

BEYOND PERSONALITY TRAITS: A STUDY OF PERSONALITY STATES AND SITUATIONAL CONTINGENCIES IN CUSTOMER SERVICE JOBS

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Although the interactionist approach has been applied to understanding situational influences on the expression of personality at work, examination of within-person variation in personality trait expression in the workplace is lacking. Using experience sampling methodology, this study examined the moment-to-moment influences of situational characteristics on personality states (i.e., situational contingencies) during social interactions on 56 customer service employees over 10 days at work. At the within-individual level, state Conscientiousness was associated with the immediacy of the task, and state Extraversion and Agreeableness were associated with the friendliness of the other party in the interaction. At the between-individual level, self-monitoring did not moderate the associations between situational characteristics and personality states but predicted the mean level of state Conscientiousness at work over and above trait Conscientiousness. Contrary to expectations, the relationship between state Extraversion and friendliness was weaker in customized service jobs than in noncustomized ones.

Although meta-analytic studies have shown that personality traits can predict job performance (Barrick & Mount, 1991; Hurtz & Donovan, 2000), the size of meta-analytic estimates of the criterion-related validity of personality measures has led some to question the usefulness of personality measures in personnel decision making (e.g., Morgeson et al., 2007; Murphy & Dzieweczynski, 2005). Interpreting the average effect of a personality trait across jobs and situations is susceptible to the same criticism leveled at the person side of the person–situation debate (Endler & Magnusson, 1976; Kenrick & Funder, 1988) in that it is essentially searching for the effect of personality traits while

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disregarding or minimizing the influence of the contexts that these traits operate within. Meta-analytic studies of the effect of personality traits, partly due to the availability of information, resort to the use of job category as a surrogate for context with only a few primary studies directly assessing context as a moderator (e.g., Barrick & Mount, 1993; Stewart, 1996). Furthermore, the investigation of the influence of context on the effect of personality traits in the organizational psychology literature has stayed on the between-individual level. Little is known about how context may influence the effect of personality traits within individuals.

Although various researchers have proposed constructs that describe the extent to which an individual tends to vary across different social situations (e.g., Baird, Le, & Lucas, 2006; Donahue & Harary, 1998; Paulhus & Martin, 1988; Snyder, 1974), variation in the expression of personality traits was not a direct focus of study until recent years when Fleeson and colleagues examined personality states using experience sampling methodology (Fleeson, 2001; Fleeson & Leicht, 2006; Fleeson, Malanos, & Achille, 2002). *Personality states* share the same content domain as their corresponding personality traits, but they pertain to how a person is at a *specific moment* rather than how that person is *in general* (Cattell, Cattell, & Rhymer, 1947; Fleeson, 2001; Fridhandler, 1986; Nesselroade, 1988). Fleeson and colleagues conceptualized traits as density distributions of trait-relevant states and found it meaningful to study both the mean and the standard deviation of personality states. The conceptualization of personality states allows the examination of the impact of context on the expression of personality traits at work at the within-individual level, but this is yet unpursued by researchers.

Using experience sampling methodology, this study examined the expression of personality traits in customer service jobs and sought to discover the interplay among the immediate situation, the broader job context, and personality traits at both the within-individual and between-individual level. This study contributes to research and practice in several ways. First, it introduces the concept of personality states in the workplace to organizational researchers and practitioners who assess personality. Second, it provides guidance as to how one might assess personality states at work. Third, it explores some specific contextual variables of relevance in customer service settings as potential points of focus in personality assessment in the workplace. After providing a brief general review of research on personality states, we discuss the implications of the variability of personality states in the workplace and describe a study to assess the extent of this variability and how it relates to contextual features of customer service jobs.

Personality States

A brief review of the “person versus situation” debate on the determinant of behavior across situations may help illuminate the current focus on changes in personality states across situations. The early trait approach to individual behavior focused on the person as the determinant of behavior (Magnusson & Endler, 1977) and maintained that there exists cross-situational consistency in individuals’ trait-relevant behavior such that the rank ordering of individuals across situations will be the same (Mischel & Shoda, 1995). The situational approach started with Mischel’s (1968) critique that there was little evidence in support of the cross-situational consistency assumption and that behaviors were more likely a result of the environment. A heated debate ensued for years. The debate was reconciled after the finding that the average cross-situational consistency coefficient is nonzero, albeit not by much (Bem, 1983; Funder, 1983), thus resulting in the consensus that behavior is influenced both by trait and by situation. As Funder (2008) notes, the dispositional approach either studies the consistency of behaviors in individuals or examines the magnitude of correlation between trait and behavior, whereas the situational approach studies individuals’ average behavioral responses in a small number of situations. Both approaches employ between-subject designs. The result is the failure of the dispositional paradigm to detect situational influence because it averages across situations and the failure of the situational paradigm to detect the dispositional effect because it averages across individuals. Funder suggests a need to shift to within-subject designs, assessing many behaviors under the influences of multiple situations for each individual. Although this ideal research design can be traced back in the writings of Epstein to as early as 1979 (see Funder, 2008), this research paradigm has rarely been adopted until recently (see Block, 1961; Donahue, Robins, Roberts, & John, 1993, for exceptions).

In recent years, Fleeson (2001) examined personality states, defined as the degree to which a specific trait content is expressed at a given moment. For example, a person characterized as being active, assertive, and sociable in general is described as being extraverted in *trait* terms. The associated personality *state* is the extent to which he/she acts in an active, assertive, and sociable way in any specific situation at any given time. Furthermore, Fleeson (2007) incorporates the person, the situational, and the interactionist approaches to personality in a single study by examining *situational contingencies*, which are defined as the association between the fluctuation of a personality state and a given situational characteristic for each individual. For example, Fleeson found that the average situational contingency of state Extraversion on the situation characteristic

of friendliness was significant, suggesting that for the typical individual change in state Extraversion was associated with the friendliness of an interactional partner. Indeed, the contingency of personality states on psychologically active characteristics of different situations helps explain the sizeable variability in personality states. Fleeson's study also showed that situational contingencies differed across individuals. For example, for individuals high on trait Extraversion, their Extraversion state increased when the situation became more anonymous, as opposed to individuals low on Extraversion, whose contingencies of Extraversion on anonymity were negative, such that they tended to become less extraverted when the situation became more anonymous. Finally, situational contingencies for individuals differ reliably, which may further explain the differences that individuals exhibit in the variation of their personality states.

In applying personality tests to predict job performance, psychologists have begun to take the interactionist approach to advance the understanding of situational influences on the effects of personality at work (e.g., Hatrup & Jackson, 1996; Hough & Oswald, 2008). Relevant research has primarily investigated how the effects of personality are moderated by characteristics of the job, such as job type, task type (Hough & Furnham, 2003), and autonomy of the job (Barrick & Mount, 1993). In contrast, the influences of within-job situational cues on personality states have received limited research attention despite relevant theorizing (see Tett & Burnett, 2003). Fleeson's research on personality states in daily life provides a groundwork for examining how situational characteristics facilitate or constrain the expression of personality traits; such an approach can advance psychologists' understanding of situational influences at work.

Situational Contingencies in the Workplace

The implications of situational contingencies at work can be illustrated with two hypothetical employees, A and B, who have the same level of trait Conscientiousness but differ in their situational contingencies of Conscientiousness. Employee A, whose state Conscientiousness is more contingent on the situation, may exert outstanding levels of effort when a deadline is approaching and be meticulous at tasks that are specified by the quality guidelines, but A can be quite nonconscientious at times when the tasks are less important, such as failing to keep his/her work space organized on a day-to-day basis and neglecting details when drafting low-priority e-mail. In contrast, Employee B, whose state Conscientiousness is less contingent on the situation, will display a consistent level of state Conscientiousness in all tasks regardless of situations. The difference between the two employees in their expressions of Conscientiousness at work may lead to important implications for their job performance. Thus,

the investigation of personality states and situational contingencies may contribute to the study of personality at work by increasing our ability to delineate the processes by which personality traits can be linked to job outcomes and by increasing our understanding of how variability in situational characteristics within jobs affects the effects of personality traits.

In this study, we limited job type to customer service jobs that involve interactions in person for three reasons. First, meta-analytic findings indicated that all Big Five traits have nonzero correlations with customer service job performance (Hurtz & Donovan, 2000). If intraindividual variation of personality states is found with customer service jobs, research effort can be directed toward considering such variation to advance understanding of traits-service performance relationships. Second, customer service jobs serve as a contextual boundary in the sense that they all require the satisfaction of customer needs and the acceptability of behavior is usually governed by relevant social norms. It would add another layer of complexity to investigate personality states across different types of job contexts (e.g., sports teams, soldiers, and managers) as the purpose and norms with regard to a certain personality state can be different across these contexts. By constraining the occupational type, extraneous factors influencing the relationship between situation and personality states are lessened. Third, within the category of customer service jobs, there is still variability in job characteristics, which may be associated with intrapersonal variability. For example, a cashier in a fast food restaurant may have a rather detailed procedure to follow in his interaction with the customer, whereas a sales assistant in a shopping mall may have more discretion when helping her customer. It is also expected that situational contingencies will vary for customer service jobs. For example, interactions with coworkers and supervisors may not be the same as those with customers.

Situational Contingency Hypotheses

A number of researchers have attempted to identify similarities among situations and constructed different taxonomies of situations (e.g., Eckes, 1995; Magnusson, 1971; Yang, Read, & Miller, 2006), although none of these are especially focused on work domains or at a level of specificity required for this study. We reviewed the literature on situational taxonomies, previous work on situational characteristics and personality outside work settings, as well the literature on customer service jobs to ascertain which situational characteristics have been linked to both personality expression and customer service performance. We propose three situational characteristics (task focus, friendliness, and service relationship) as predictors of state personality (two adapted from the work of Fleeson, 2007, and one

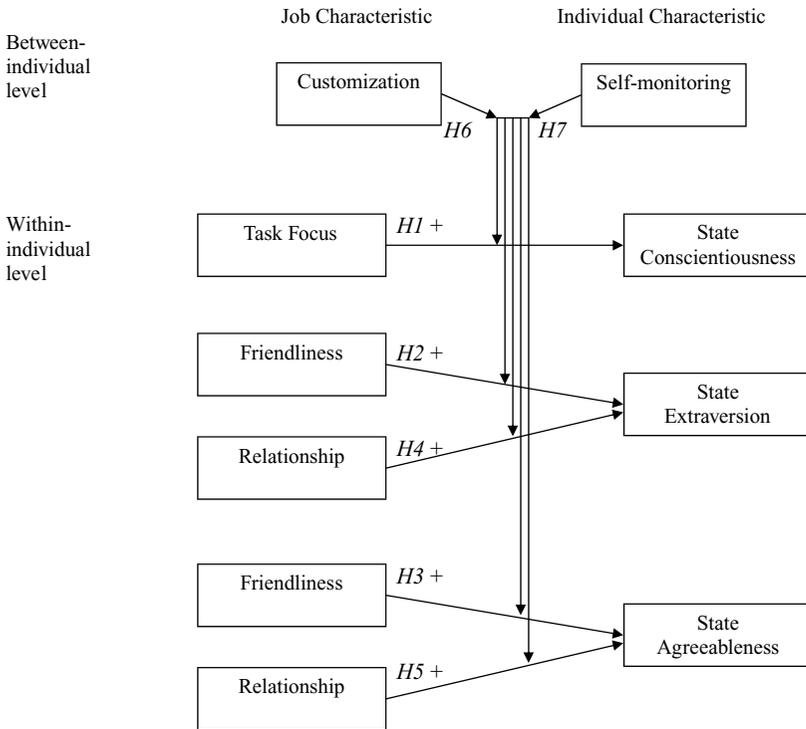


Figure 1: Summary of Hypotheses.

specific to customer service settings). We also propose a job characteristic (customization of service provision) and an individual characteristic (self-monitoring) at the between-individual level as moderators of situational contingencies. A summary of the hypotheses is presented in Figure 1, and the rationale for them is expressed in the following sections.

Task focus. Fleeson (2007) found that task orientation was positively related to state Conscientiousness. However, Fleeson's task orientation was not specific to work tasks. Task focus can be characterized as the assignment of tasks or goals, the presence of an immediate deadline, and the existence of evaluation/observation. There are two reasons to expect a positive relationship between task focus and state Conscientiousness across individuals. First, task focus provides the opportunity for an individual to be Conscientiousness, that is, situational factors cue the activation of trait-relevant behavior (Tett & Burnett, 2003). When the elements of task focus are present, they cue an individual to be hardworking, responsible, and organized. Second, the individual may be rewarded when conscientious in task-oriented situations and punished for not being so. Thus, the outcome

of the individual's behavior in these situations creates the propensity to act conscientiously.

Hypothesis 1: Within individuals, task focus will be positively related to state Conscientiousness.

Friendliness. *Friendliness* of a situation can be defined as how friendly, sociable, and willing to talk others in the situation are. Across various life situations, Fleeson (2007) found friendliness to relate positively to state Extraversion and Agreeableness. For example, when a conversation partner acts friendly, the focal person is likely to pick up on these cues and often responds in a more active way, which amounts to the expression of state Extraversion. In contrast, if the other party seems nonchalant or reserved, the situational cues toward extraverted behavior are absent for the focal individual. In service interactions, a customer's explicit interest or disinterest in carrying on a conversation should also serve as cues to the customer service employees as to how extraverted to be.

Hypothesis 2: Within individuals, friendliness will be positively related to state Extraversion.

The friendliness of interaction is likely to affect state Agreeableness because of norms of reciprocity in social interactions (Cialdini, 1993). When a customer is friendly to the employee, he/she is more likely to be warm and polite (agreeable) to the customer in return. For example, Tan, Foo, and Kwek (2004) found that customers higher in trait Agreeableness elicited higher levels of warmth and friendliness from retail store cashiers. On the other hand, aggressive or uncivil customers can result in employee direct and indirect aggressive behaviors (Harris & Reynolds, 2003).

Hypothesis 3: Within individuals, friendliness will be positively related to state Agreeableness.

Although Fleeson's (2007) findings provide valuable input for the development of Hypotheses 1–3, he investigated situational contingencies in daily life in general whereas the present hypotheses are bounded in a service work context. From a practical perspective, interest lies in the usefulness of state personality concepts in more bounded settings that are the focus of personality assessment research (i.e., within particular job categories).

Service relationship is the level of acquaintance between the individual and the customer and the expectancy of future interactions. Gutek and colleagues (Gutek, 1995; Gutek, Bhappu, Liao-Troth, & Cherry, 1999) defined a service relationship as existing when a service representative expects to serve the same customer over repeated interactions (e.g., doctor and patient), whereas a service encounter refers to one-time only

service interactions (e.g., fast-food restaurant). Although one can think about service relationship as a between-job characteristic, it can also vary across customers within a job. For example, some customers come to the same store regularly whereas others only pay infrequent visits (Gwinner, Gremler, & Bitner, 1998).

Gutek et al. (1999) suggested that customer service workers may cultivate relationships with customers out of their own interests when they expect future interactions, whereas they do not need to for encounters. To cultivate the relationship, customer service employees may try to provide better service to the customer by showing more warmth and being more helpful (being more agreeable), and they can also try to be sociable and talkative to engage the customer (being more extraverted). In essence, Extraversion and Agreeableness can contribute to the provision of good service, which can in turn lead to a better service relationship. Therefore, it is expected that service employees will elevate their state Extraversion and state Agreeableness when the service interaction is perceived as occurring in the context of a relationship rather than an encounter.

Hypothesis 4: Within individuals, perceptions of the service relationship will be positively related to state Extraversion.

Hypothesis 5: Within individuals, perceptions of the service relationship will be positively related to state Agreeableness.

Hypotheses 1–5 predicted the average within-individual contingencies among three situational characteristics (i.e., task focus, friendliness, and service relationship) and three personality states (i.e., Conscientiousness, Agreeableness, and Extraversion). No a priori situational contingencies are hypothesized for Neuroticism and Openness, although we explore the possibility of their existence. Each situational contingency can vary meaningfully across individuals, so we now turn to hypotheses aimed at explaining the between-individual variation of these situational contingencies.

Job Characteristic Hypothesis

The associations between personality states and situational characteristics may not be of the same magnitude across different service jobs. A service provision may be either *customized* or *standard* (Bitner, Booms, & Mohr, 1994; Rogelberg, Barnes-Farrell, & Creamer, 1999); whereas standard service interactions are repeated frequently such that there is either a script or implicit expectation for the employee to behave accordingly (e.g., a cashier at a large retailer), customized service interactions require the employee to discover the needs of the customer and to create the service experience for the customer (e.g., a hairdresser). Standard service

provision is bounded by the service script or existing expectations, and therefore, the expression of individual personality states is constrained. Customized service provision, on the other hand, requires employees to obtain information from the customer. There are greater opportunities for personality states to vary with situational characteristics in a service job with customized service than one with standard service.

Hypothesis 6: Customization of service interaction will moderate the relationship between situational characteristics and personality states between individual. Specifically, the situational contingencies predicted in Hypotheses 1–5 will be stronger in jobs with customized service provision and weaker in jobs with standard service provision.

Individual Difference Hypothesis

Self-monitoring has been proposed as a trait that taps behavioral consistency across situations (Gangestad & Snyder, 1985; Snyder, 1974). As suggested by Gangestad and Snyder (2000), high self-monitors tend to adjust and project their images to impress others in social interactions. They are more attuned to regulating their behaviors to promote situationally appropriate interaction outcomes. Low self-monitors tend to maintain stable and consistent images. Their social behavior highly corresponds to their attitudes, beliefs, and values. Thus, self-monitoring can be expected to influence situational contingencies. Specifically, to the extent that social interactions are bounded within a customer service environment, it is reasonable to expect that high self-monitors may be more attuned to situational appropriateness. Therefore, situational contingencies will be expected to be stronger for individuals high on self-monitoring.

Hypothesis 7: Self-monitoring will moderate the relationship between situational characteristics and personality states between-individual. Specifically, the situational contingencies predicted in Hypotheses 1–5 will be stronger for individuals high on self-monitoring and weaker for individuals low on self-monitoring.

Method

Participants

Three criteria determined eligibility for participation: (a) working at a service job that entails frequent face-to-face interactions with customers;

(b) knowing the work schedule for the next 10 days; and (c) working over 3 hours for at least 2 days a week. Seventy-three undergraduate students participated in exchange for a combination of extra course credits and gift cards up to \$30. The flexibility of reward options was designed to accommodate the needs of different individuals and to increase participation.

Of the 73 participants, three lost data due to either technical problems or failure to charge the Palm handheld, and seven others withdrew for various reasons. Only those who reported more than 30% of surveys as related to interactions with customer, supervisor, and coworker were retained for the final analysis, resulting in a final sample size of 56.

Eighty percent of the participants were female. Eighty-two percent were Caucasians and 13% were African-Americans. The average age was 22 ($SD = 6.00$). Jobs titles varied, ranging from waiter/waitress, cashier, receptionist, to customer service representative, but all were customer service providers.

Apparatus

Palm[®] Zire31 handheld computers, loaded with a Purdue Momentary Assessment Tool program (PMAT; Weiss, Beal, Lucy, & MacDermid, 2004), were used to collect the experience sampling surveys. The handheld is 4 inches long and 2.5 inches wide and can be carried around at work conveniently. Surveys were displayed on the touch screen, and items were filled out by tapping on the response options, using either a stylus or simply a finger tip.

At preprogrammed times, the handheld would beep to remind the participant to fill out the survey. The handheld would beep intermittently for 2 minutes, and then the screen would stay on for another 28 minutes, thus giving the participant a total of 30 minutes to fill out the survey. A survey would be closed if 30 minutes elapsed after the first beep. To reduce distraction from work, the survey was designed to be very brief: Each survey took approximately 2 minutes to finish. In addition to recording survey responses, the response time between two items was recorded automatically.

Study Procedure

An interested participant would e-mail the first author to set up a 30-minute training session. Participants received informed consent information and responded to premeasures prior to the session. The use of one-on-one training sessions was determined by the nature of this study: Each participant would have a different work schedule; hence, the survey times needed to be customized for each of them. The additional benefit of the one-on-one training session is that it allowed the researcher to

establish rapport with each participant and to emphasize the importance of the study, so as to ensure participants' motivation (see Christensen, Barrett, Bliss-Moreau, Lebo, & Kaschub, 2003). Care was taken to ensure that the participant was eligible for the study and participation in the study would not impact his/her work. The participant was shown an experience sampling questionnaire and was instructed on the types of items, as well as the use of the handheld.

After the instruction, the first author consulted with the participant to determine the time for each data collection. For each day the participant would be at work for more than 3 hours, three surveys were programmed, with at least an hour between two adjacent surveys. Participants were instructed to respond to the surveys as soon as possible but not to complete them if it was a major inconvenience for them (e.g., very busy store hours for the entire 30 minutes) and to skip a survey if they were not at work. Participants were made aware that they had up to 30 minutes to complete a survey. They were asked to "refer to the interaction at or immediately before the survey alarm started." The data collection lasted for 10 working days, resulting in a maximum of 30 data points for each individual.

Premeasures

Measures of between-individual variables were taken prior to the one-on-one session. The premeasures included Big Five personality traits, the individual characteristic of self-monitoring, the job characteristic of customization, and demographic information.

Personality traits. The Big Five personality traits were measured using Goldberg's (1999) 50-item International Personality Item Pool (IPIP) Big Five measures. Participants were asked to indicate the degree of accuracy with which a statement described himself/herself, using a seven-point Likert scale, ranging from 1 = *very inaccurate* to 7 = *very accurate*. Example items are (a) Conscientiousness: "Pay attention to details"; (b) Extraversion: "Feel comfortable around people"; (c) Agreeableness: "Make people feel at ease"; (d) Neuroticism: "Get upset easily"; and (e) Openness: "Have a vivid imagination."

Self-monitoring. Self-monitoring was measured using the 13-item Revised Self-Monitoring Scale (RSMS) from Lennox and Wolfe (1984). There are three reasons for using RSMS rather than the more popular Snyder's (1974) 25-item scale or Gangestad and Snyder's (1985) revised 18-item scale. First, the other two scales have been shown to exhibit internal structures different from the self-monitoring theory (Briggs & Cheek, 1988; Briggs, Cheek, & Buss, 1980). Second, the RSMS has been shown to have higher reliability than the other two (Day, Shleicher, Unckless, & Hiller, 2002). Third, the finding by Day et al. (2002) of a 0.19 mean uncorrected correlation between RSMS and job performance

suggests that individuals high on self-monitoring as measured by RSMS could achieve better performance through variation of personality states at work.

The RSMS scale was measured with a seven-point Likert scale, ranging from 1 = *strongly disagree* to 7 = *strongly agree*. A sample item is "In social situations, I have the ability to alter my behavior if I feel that something else is called for."

Customization. Customization was measured using a three-item scale developed through a pilot study. The participants were asked to identify the degree to which statements described their jobs on a seven-point Likert scale ranging from "very inaccurate" to "very accurate." The items are (a) "The customer service employee has to find out the customer's need and then customizes the service for him/her"; (b) "To provide good service, the customer service employee needs to discover what each customer wants"; and (c) "Interactions with customers tend to be unique; what the service employee says and does is different each time."

Experience Sampling Surveys (ESS)

The complete ESS survey is included in Appendix A.

Personality states. We assessed personality states using items from Goldberg's (1992) adjective-based Big Five markers, which have been shown to be valid measures of Big Five traits (Biesanz & West, 2004; Hong, Paunonen, & Slade, 2008). Rather than being asked to describe themselves in general, as is in the case of trait measurement, participants were asked to report the degree to which these adjectives accurately describe *themselves* in *the last interaction with another person* using a five-point scale ranging from 1 = *very inaccurate* to 5 = *very accurate*. These items were used to assess Big Five personality states in Fleeson (2001, 2007), who justified their inclusion based on loading on the correct factor in Goldberg (1992), representing the construct breadth, and ease in the use to describe behavior. The participant then was asked to identify who he/she was primarily interacting with during the last social interaction: (a) a customer (b) a supervisor, (c) a coworker (including peer and subordinate), (d) multiple people, and (e) no one. During the training session, the participant was instructed to identify one focal individual as the primary target of interaction and to refer to that individual when answering the questions. The participant was also told that the "multiple people" option was only appropriate for situations where he/she could not identify a primary target of interaction, such as making an announcement to multiple people. Finally, the "no one" option was intended for situations where there was no recent social interaction to report (e.g., when the participant did not interact with anyone between the end of last survey and the onset of this survey).

Situational characteristics. Measures of situational characteristics were developed via two pilot studies ($N = 214$ and 40) where service employees were asked to recall interactions at work. Some items were adapted from Fleeson (2007), and new items were added as needed. Situational characteristics measures were administered on a five-point Likert scale, ranging from $1 = \text{very inaccurate}$ to $5 = \text{very accurate}$.

Results

Preliminary Analysis

Because the focus of this study is personality states at service work when interacting with customers, supervisors, and coworkers, only those ESS sampled for these situations were relevant. Therefore, ESS describing interaction with multiple people where there was no focal target of interaction (“Multiple people”) and ESS describing no interpersonal interactions (“No one”) were screened and deleted listwise from further analyses. Out of the total 1,159 ESS collected, 1,025 (88%) were retained.

To ensure the quality of responses, survey response time was used to screen surveys that were unlikely to be filled out in a careful manner. If two or more items on an ESS were responded to in less than 1.00 second, this ESS was removed in a listwise manner. Out of 1,025 ESS retained after the first screening, 27 ESS responses from seven individuals were detected and removed from further analyses.

The final ESS sample included 998 surveys from 56 individuals. On average, each individual submitted 18 usable ESS, with a median of 18 (range 9–20). Six hundred and forty-two (64%) of those ESS described interactions with customers, 124 (12%) described interactions with supervisors, and the remaining 232 (23%) pertained to interactions with colleagues or subordinates. The internal consistency of personality states and situational characteristics scales, computed on individuals’ mean ratings, ranged from 0.63 to 0.82 for personality states and from 0.76 to 0.93 for situational characteristics. The item “Sensitive” was dropped from the State Neuroticism scale because of low item-total correlation.

To further ascertain the validity of the state measures of Conscientiousness, Agreeableness, and Extraversion, we conducted a confirmatory factor analysis based on the pooled within-individual covariance structure (Muthén, 1994, step 3). As between-individual differences were of no substantive interest for this analysis, between-individual differences on each item were first removed by within-individual centering each item, that is, subtracting item means from each individual from their item ratings. Using AMOS 17.0 (Arbuckle, 2008), a three-factor model with three items loading on each corresponding factor yielded reasonable fit, $\chi^2 = 263.70$, $df = 24$, $p < 0.001$; CFI = 0.97, TLI = 0.96, RMSEA = 0.10, SRMR =

0.02 (see Marsh, Hau, & Wen, 2004, for a discussion of the cutoff values). In addition, the factors were relatively independent, with estimated factor correlations ranging from 0.00 to 0.14. Thus, we proceeded with the following analysis.

Level-1 data (i.e., states) were aggregated to Level 2 by calculating the mean of item ratings for each individual ($N = 56$). Descriptive statistics, reliability and intercorrelations for Level-2 variables and the means of Level-1 variables are presented in Table 1.

The correlation coefficients between personality traits (Level-2 variables) and the corresponding mean of within-individual personality states (Level-1 variables aggregated to Level 2) are underlined in Table 1. Four out of five correlation coefficients were significant (for Openness, $r = 0.36$; for Extraversion, $r = 0.46$; for Agreeableness, $r = 0.53$; and for Neuroticism, $r = 0.53$), and Conscientiousness was the exception, $r = 0.20$, *ns*.

Note that the table also shows relations between trait personality and mean friendliness ratings such that those who are more conscientious, agreeable, and extraverted at a trait level are more likely to see interaction partners as friendly. Indeed, research has shown that personality traits affect how individuals appraise job characteristics (e.g., James & Jones, 1980; Judge, Bono, & Locke, 2000; Levin & Stokes, 1989).

Self-Selection Bias

To examine the extent to which self-selection bias (see Scollon, Kim-Prieto, & Diener, 2003) existed, those who initially agreed to participate ($N = 73$) were compared to nonparticipants who filled out an online presurvey as part of the initial recruiting strategy. Of the 624 nonparticipants who responded to the survey, 544 reported currently holding a customer service job, and these individuals were used as the nonparticipant comparison group. Compared to the nonparticipants, the participants were slightly more conscientious ($t = 2.87$, $p < 0.05$) and more agreeable ($t = 3.08$, $p < 0.05$), although these were small effects ($d = 0.36$ and 0.38).

Attrition

To examine the difference between the participants who completed the study and were included in the final analyses ($n = 56$) and those who either did not complete the study for various reasons or finished the study with insufficient usable data ($n = 17$), independent samples *t*-tests were run on all pretest variables. The final sample scored significantly higher

TABLE 1
Descriptive Statistics and Intercorrelations for Level-2 Variables and Means of Level-1 Variables

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|-------------------------------------|----------|-----------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|-------|-------------|-------------|-------------|-------------|-------------|--------------|------|-------|------|
| 1. Sex ^a | 0.20 | 0.40 | – | | | | | | | | | | | | | | | | |
| 2. Age | 22.06 | 5.99 | –0.10 | – | | | | | | | | | | | | | | | |
| 3. Openness | 5.16 | 0.84 | –0.05 | 0.30 | 0.84 | | | | | | | | | | | | | | |
| 4. Conscientiousness | 5.23 | 0.82 | –0.06 | 0.14 | 0.23 | 0.83 | | | | | | | | | | | | | |
| 5. Extraversion | 5.03 | 0.94 | –0.06 | 0.33 | 0.52 | 0.09 | 0.88 | | | | | | | | | | | | |
| 6. Agreeableness | 5.78 | 0.71 | –0.31 | 0.28 | 0.47 | 0.48 | 0.40 | 0.85 | | | | | | | | | | | |
| 7. Neuroticism | 3.35 | 1.05 | –0.04 | –0.29 | –0.56 | –0.37 | –0.39 | –0.54 | 0.88 | | | | | | | | | | |
| 8. Customization | 5.35 | 1.14 | 0.07 | 0.31 | –0.02 | 0.14 | 0.28 | 0.18 | –0.11 | 0.74 | | | | | | | | | |
| 9. Self-monitoring | 5.19 | 0.74 | –0.15 | 0.36 | 0.39 | 0.17 | 0.49 | 0.47 | –0.20 | 0.24 | 0.85 | | | | | | | | |
| 10. Mean state Openness | 3.63 | 0.46 | –0.10 | 0.06 | <u>0.36</u> | 0.23 | 0.50 | 0.48 | –0.34 | 0.24 | 0.42 | 0.66 | | | | | | | |
| 11. Mean state Conscientiousness | 4.12 | 0.54 | –0.19 | 0.04 | 0.06 | <u>0.20</u> | 0.14 | 0.34 | –0.16 | 0.19 | 0.32 | 0.44 | 0.82 | | | | | | |
| 12. Mean state Extraversion | 3.44 | 0.49 | 0.00 | –0.04 | 0.24 | –0.06 | 0.46 | 0.22 | –0.24 | 0.12 | 0.36 | 0.63 | 0.22 | 0.63 | | | | | |
| 13. Mean state Agreeableness | 3.97 | 0.60 | –0.41 | 0.15 | 0.18 | 0.17 | 0.17 | <u>0.53</u> | –0.13 | 0.23 | 0.35 | 0.59 | 0.63 | 0.30 | 0.86 | | | | |
| 14. Mean state Neuroticism | 2.44 | 0.40 | –0.20 | –0.10 | –0.32 | –0.24 | –0.42 | –0.08 | <u>0.53</u> | –0.10 | –0.13 | –0.18 | –0.23 | –0.23 | –0.02 | 0.76 | | | |
| 15. Mean task Focus | 3.11 | 0.46 | –0.29 | 0.00 | 0.17 | 0.19 | 0.12 | 0.22 | 0.07 | 0.00 | 0.09 | 0.34 | 0.32 | 0.01 | 0.44 | 0.11 | 0.76 | | |
| 16. Mean friendliness | 4.10 | 0.44 | –0.08 | 0.24 | 0.25 | 0.30 | 0.42 | 0.44 | –0.19 | 0.25 | 0.38 | 0.45 | 0.52 | 0.25 | 0.48 | –0.33 | 0.04 | 0.93 | |
| 17. Mean service relationship | 2.90 | 0.88 | –0.06 | 0.37 | 0.15 | –0.13 | 0.12 | 0.17 | –0.22 | 0.09 | 0.01 | 0.14 | 0.22 | 0.05 | 0.24 | –0.09 | 0.06 | –0.03 | 0.91 |

Note. ^aFemale = 0; Male = 1.

Variables 3–9 were measured on a seven-point scale, whereas variables 10–17 were measured on a five-point scale.

All significant correlations listed in bold. Cronbach’s alphas listed on the diagonal. Correlations between traits and corresponding state means are underlined.

To compute variables 10–17, each Level-1 item was first averaged within-individual. The resulting item averages (functioning as if they were Level-2 items) were then used to compute the mean of the state measures. Cronbach’s alphas for variables 10–17 were calculated based on these item averages to indicate the internal consistency reliability of the means of the item averages.

For all correlations not involving age ($N = 56$): $p < 0.05$ when $r > 0.26$; $p < 0.01$ when $r > 0.34$; $p < 0.001$ when $r > 0.43$.

For correlations with age ($n = 36$): $p < 0.05$ when $r > 0.33$; $p < 0.01$ when $r > 0.42$; $p < 0.001$ when $r > 0.52$.

on Conscientiousness than those who did not turn in useful data ($t = 2.66$, $p < 0.05$; $d = 0.71$).

Overview of Main Analyses

The data were nonindependent in that observations were nested within individuals, necessitating the use of multilevel modeling (Bliese & Hanges, 2004; Kenny & Judd, 1986). For each personality state outcome variable, a progression of models was tested, as described in Hayes (2006). When the later model provided significant better fit, it was used as the null model in the next step, and a new model where one or more parameters were relaxed was compared to it. The progression of tests of model fit ceased when no further improvement of fit was available. Maximum likelihood estimation was used, and evaluation of model fit was based on the difference of model deviance ($-2 \times \log$ likelihood, $-2LL$), which has a χ^2 distribution with degrees of freedom equal to the difference in the number of parameters estimated between two models. Statistical significance tests on parameter estimates (the Wald tests) were also conducted for each model. However, when the test of a model yielded a different result from the Wald test, model deviance is interpreted because of its accuracy, in accordance with Hayes' (2006) recommendation. HLM 6.06 (Raudenbush, Bryk, Cheong, & Congdon, 2000) was used for the main analysis.

Level-1 predictors were within-individual centered, calculated by subtracting the mean of each individual from each observation; and Level-2 predictors were grand-mean centered, calculated by subtracting the mean of the sample from each individual's score (Enders & Tofighi, 2007). Thus, the variation of any situational characteristic in the analysis was centered on each individual's mean level. The equations for the models are shown in Appendix B. In brief, the progression of models examined was as follows: Model 1 established nonindependence of state personality observations with ICC(1) and justified the use of a multilevel model, Model 2 assessed the average within-individual effects of situational characteristics on state personality, Model 3 established whether there were between-individual differences on the situational contingencies found in Model 2, Model 4 examined effects of trait on corresponding state personality, Model 5.1 examined the between-individual effects of self-monitoring or customization on state personality, and Model 5.2 assessed the cross-level interaction effects of self-monitoring and customization on situational contingencies.¹

¹Within-individual responses temporally close to each other are likely to be more correlated than more distal responses. In addition, the variation in responses could change

Relationship Between Task Focus and State Conscientiousness

Table 2 shows the results of examining the relationship of task focus to state Conscientiousness. An ICC(1) of 0.44 showed that 44% of the observed variance in state Conscientiousness was due to between-person variance and 56% was due to within-person variance. Adding the fixed effect of task focus in the prediction of state Conscientiousness (Model 2) resulted in a significantly better fit. The significant β_{10} indicates that state Conscientiousness was positively related to task focus, which explained 3% of the within-person variation in state Conscientiousness. Overall, the test of Model 2 supported Hypothesis 1.

Model 3 added a random component on the relationship between task focus and state Conscientiousness, such that the slopes predicting state Conscientiousness from task focus were allowed to vary freely between individuals. The model again resulted in a significant improvement of fit to the data, supporting the notion that individuals differ on their situational contingency for state Conscientiousness. Specifically, individuals differed on the degree to which their state Conscientiousness was associated with task focus. This significant random component further allows the investigation of cross-level moderation effect. A Level-2 moderator could be expected to explain the variance in the slopes.

Model 4 examined the extent to which between-individual variance on state Conscientiousness could be accounted for by trait Conscientiousness. The change in model fit was not significant.

Model 5.1 and Model 5.2 were used to assess cross-level effects. Model 5.1 for self-monitoring had significant improvement of fit beyond Model 4, indicating individuals who were high on self-monitoring reported higher levels of state Conscientiousness. Customization, on the other hand, did not have significant effects on state Conscientiousness.

Neither of the Models 5.2 provided significant better fit than their respective Models 5.1. Although the Model 3 analysis showed significant variation in the slopes predicting state Conscientiousness from task focus, such variation was not associated with either customization or self-monitoring. Thus, Hypotheses 6 and 7 were not supported for the relationship between task focus and state Conscientiousness.

systematically across time. To address these two issues, we conducted additional analyses from each Model 3 onward using R and the NLME package (Pinheiro & Bates, 2000) and modeled lag-1 autoregressive error structure and heteroskedasticity based on the procedures described in Bliese and Ployhart (2002). These effects were mostly nonsignificant and had little influence on the results. Therefore, we presented the results without modeling autocorrelation and heteroskedasticity.

TABLE 2
Test of Models for the Task Focus–State Conscientiousness Relationship

| | Model 1 | Model 2 | Model 3 | Model 4 | Customization | | Self-monitoring | |
|--|---------|----------|----------|---------|---------------|-----------|-----------------|-----------|
| | | | | | Model 5.1 | Model 5.2 | Model 5.1 | Model 5.2 |
| Fixed components | | | | | | | | |
| Intercept (β_{00}) | 4.12*** | 4.12*** | 4.12*** | 4.12*** | 4.12*** | 4.12*** | 4.12*** | 4.12*** |
| Trait Conscientiousness (β_{01}) | | | | 0.14 | 0.13 | 0.13 | 0.11 | 0.11 |
| Level-2 characteristic (β_{02}) | | | | | 0.07 | 0.08 | 0.24** | 0.22* |
| Average slope– task focus (β_{10}) | | 0.12*** | 0.12*** | 0.12*** | 0.12** | 0.12** | 0.12** | 0.11** |
| Cross-level moderation (β_{11}) | | | | | | –0.02 | | 0.04 |
| Random components | | | | | | | | |
| Variance of intercept (r_0) | 0.26*** | 0.26*** | 0.27*** | 0.25*** | 0.25*** | 0.25*** | 0.23*** | 0.23*** |
| Variance of slope (r_1) | | | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** |
| Within-individual variance (e) | 0.33 | 0.32 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| Model fit | | | | | | | | |
| Model deviance (–2LL) | 1883.87 | 1855.76 | 1832.88 | 1829.99 | 1828.74 | 1828.25 | 1822.94 | 1822.22 |
| Model $\Delta \chi^2$ | | 28.11*** | 22.89*** | 2.89 | 1.25 | 0.49 | 7.04** | 0.72 |
| Δdf | | 1 | 2 | 1 | 1 | 1 | 1 | 1 |

Note. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Relationship Between Friendliness and State Extraversion

Similar steps were conducted to examine the hypothesis regarding state Extraversion and friendliness, and the results are presented in Table 3. The ICC(1) was 0.28, indicating that 28% of the variance in state Extraversion was due to between-person variation. The addition of the fixed effect of friendliness was significant for the prediction of state Extraversion, as the test of Model 2 showed 6% of within-individual variation in state Extraversion at service work was explained by the extent to which the other person in the interaction was friendly. Thus, Hypothesis 2 was supported.

Model 3 provided significant better fit than Model 2. The degree to which individuals expressed their state Extraversion in response to the situational characteristic of friendliness differed across individuals. The addition of the main effect of trait Extraversion in Model 4 was significant, $\beta_{01} = 0.23$. Individuals who were higher on trait Extraversion were higher on their average state Extraversion.

Customization and self-monitoring were entered in their respective Models 5.1 to estimate the effect of job or individual characteristics on the mean level of state Extraversion. Neither model resulted in significant improvement of fit, so customization and self-monitoring did not have effects on average state Extraversion.

The moderating effect of Level-2 job and individual characteristics on the association between friendliness and state Extraversion was tested in Model 5.2. Only Model 5.2 for customization had a significant better fit ($p < 0.05$). However, the direction of the influence, judging from $\beta_{11} = -0.05$, was contrary to Hypothesis 6. That is, for individuals working in jobs with a higher degree of customization, their state Extraversion was in fact less susceptible to influence from the other party's friendliness, compared to individuals who work in jobs with a lower degree of customization. Figure 2 presents the interaction effect.

Relationship Between Friendliness and State Agreeableness

The same steps were executed to examine hypotheses regarding the relationship between friendliness and state Agreeableness, with the results presented in Table 4. The null model resulted in an ICC(1) of 0.46, showing that between-individual and within-individual variances accounted for around equal amount of the observed variance in state Agreeableness. The progression from Model 1 to Model 4 was significant for each new model. In Model 2, the addition of the fixed effect of friendliness explained 10% of the variance in within-individual variation of state Agreeableness, supporting Hypothesis 3. In Model 3, allowing the association between friendliness and state Agreeableness to vary freely across individuals

TABLE 3
Test of Models for the Friendliness-State Extraversion Relationship

| | Customization | | | | Self-monitoring | |
|--|---------------|----------|---------|----------|-----------------|-----------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5.1 | Model 5.2 |
| Fixed components | | | | | | |
| Intercept (β_{00}) | 3.43*** | 3.43*** | 3.43*** | 3.43*** | 3.43*** | 3.43*** |
| Trait Extraversion (β_{01}) | | | | 0.23*** | 0.18* | 0.18* |
| Level-2 characteristic (β_{02}) | | | | -0.02 | 0.14 | 0.12 |
| Average slope-friendliness(β_{10}) | | 0.20*** | 0.19*** | 0.19*** | 0.19*** | 0.20*** |
| Cross-level moderation (β_{11}) | | | | | -0.05* | 0.04 |
| Random components | | | | | | |
| Variance of intercept (r_0) | 0.20*** | 0.21*** | 0.21*** | 0.16*** | 0.15*** | 0.15*** |
| Variance of slope (r_1) | | | 0.01* | 0.01* | 0.01* | 0.01* |
| Within-individual variance (e) | 0.53 | 0.50 | 0.48 | 0.48 | 0.48 | 0.48 |
| Model fit | | | | | | |
| Model deviance (-2LL) | 2315.22 | 2250.67 | 2243.33 | 2230.51 | 2230.42 | 2226.16 |
| Model $\Delta \chi^2$ | | 64.55*** | 7.33* | 12.83*** | 0.09 | 4.26* |
| Δdf | | 1 | 2 | 1 | 1 | 1 |

Note. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

TABLE 4
Test of Models for the Friendliness–State Agreeableness Relationship

| | Customization | | | | Self-monitoring | |
|---|---------------|----------|----------|----------|-----------------|-----------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5.1 | Model 5.2 |
| Fixed components | | | | | | |
| Intercept (β_{00}) | 3.97*** | 3.97*** | 3.97*** | 3.97*** | 3.97*** | 3.97*** |
| Trait Agreeableness (β_{01}) | | | | 0.44*** | 0.36** | 0.36** |
| Level-2 characteristic (β_{02}) | | | | 0.08 | 0.16 | 0.13 |
| Average slope–friendliness (β_{10}) | | 0.20*** | 0.20*** | 0.20*** | 0.20*** | 0.21*** |
| Cross-level moderation (β_{11}) | | | | | 0.02 | 0.06 |
| Random components | | | | | | |
| Variance of intercept (r_0) | 0.33*** | 0.33*** | 0.34*** | 0.23*** | 0.23*** | 0.23*** |
| Variance of slope (r_1) | | | 0.05*** | 0.05*** | 0.05*** | 0.05*** |
| Within-individual variance (ϵ) | 0.39 | 0.35 | 0.31 | 0.31 | 0.31 | 0.31 |
| Model fit | | | | | | |
| Model deviance (–2LL) | 2038.82 | 1943.96 | 1880.17 | 1861.59 | 1859.74 | 1859.50 |
| Model $\Delta \chi^2$ | | 94.85*** | 63.80*** | 18.58*** | 1.85 | 0.24 |
| Δdf | | 1 | 2 | 1 | 1 | 1 |

Note. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

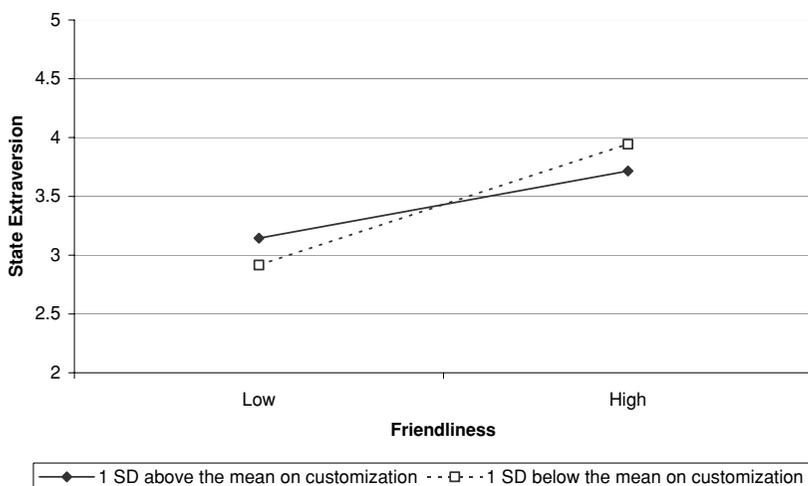


Figure 2: Moderating Effect of Customization on the Within-Individual Relationship Between Friendliness and State Extraversion.

resulted in significant better fit to the data. Thus, there was significant variation across individuals in the association between state Agreeableness and friendliness. The significant Model 4 showed that individuals who were higher on trait Agreeableness were higher on their average state Agreeableness at work. Analyses of Model 5.1 and Model 5.2 were not significant for either customization or self-monitoring. Thus, Hypotheses 6 and 7 were not supported for the relationship between friendliness and state Agreeableness.

Relationship Between Service Relationship and State Extraversion

Because the service relationship variable has to do with the extent to which the service provider expects future interactions with the customer, only interactions with customers were included in the analyses involving service relationship. Level-1 data were screened for noncustomer interactions, resulting in a reduction of 356 observations, with 642 observations remaining.

Testing of the null model showed that between-individual variance accounted for a sizeable percentage of total variance in state Extraversion when interacting with customers, as indicated by an ICC(1) of 0.32 (see Table 5). Adding the fixed effect of service relationship, Model 2 failed to provide a better fit to the data. Thus, Hypothesis 4 was not supported. Because Model 2 was not significant, no further models were tested.

TABLE 5
Test of Models for the Service Relationship–State Extraversion/Agreeableness Relationships

| | State Extraversion | | State Agreeableness | |
|---|--------------------|---------|---------------------|---------|
| | Model 1 | Model 2 | Model 1 | Model 2 |
| Fixed components | | | | |
| Intercept (β_{00}) | 3.47*** | 3.47*** | 4.13*** | 4.13*** |
| Average slope–service relationship (β_{10}) | | 0.05 | | 0.04 |
| Random components | | | | |
| Variance of intercept (r_0) | 0.23** | 0.23*** | 0.26** | 0.26*** |
| Within-individual variance (e) | 0.50 | 0.50 | 0.34 | 0.34 |
| Model fit | | | | |
| Model deviance (–2LL) | 1474.50 | 1472.35 | 1254.02 | 1251.99 |
| Model $\Delta \chi^2$ | | 2.15 | | 2.03 |
| Δdf | | 1 | | 1 |

Note. * $p < 0.05$. ** $p < .01$. *** $p < .001$.

Relationship Between Service Relationship and State Agreeableness

The relationship between service relationship and state Agreeableness was tested on the same screened data set (see Table 5). Model 1 resulted in an ICC(1) of 0.43, indicating around equal amount of within- and between-individual variation of state Agreeableness in customer interactions. Model 2 failed to provide significant better fit to the data. Hypothesis 5 was not supported, and no further models were tested.

Power Analysis and Exploratory Analyses

Because results for Hypotheses 4, 5, and 7 were in the hypothesized direction, we conducted power analysis (see Scherbaum & Ferrerter, 2009) to estimate the number of observations/individuals needed for power of 0.80 based on the observed parameter estimates. We used the Power analysis IN Two-level designs (PINT) program (Snijders & Bosker, 1993; Snijders, Bosker, & Guldmond, 2003) for the analysis. For Hypothesis 4 or 5, this study would have needed 120 participants with 12 ESS surveys each to achieve power of 0.80, or alternatively, 75 participants with 20 ESS surveys each. For Hypothesis 7 with cross-level moderating effects of self-monitoring, this study would have needed at least 255 individuals with 18 ESS surveys each, or 225 individuals with 30 surveys each to have power of 0.80.

We also conducted exploratory analysis to determine whether type of interaction (customer, supervisor, or coworker) influenced the effects of situational characteristics on personality states. Although in general participants reported higher levels of state Conscientiousness, Extraversion, and Agreeableness when serving customers as compared to interacting with supervisors or coworkers, type of interaction did not moderate the relationship between situational characteristics and personality states at the within-individual level.

Additional exploratory analysis revealed that state Openness was positively associated with friendliness, and the strength of the association differed across individuals. State Neuroticism was not associated with any of the situational characteristics.

Discussion

This study supports the notion that personality states at work vary meaningfully within individual, and the variation can be accounted for by situational factors. The sizeable within-individual variation of personality states provides an additional area for investigation. This study also lends further support to Fleeson's (2007) argument that situations represent psychologically active features that influence personality states. The findings contribute beyond Fleeson's (2007) work by showing significant average situational contingencies within the service work setting. Given that situational influences are likely more homogeneous in work settings than general daily interactions, our work illustrates the viability of considering personality states in workplace applications and research.

The results of this study, summarized in Table 6, indicate that the variation in personality states was associated with the situational factors of task focus and friendliness. Specifically, significant relationships between task focus and state Conscientiousness, and between friendliness and state Extraversion and state Agreeableness were found. The amount of within-individual variances in personality states accounted for by situational characteristics ranged from 3% to 10%. Links between situational contingencies and workplace outcomes might occur if personality states serve to mediate the effects of corresponding traits on behavior or if variability in personality states adds to the prediction of performance beyond traits. Tests of these potential links are beyond the scope of this study but will be important to investigate in order to determine the practical significance of these amounts of variance.

Of the situational contingencies proposed, only the relationship between friendliness and Extraversion could be explained by any of the Level-2 variables. Opposite to what was originally hypothesized, the more a service job required customization of service provision, the weaker the

TABLE 6
Summary of Findings

| Personality domain | Type of interaction ^a | Situational contingency | Job/individual characteristics' effects on situational contingency | Trait effects on average state | Job/individual characteristics' effects on average state |
|--------------------|----------------------------------|-------------------------|--|--------------------------------|--|
| Conscientiousness | Customer > S & C | Task focus (H1) | None | None | Self-monitoring |
| Extraversion | Customer > S | Friendliness (H2) | Customization | Extraversion | None |
| Agreeableness | Customer > S & C | Friendliness (H3) | None | Agreeableness | None |

Note. ^aFor effects of type of interaction: Customer = average state for customer interactions; S = average state for supervisor interactions; C = average state for coworker interactions.

association between friendliness and state Extraversion within individual. When a service employee has to discover the client's need in order to tailor the service provision, he/she oftentimes has to ignore the features of the situation. Rather than shifting his/her level of state Extraversion according to the friendliness of the customer, he/she may express a fairly high level of Extraversion that is deemed most suitable for customization. Another potential explanation is the influence of unmeasured variables. The provision of customized service may be qualitatively different from the provision of noncustomized service such that the psychologically active features of the situation at work are different.

Although the effects of self-monitoring on situational contingencies were not significant, all three interaction terms were in the hypothesized direction. The lack of power to detect the effects is likely due to the small sample size at Level 2 ($N = 56$). Interestingly, after controlling for trait Conscientiousness, self-monitoring predicted average state Conscientiousness. Certain types of behaviors, such as those associated with Conscientiousness, are ones that high self-monitors know they should regulate based on past rewards. Other trait-related behaviors (e.g., conversation dominance and Extraversion) may be either (a) less clearly established as needing to be monitored and regulated at work or (b) less able to be regulated, even by high self-monitors.

The influence of situations on personality states suggests better understanding of the situational features of the job may improve our ability to use personality assessments more effectively in selection contexts. Organizational psychologists rely on a rather broad categorization of jobs and may neglect the potential differences within the same job categories (e.g., Robertson & Kinder, 1993). The situational characteristics of friendliness and task focus, as well as their variations present in a job, may be utilized to better estimate the ability of traits to predict job performance. Take state Agreeableness as an example. If Agreeableness is conducive to better in-person service performance, it would be desirable for the service employee to display uniformly high state Agreeableness. When the service employee is placed on a job where the friendliness of the customers varies considerably, he/she may be agreeable in some interactions but not so much in other interactions. The same employee, if placed on a job where the friendliness of the customers does not vary much, will be much more stable in his/her performance. Thus, the variation of friendliness on the job may moderate the validity of using trait Agreeableness to predict service job performance, such that trait Agreeableness may be a better predictor of job performance when the friendliness level of customers is more constant rather than variable. Note that because personality influences situations individuals choose to enter (Diener, Larson, & Emmons, 1984) as well as how they perceive situations (Levin & Stokes, 1989), there is a need for a more complex view of how personality influences behavior at work to

advance the predictive capabilities of personality assessments in selection contexts.

Understanding Situational Contingencies

This study serves as a foundation for future investigation of the relationship between individual situational contingencies and performance. It is possible that situational contingencies can predict job performance beyond personality traits. Take the situational contingency between task focus and state Conscientiousness as example. When job demands rise, the employee has to be extremely attentive and organized, whereas he/she may relax and recoup when task demands decline. For employees with the same level of trait Conscientiousness, the ones whose situational contingency between task focus and state Conscientiousness is higher may perform better.

The potential effect of situational contingencies on job performance can be examined in future studies by three approaches: (a) measuring or manipulating the variation of situational characteristics, (b) selecting individuals who are more or less prone to vary across situations, and/or (c) identifying job characteristics that influence the situational contingencies. The viability of approach (b) depends on researchers' ability to measure the between-individual differences in situational contingencies. With the advancement of approaches (a) and (b), researchers will need to identify the job characteristics that moderate the association between situational characteristics and personality states.

Other job characteristics variables can be explored in future studies. For example, the reward structure of the job may facilitate the relationship between task focus and state Conscientiousness. When tasks are tightly associated with rewards, task focus may exert greater influence on state Conscientiousness. When tasks are weakly linked to rewards, however, the relationship between task focus and state Conscientiousness may be much weaker.

Relationships Between Trait Measures and Average State Measures

The correlation between each trait measure and the corresponding average state measure represents the degree of association between the way in which people describe themselves in general and the way they are on average across multiple situations at work. Except for Conscientiousness, the correlations were all significant and ranged from 0.36 to 0.53. What constitutes an appropriate level of relationship between trait and state measures? Although traditional thinking on convergent validity would suggest one would expect fairly strong correlations between trait and state measures of the same construct, state measures reflect variability in a trait

and hence should not be that strongly related. One way to further examine this issue would be to compare state–trait correlations in a context devoid of situational contingencies (where one would not expect variability in expression) to those correlations in a context with an expected strong situational contingency, expecting much stronger relations in the former.

The low and nonsignificant correlation between trait Conscientiousness and average state Conscientiousness is worth noting.² At least two explanations can be proffered. Approached from a situationist's perspective, it is likely that different jobs exerted different influences on state Conscientiousness, and such an effect existed between individuals. From an individualist's perspective, however, it is possible that some stable individual traits influenced the expression of state Conscientiousness. A closer look at the results supports this notion: Self-monitoring predicted average state Conscientiousness at work, over and beyond what was accounted for by trait Conscientiousness. Controlling for the effect of trait Conscientiousness, for the individuals who were more adept at monitoring themselves to be situationally appropriate, their average state Conscientiousness was elevated at work, compared to those individuals who were more consistent across situations.

The finding on the relationship between trait Conscientiousness and average state Conscientiousness is even more interesting considering that trait Conscientiousness is the best predictor of job performance across all jobs among Big Five factors (Barrick & Mount, 1991; Barrick, Mount, & Judge, 2001). The fact that low trait–state correlation was observed for Conscientiousness rather than other factors was likely due to its job relevance. Furthermore, if trait Conscientiousness measures can be developed or modified to better predict average state Conscientiousness, the relationship between Conscientiousness and job performance may be improved. This line of reasoning echoes the findings by Heller (2007), where personality within a specific role predicted outcome variables better than personality in general.

It should be noted that the use of different scales for the trait and state measures may have downwardly biased the correlations. However, the IPIP trait measures were specifically designed to be the proxy for Goldberg's (1992) Big Five markers, and according to International Personality Item Pool (2010, <http://ipip.ori.org/newBigFive5broadTable.htm>), the average correlations between the IPIP scales and the full

²Range restriction due to self-selection and attrition may have caused a reduction of the correlation. Correcting for range restriction using the formula in Hunter and Schmidt (2004, p. 215) yielded a corrected r of 0.23. Therefore, range restriction alone could not fully account for the nonsignificant relationship.

corresponding adjective marker scales is 0.67 (ranging from 0.54 for Agreeableness to 0.73 for Extraversion). Therefore, the low observed correlations between trait and average state measures, especially for Conscientiousness, cannot be fully attributed to using different scales.

Practical Implications

These findings provide insights for applied settings. Rather than selecting employees with personality measures that have low validities and are possibly susceptible to faking, organizations may adopt the alternative of designing training programs to instruct service employees to be more polite, energetic, sympathetic, and organized when the situation requires. From a job design perspective, organizations may modify elements of the job to facilitate or restrict situational characteristics that influence personality states at work.

A practitioner interested in utilizing personality measures to predict job performance may consider the variations of job-relevant personality states on the job that are associated with characteristics of the situation and the person through a set of questions to guide the thought process:

- (a) What is the nature of job performance? Is it merely a mean, the worst, or the best, of moment-to-moment performance? Does variation of moment-to-moment performance influence overall job performance?
- (b) For each personality trait that predicts job performance, what is the nature of the relationship between personality state and job performance?
- (c) What are the situational factors that may influence expression of job-relevant personality states?
- (d) Are there features of the job that may either magnify or reduce the association stated in Step 3? If so, in which way? Can these features be modified?
- (e) Are there features of the incumbent that may either magnify or reduce the association stated in Step 3? If so, in which way? Can these features be used in personnel selection and/or training?

We would also add that research on how traits influence states both directly as well as indirectly through their influence on choice of situations to enter and perceptions of situations one is in are areas warranting further investigation.

Those engaged in personality assessment for selection purposes may express concern about the practical logistics of assessing state personality; there are ways of capturing variability in personality expression that do not involve the intensity of an ESS data collection effort as was conducted

here. For example, existing trait measures might be adapted to allow respondents to report on their variability in addition to their “average” personality. Work on frame of reference in personality assessment has already demonstrated that framing of instructions and contextualizing items can influence responding (Lievens, De Corte, & Schollaert, 2008; Schmit, Ryan, Stierwalt, & Powell, 1995). As another example, new tools may be developed that more directly assess situational contingencies, such as situational judgment inventories focused on assessing specific traits that also vary situational characteristics systematically (e.g., situations varying in customer friendliness with response options reflecting varying degrees of conscientious behavior).

Limitations

This study is limited in several respects. First, the sample consisted of college students who worked at service jobs. In this sense, the sample may be different from individuals who deem service provision as a career, in terms of motivation and concern over quality of service provision. Second, participants’ self-selection and attrition are often problematic for studies using experience sampling methodology (Scollon et al., 2003). Participants were in fact slightly different from nonparticipants in that they were slightly more conscientious and more agreeable. Although the effect sizes were small, the restriction of range on Conscientiousness and Agreeableness likely attenuated the observed trait–state relationships and might have affected the observed within-individual effects and cross-level interactions. Future studies may address the issue by using data collection methods that require less participant effort, such as observations.

Third, participants’ motivation throughout the experience sampling study may impact the quality of data collected (Christensen et al., 2003). Several measures were taken to ensure study participants’ motivation, including establishing rapport, emphasizing the importance of the study, providing incentives, and reducing the imposition of responding where possible. In addition, the final ESS data were screened for overly rapid responses with a rather conservative cutoff. Thus, the problem of participant motivation was mitigated. Fourth, this study relied on self-reports, which can be suspect to common-method variance. Respondents were encouraged to respond truthfully to the items, and they were assured that responses would be analyzed only on the sample level. The temporal separation of the pretest measures and the ESS may have helped to reduce method variance. The observed positive and negative correlations at Level 2 among average personality states and average situational characteristics suggest that participants did in fact respond differentially to different scales.

Conclusion

The findings of this study contribute to the literature on personality at work in a number of ways. First, personality states were found to fluctuate according to situational features at service work. Specifically, the immediacy of a task influenced state Conscientiousness, and the friendliness of the interaction partner influenced state Extraversion and state Agreeableness. These findings point to the potential benefits from examination of the variations of situational features at work when using personality measures. Second, the level of customization of the job moderated the association between friendliness and state Extraversion, supporting the notion that features of the job have contextual effects on how individuals respond to situations. Third, the moderating effects of self-monitoring on the association between situational characteristics and personality states were in the expected direction, albeit nonsignificant due to a lack of power. In addition, self-monitoring was found to influence average state Conscientiousness at work beyond trait Conscientiousness. The role of self-monitoring on trait–state relationships at work awaits future investigations. Fourth, relationships between personality trait measures and personality state measures in the service work context were found for all Big Five factors except Conscientiousness. Besides providing insights into the process by which personality influences work, these findings also furnish potential explanation for the weak relationship between personality traits and job performance. In sum, examining personality states at work is likely to advance our understanding of the processes whereby personality influences workplace outcomes at work.

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APPENDIX A

Experience Sampling Survey

States. Please answer all of the following questions regarding the interaction at or immediately before the survey alarm started. First, indicate the degree to which these following adjectives describe yourself in that interaction.

- Quiet
- Polite
- Disorganized
- Self-confident
- Intelligent
- Bold
- Warm
- Hardworking
- Sensitive
- Inquisitive
- Energetic
- Unsympathetic
- Responsible
- Insecure
- Creative

Who did you primarily interact with:

- a customer [Branch 1]
- a supervisor [Branch 2]
- a colleague (including subordinate) [Branch 2]
- multiple people [Branch 3]
- no one [Branch 3]

Please indicate the degree to which these following sentences describe the situational characteristics of that interaction.

Task focus (for Branch 1 and Branch 2)

- I chose to interact with this person but did not have to interact with him/her.
- I had no choice but to interact with this person.
- If I had a choice I would not have interacted with this person.
- The interaction was a required part of my job.
- The interaction required me to attend to the other person immediately.
- The interaction occurred only because I was free from other tasks.
- I had to put aside other tasks to interact with this person.
- I had to stop what I was doing to have this interaction.
- I will be (or was) evaluated for the interaction.

Friendliness (for Branch 1 and Branch 2)

- The other person was friendly.
- The other person was sociable.
- The other person was quite willing to engage in conversation.

Service relationship (for Branch 1 only)

- It is unlikely for the other person to interact with me in the near future.
- I expect to have future interaction with the other person.
- This is someone whom I have interacted with in the past.
- This is a “regular” customer.
- This is someone who has come here before.

APPENDIX B

Equations for HLM models using state Conscientiousness and self-monitoring as an Example

Model 1

Level 1: State Conscientiousness = $\pi_0 + e$

Level 2: $\pi_0 = \beta_{00} + r_0$

Where:

π_0 = Individuals' intercepts of state Conscientiousness

e = Variation of any individual's state Conscientiousness around his/her intercept

β_{00} = Grand mean of state Conscientiousness

r_0 = Variation of individuals' intercepts around grand mean

In addition:

Percentage of between-person variation = $ICC(1) = \frac{\text{Var}(r_0)}{\text{Var}(r_0) + \text{Var}(e)}$

Percentage of within-person variation = $\frac{\text{Var}(e)}{\text{Var}(r_0) + \text{Var}(e)}$

Model 2

Level 1: State conscientiousness = $\pi_0 + \pi_1$ (task focus) + e

$\pi_0 = \beta_{00} + r_0$

Level 2:

$\pi_1 = \beta_{10}$

Where:

π_1 = Individuals' slopes for predicting state Conscientiousness with task focus

β_{10} = Pooled slope for predicting state Conscientiousness with task focus

Model 3

Level 1: State Conscientiousness = $\pi_0 + \pi_1$ (task focus) + e

$\pi_0 = \beta_{00} + r_0$

Level 2:

$\pi_1 = \beta_{10} + r_1$

Where:

r_1 = Variation of individuals' slopes around pooled slope

Model 4

Level 1: State Conscientiousness = $\pi_0 + \pi_1$ (task focus) + e

$\pi_0 = \beta_{00} + \beta_{01}$ (trait Conscientiousness) + r_0

Level 2:

$\pi_1 = \beta_{10} + r_1$

Where:

β_{01} = Level 2 slope for predicting individual intercept with trait
Conscientiousness

Model 5.1

Level 1: State Conscientiousness = $\pi_0 + \pi_1$ (task focus) + e
 $\pi_0 = \beta_{00} + \beta_{01}$ (trait Conscientiousness)

Level 2: + β_{02} (self-monitoring) + r_0

$$\pi_1 = \beta_{10} + r_1$$

Where:

β_{02} = Level 2 slope for predicting individual intercept with
self-monitoring

Model 5.2

Level 1: State Conscientiousness = $\pi_0 + \pi_1$ (task focus) + e
 $\pi_0 = \beta_{00} + \beta_{01}$ (trait Conscientiousness)

Level 2: + β_{02} (self-monitoring) + r_0

$$\pi_1 = \beta_{10} + \beta_{11}$$
 (self-monitoring) + r_1

Where:

β_{11} = Level 2 slope for predicting individual slope with
self-monitoring