. In G. R. Ferris (Ed.), *Research in personnel and human resources management*, Vol. 13. (pp. 153–200) Greenwich, CT: JAI Press.
- Mount, M. K., Barrick, M. R., & Stewart, G. L. (1998). Five Factor Model of personality and performance in jobs involving interpersonal interactions. *Human Performance*, 11, 145–165.
- Mount, M. K., Witt, L. A., & Barrick, M. R. (2000). Incremental validity of empirically keyed biodata scales over GMA and the five factor personality constructs. *Personnel Psychology*, 53, 299–323.
- Murray, H. (1938). *Explorations in personality*. New York: Oxford University Press.
- Offermann, L., & Gowing, M. (1990). Organizations of the future: Changes and challenges. *American Psychologist*, 45, 95–108.
- Ones, D. S., Viswesvaran, C., & Dilchert, S. (2005). Personality at work: Raising awareness and correcting misconceptions. *Human Performance*, 18, 389–404.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, 48, 775–802.
- Penney, L. M., & Borman, W. C. (2005). The prediction of contextual performance. In A. Evers, A. Anderson, & O. Voskuilj (Eds.), *Handbook of personnel selection* (pp. 376–396). Oxford, UK: Blackwell.
- Penney, L. M., & Spector, P. E. (2005). Job stress, incivility, and counterproductive workplace behavior CWB: The moderating role of negative affectivity. *Journal of Organizational Behavior*, 26, 777–796.
- Penney, L. M., & Spector, P. E. (2007). Emotions and counterproductive work behavior. In N. M. Ashkanasy, & C. L. Cooper (Eds.), *Research companion to emotion in organizations* (pp. 183–196). US: Elsevier Science.
- Perry, S. J., Penney, L., & Witt, L. A. (2008, August). Coping with the constraints of self-employment: A person-situation model of entrepreneurial burnout. Unpublished paper presented at the annual meeting of the Academy of Management, Anaheim, CA.
- Perry, S. J., Lorinkova, S., & Witt, L. A. (2010, April). Emotional stability and conscientiousness as moderators of the virtuality–performance relationship. In S. J. Perry and L. A. Witt (Chairs), Predicting virtual team effectiveness: Focusing on the micro-level. Unpublished paper presented at the conference of the Society for Industrial and Organizational Psychology, Atlanta.
- Pulakos, E. D., Arad, S., Donovan, M., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, 85, 612–624.
- Pulakos, E. D., Schmitt, N., Dorsey, D. W., Arad, S., Hedge, J. W., & Borman, S. C. (2002). Predicting adaptive performance: Further tests of a model of adaptability. *Human Performance*, 15, 299–323.
- Rothstein, M. G., & Goffin, R. D. (2006). The use of personality measures in personnel selection: What does current research support? *Human Resource Management Review*, 16, 155–180.
- Rotundo, M., & Sackett, P. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology*, 87, 66–80.
- Salgado, J. F. (2002). The Big Five personality dimensions and counterproductive behavior. *International Journal of Selection and Assessment*, 10, 117–125.
- Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124, 262–274.
- Schneider, B. (1987). The people make the place. *Personnel Psychology*, 40, 437–454.
- Schneider, B., Macey, W. H., & Young, S. A. (2006). The climate for service: A review of the construct with implications for achieving CLV goals. *Journal of Relationship Marketing*, 5, 111–132.
- Schneider, B., Smith, D., & Paul, M. (2001). P-E fit and the attraction–selection–attrition model of organizational functioning: Introduction and overview. *Work motivation in the context of a globalizing economy* (pp. 231–246). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Skarlicki, D. P., Folger, R., & Tesluk, P. (1999). Personality as a moderator in the relationship between fairness and retaliation. *Academy of Management Journal*, 42, 100–108.
- Slocum, J. W., Cron, W. L., & Brown, S. P. (2002). The effect of goal conflict on performance. *The Journal of Leadership and Organizational Studies*, 9, 77–89.
- Snyder, M. (1993). Basic research and practice problems: The promise of a “functional” personality and social psychology. *Personality and Social Psychology Bulletin*, 19, 251–264.
- Spector, P. E. (1998). A control theory of the job stress process. In C. L. Cooper (Ed.), *Theories of organizational stress*. New York: Oxford.
- Spector, P. E., & Fox, S. (2005). A stressor–emotion model of counterproductive work behavior. In S. Fox, & P. E. Spector (Eds.), *Counterproductive work behavior: Investigations of actors and targets* (pp. 151–176). Washington, DC: American Psychological Association.
- Stevens, M. J., & Campion, M. A. (1994). The knowledge, skill, and ability requirements for teamwork: Implications for human resource management. *Journal of Management*, 20, 503–530.
- Tett, R., & Burnett, D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, 88, 500–517.
- Tett, R. P., & Christiansen, N. D. (2007). Personality tests at the crossroads: A response to Morgeson, Campion, Dipboye, Hollenbeck, Murphy, and Schmitt (2007). *Personnel Psychology*, 60, 967–993.
- Tett, R. P., & Guterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, 34, 397–423.
- Tett, R. P., Jackson, D. N., & Rothstein, M. G. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology*, 44, 703–742.
- US Bureau of Labor Statistics. (2006). *Occupational projections and training data* (2006–07 Edition).
- Warr, P., Bartram, D., & Martin, T. (2005). Personality and sales performance: Situational variation and interactions between traits. *International Journal of Selection and Assessment*, 13, 87–91.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, 96, 465–490.
- Witt, L. A. (2001a, April). Extroverts low in conscientiousness produce the greatest sales volume. Unpublished paper presented at the meeting of the Society for Industrial and Organizational Psychology, San Diego.
- Witt, L. A. (2001b, November). Emotional stability and conscientiousness as interactive predictors of job performance. Unpublished paper presented at the annual meeting of the Southern Management Association, New Orleans.
- Witt, L. A. (2002a). The interactive effects of extroversion and conscientiousness on job performance. *Journal of Management*, 28, 835–851.

- Witt, L. A. (2002b, April). Conscientiousness and intellect: Both necessary for performance? Unpublished paper presented at the annual meeting of the Society for Industrial and Organizational Psychology, Toronto.
- Witt, L. A. (2003, April). Conscientiousness may not be enough. In K. Orvis (chair), Spotting the trees: Beyond the Big Five in predicting performance. Unpublished paper presented at the meeting of the Society for Industrial and Organizational Psychology, Orlando.
- Witt, L. A., & Jones, J. W. (2003, April). Very particular people quit first. Unpublished paper presented at the meeting of the Society for Industrial and Organizational Psychology, Orlando.
- Witt, L. A., Kacmar, K. M., Carlson, D. S., & Zivnuska, S. (2002). Interactive effects of personality and organizational politics and contextual performance. *Journal of Organizational Behavior*, 23, 911–926.
- Zapf, D. (2002). Emotion work and psychological well-being: A review of the literature and some conceptual considerations. *Human Resource Management Review*, 12, 237–268.
- Zellars, K. L., Perrewé, P. L., Hochwarter, W. A., & Anderson, K. S. (2006). The interactive effects of positive affect and conscientiousness on strain. *Journal of Occupational Health Psychology*, 11, 281–289.