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Reciprocal Influences of Personality and Job Characteristics Across Middle Adulthood

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Abstract

The present research uses an economically diverse, middle-aged sample to examine the concurrent and longitudinal interplay between personality and occupational experiences. Using the Five-Factor Model of personality and the Demand-Control Model of the occupational environment as guiding frameworks, participants (N = 722) reported on their personality, job characteristics, and occupational history; a subset (n = 297) made the same ratings approximately 10 years later. Measured concurrently, emotionally stable, extraverted, open, and conscientious participants reported jobs with greater decision-making latitude, whereas disagreeable participants had more physically demanding and dangerous jobs. Longitudinal cross-lagged analyses revealed that personality was associated with changes in decision latitude, hazardous working conditions, and physical demands. None of the job characteristics predicted change in personality at the factor level. Thus, personality shaped occupational experiences, but occupational experiences had minimal impact on personality. Support for the Five-Factor Theory perspective and implications for environmental approaches to personality development are discussed.

More than just a source of income, our jobs often become a core aspect of our identity, facilitating the development of both new skills and lifelong friendships. Given that jobs are central to our self and identity, it is natural to ask, how do our occupational experiences shape who we are? Multiple frameworks, such as sociogenic theory (Inkeles & Levinson, 1963) and symbolic interactionism (Mead, 1934) address the role of social structures in personality functioning. From this rich tradition, provocative evidence suggests that job characteristics contribute to personality development in early adulthood (Roberts, Caspi, & Moffitt, 2003). We are not passive agents, however, and as work in this tradition also suggests, individuals' personalities actively shape their working environment. Less research has systematically addressed the interplay between personality and the working environment in middle adulthood.

The current research examines the concurrent and longitudinal relations between personality traits and occupational experiences across a 10-year period of middle adulthood in an economically diverse community sample. We use a two-wave panel design to address their reciprocal change within the framework of the Five-Factor Model of personality. We first summarize two prominent perspectives that conceptualize adult personality development in different ways: the Five-Factor Theory of personality (FFT; McCrae & Costa, 2003), which emphasizes the biological aspects of development, and environmental approaches (e.g., Roberts, Wood, & Smith, 2005), which emphasize the importance of the environment and social roles. We then review previous research on the concurrent associations between personality and occupational experiences and how they prospectively influence each other's

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development. Finally, we describe the current study and outline hypotheses for the relations between personality development and occupational experiences.

Perspectives on Adult Personality Development

A substantial literature now documents the stability and change of personality across the life span (e.g., Terracciano, Costa, & McCrae, 2006). There is considerable debate, however, on the causes of this relative stability. From the perspective of the FFT, traits are endogenous basic tendencies that emerge early in life and reach maturity in young adulthood (McCrae & Costa, 2003). Normative personality development results from age-related brain maturation and changes in gene expression across the life span, whereas nonnormative change results from alterations in brain chemistry and structure due to traumatic events, drug use, or disease. Multiple lines of research support the intrinsic maturation hypothesis: Personality stability is moderately heritable (Viken, Rose, Kaprio, & Koskenvuo, 2004), similar age-related changes in personality are found across diverse cultures with presumably radically different environments (McCrae et al., 1999), and comparative studies show similar developmental trends in primates (King, Weiss, & Farmer, 2005).

In contrast to the maturational approach of the FFT, environmental approaches, such as the social investment principle (Roberts et al., 2005) or sociogenic theory (Inkeles & Levinson, 1963), posit that investment in social institutions and roles promotes personality development across adulthood. Age-graded social norms, such as entering a committed relationship or the work force, move personality in the direction of psychological maturity, that is, greater emotional stability, dominance, agreeableness, and conscientiousness. When the individual commits to a social role, his/her personality shifts to reflect the expectancies of that role. Behaviors within these social institutions are rewarded or punished based on role expectations; personality change is thus a response to these contingencies. Normative changes in personality are the result of most people engaging in these social institutions (careers, marriage) at roughly the same time, whereas nonnormative change is the result of nontraditional career (Helson & Moane, 1987) or relationship (Robins, Caspi, & Moffitt, 2002) trajectories.

Work Experiences and Personality Development

Theories about how social structures contribute to personality functioning (e.g., Inkeles & Levinson, 1963; Roberts et al., 2005) suggest that the everyday reality of the job, such as the latitude to make decisions, promotes personality change. Indeed, Roberts and colleagues (2005) argued that “rather than examining *whether* people are working, what is critical is *how* they are working” (p. 174, italics in original). Likewise, personality may promote change in specific aspects of the working environment, rather than change in occupation.

To test the notion that specific aspects of the job, such as autonomy and stimulation, influence personality development, we use an established model of the occupational environment: the Demand-Control Model (DCM; Karasek, 1979; Karasek & Theorell, 1990). The DCM, a central model in the field of occupational health psychology, characterizes the job along four independent dimensions: Decision Latitude and Psychological Demands, which measure the psychological aspects of the working environment, and Physical Demands and Hazardous Work, which measure the physical aspects of the working environment. Decision Latitude refers to how much individuals utilize their skills, have discretion over their work environment, and have opportunities to express their creativity, whereas Psychological Demands refers to workload demands, time pressures, and conflicts in the workplace. The Physical Demands dimension measures the daily physical strain involved on the job, such as lifting heavy loads or rapid physical

activity, whereas the Hazardous Work dimension measures exposure to physical danger on the job, such as working with dangerous chemicals or methods.

The Demand-Control model was originally developed to account for job strain: Jobs that are demanding in nature but offer little control over making decisions or utilizing skills may produce strain. Since Karasek's (1979) original formulation, the demand and control dimensions of the model have been found to be relatively more useful as separate dimensions rather than as an interaction (de Jonge & Kompier, 1997). These dimensions have been implicated in a host of job-related outcomes, such as job dissatisfaction and burnout (Hochwälder, 2006) and predict physical and mental health outcomes, such as coronary heart disease (Aboa-Éboulé et al., 2007) and major depression (Melchior et al., 2007). These relatively stable characteristics of job design may be the most potent aspects of the job experience and thus the most likely to promote personality change.

We briefly summarize how personality and these occupational experiences are related, both concurrently and over time. As virtually no research has examined personality and the physical and hazardous aspects of the working environment, our review focuses on personality's relation with dimensions related to Decision Latitude and Psychological Demands.

Neuroticism

The connection between personality and job characteristics is most well examined for Neuroticism. Measured concurrently, individuals high on Neuroticism consistently report psychologically demanding jobs with little decision making latitude (e.g., Cohrs, Abele, & Dette, 2006; Grant & Langan-Fox, 2007; Griffin, 2001). Measured longitudinally, Neuroticism predicts a host of work-related experiences. Individuals high on Neuroticism-related traits at age 18 have lower work satisfaction and financial security at age 26 (Roberts et al., 2003). Over the transition into the workforce, college seniors prone to negative affect experience more conflict, anxiety, and frustration at work (Spector & O'Connell, 1994). After this transition, Neuroticism continues to shape work experiences, such as errors at work and lower mental health and job satisfaction 1 year later (Bond & Bunce, 2003), self-reported job stress over a 7-month period (Mills & Huebner, 1998), and greater time pressures at work (Kohn & Schooler, 1982). Working experiences have also been associated with personality change. Using residualized change scores, Roberts and colleagues (2003) found that decreases in Neuroticism-related traits between ages 18 and 26 were related to a higher status occupation at age 26, and Brousseau and Prince (1981) found that increases in emotional stability across middle adulthood were associated with self-perceived meaningful jobs. Finally, Kohn and Schooler (1982) found that, among middle-aged men, oppressive working conditions at an earlier time point was associated with increases in psychic distress (Neuroticism) approximately 10 years later.

Extraversion

Concurrently, Extraversion correlates positively with decision making opportunities at work (Grant & Langan-Fox, 2007; Hochwälder, 2006), and is either positively related (Cohrs et al., 2006) or unrelated (Hochwälder, 2006) to psychologically demanding jobs. In early adulthood, individuals high on Extraversion-related traits at age 18 achieve higher occupational status and stimulating work by age 26, and individuals who increase in such traits over this time interval attain higher status occupations by age 26 (Roberts et al., 2003). Although occupational experiences were unrelated to personality change in young adulthood, in a small sample of educated women, those who became more successful between ages 27 and 43 increased in the Extraverted-related traits of agency and norm adherence (Roberts, 1997).

Openness

Kohn and Schooler's (1982) classic 10-year longitudinal study highlights the reciprocity between Openness and work experiences. Men high on ideational flexibility (Openness) were employed in more substantively complex jobs with less supervision, fewer working hours, and greater likelihood of a self-directed position at the 10-year follow-up. Men employed in substantively complex work with time pressures increased in ideational flexibility over 10 years, whereas men with close supervision, manual labor, and work routinization decreased. Clausen and Gilens (1990) found a similar pattern among women. More recent work has tested concurrent, but not longitudinal, relations between Openness and job characteristics, with mixed results: Openness is either positively related (Hochwälder, 2006) or unrelated (Grant & Langan-Fox, 2007) to decision making latitude and negatively related (Cohrs et al., 2006) or unrelated (Grant & Langan-Fox, 2007; Hochwälder, 2006) to psychologically demanding jobs.

Agreeableness

Research that includes Agreeableness has found this trait to be unrelated to either psychologically demanding jobs or decision making latitude measured concurrently (e.g., Cohrs et al., 2006; Hochwälder, 2006). We are not aware of longitudinal research that has tested how Agreeableness and occupational experiences shape each other over time.

Conscientiousness

Conscientious individuals tend to be employed in highly demanding jobs (Cohrs et al., 2006; Schaubroeck, Jones, & Xie, 2001), but jobs that allow them to set their own schedules and make their own decisions (Schaubroeck et al., 2001; Parker & Sprigg, 1999). In some samples, however, Conscientiousness is unrelated to either demands or control (Hochwälder, 2006; Cohrs et al., 2006; Parker & Sprigg, 1999). Conscientiousness-related constructs also share longitudinal relations with occupation-related experiences. For example, men with a self-directed personal orientation (Conscientiousness) earn higher salaries and have less supervision over a 10-year span, and men in self-directed positions at work increase in such traits over this period (Kohn & Schooler, 1982). Individuals with Conscientiousness-related traits at age 18 achieve higher occupational attainment and financial security by age 26, and those who attain financial security by age 26 increase in such traits over this 8-year time period (Roberts et al., 2003).

As mentioned above, less research has systematically examined the association between personality and physical or dangerous aspects of the working environment. Characteristics that, in part, define physically demanding working environments, such as getting your hands dirty, are typically used as indicators of occupational attainment rather than studied as a separate component of the working environment (e.g., Roberts et al., 2003). Individuals with traits related to Extraversion, Conscientiousness, and low Neuroticism tend to reach higher occupational levels (Roberts et al., 2003) and thus may be less likely to be employed in physically demanding jobs. In addition, individuals low on Agreeableness, who have trouble getting along with others, and individuals high on the excitement-seeking facet of Extraversion, who seek out physically stimulating environments, may be more likely to be employed in physically demanding or hazardous working environments. Previous research, however, has not specifically addressed these potential associations.

The Present Research

The aims of the present research are twofold. First, because previous research on personality and the work environment has typically relied on noncomprehensive measures of either personality or the working environment, we first seek to determine their concurrent relation

using established measures of both. Second, we test whether individual differences in job characteristics predict individual differences in personality change (and vice versa) over time. Using a community sample, we measured personality, occupation, and the occupational environment twice, approximately 10 years apart. Our design offers two advancements over previous research. First, the economically diverse, middle-aged sample allows us to examine the interplay between personality and job characteristics in individuals with established careers employed in a broad range of occupations; previous research has relied primarily on either young adults or select groups of adults. Second, we assess both personality and job characteristics at two time points, which allows us to test the influence of one variable on the other, controlling for their initial levels and concurrent relations. Previous research has often lacked such controls, and some have specifically highlighted the need for cross-lagged models (e.g., Van Aken, Denissen, Branje, Dubas, & Goossens, 2006). By measuring both personality and job characteristics at each time point, we have greater control over testing the hypothesized temporal relations over time. Although cross-lagged models still face the third-variable problem, given that it is impossible to manipulate these variables, this approach is a stronger test of the hypothesized causal relations than has been utilized in the past. We outline our hypotheses below.

It is clear from the literature that individuals high in Neuroticism should perceive their jobs to have less Decision Latitude and more Psychological Demands. It is unclear, however, how the remaining traits should be related to these dimensions. Previous research indicates that extraverts are likely to have jobs with greater levels of decision making latitude; Extraversion has not been shown to be consistently related to Psychological Demands. For Openness, Agreeableness, and Conscientiousness, we draw from related research, when possible, to form hypotheses. Because open people are creative and flexible, particularly in the workplace (Kohn & Schooler, 1969, 1982), we predict that these individuals are likely to have jobs high on Decision Latitude. Of the five traits, research on Agreeableness is the most mixed; thus, we do not make specific predictions. The evidence is also mixed for Conscientiousness, but given that conscientious people tend to be competent in the workplace (Hogan & Holland, 2003) and entrepreneurial (Zhao & Seibert, 2006) they may be more likely to be in active jobs, that is, jobs high on both Decision Latitude and Psychological Demands (Karasek, 1979).

Longitudinally, both the FFT and environmental approaches agree that personality may shape an individual's job characteristics, whereas environmental approaches, but not the FFT, predict that job characteristics shape personality over time. We expect that individuals higher in Emotional stability (Mills & Huebner, 1998), Extraversion (Roberts et al., 2003), Openness (Kohn & Schooler, 1982), and Conscientiousness (Kohn & Schooler, 1982; Spector & O'Connell, 1994) will increase in Decision Latitude and those higher in Emotional Stability (Spector & O'Connell, 1994), Extraversion (Roberts et al., 2003), and Conscientiousness (Kohn & Schooler, 1982) will increase in Psychological Demands.

The FFT and environmental approaches make competing hypotheses, however, for how occupational experiences should be associated with personality change. The FFT predicts that the working environment will be largely unrelated to personality change, whereas environmental approaches predict that change may differ by occupation. If job characteristics predict changes in personality over time, then individuals in jobs that are higher in Decision Latitude should show decreases in Neuroticism (Kohn & Schooler, 1982) and increases in Extraversion (Roberts et al., 2003) and Openness (Kohn & Schooler, 1982), and individuals in jobs with high Psychological Demands should show increases in Extraversion (Roberts et al., 2003). As there is little research on the physical aspects of the working environment and personality, we do not make explicit predictions for how these variables will be related, either concurrently or over time.

METHOD

Participants and Procedure

Participants are members of the Epidemiologic Catchment Area (ECA) study of East Baltimore (Eaton et al., 1997). In 1981, 4,238 residents were probabilistically chosen from a total target population of 175,211 adult household residents; 3,481 residents completed interviews. The sample was followed up in 1993–1998 (n = 1,920) and again in 2004–2005 (n = 1,071).

Valid personality scores were available for only a subset of participants from the 1993 (baseline) and 2004 (follow-up) assessments (ns = 774 and 929, respectively). For a comprehensive description of the overall sample and general attrition, see Löckenhoff et al. (2008). From these subsets, we selected participants who were employed full-time during the year prior to the 1993 (baseline) assessment and those who were employed full-time during the year prior to the 2004 (follow-up) assessment.[1] A total of 722 participants met the employment criterion: 175 participants that completed the 1993 assessment only, 250 participants that completed the 2004 assessment only, and 297 that completed both assessments. We used the baseline assessment from the longitudinal sample for all concurrent analyses reported in the Results.[2] Participants who completed both assessments (n = 297) were used to test the longitudinal relations between personality and job characteristics. Participants ranged in age from 30 to 77 in the concurrent sample and from 30 to 62 at baseline in the longitudinal sample. Other demographic information for the sample is given in Table 1.

Measures

Occupational experiences—Participants rated 28 items about their work environment, based on Karasek's (1979) Quality of Employment Surveys. Following Karasek (1985), we derived four subscales: *Decision Latitude*, a composite of Decision Authority (e.g., "My job allows me to make a lot of decisions on my own.") and Skill Discretion (e.g., "My job requires me to be creative."), *Psychological Demands* (e.g., "I am free from conflicting demands that others make." [reverse-scored]), *Physical Demands* (e.g., "My job requires a lot of physical effort."), and *Hazardous Work Environment* (e.g., "My job exposes me to dangerous work methods."). Participants were asked to refer to their last full-time job and respond on a Likert scale from 1 (*strongly disagree*) to 4 (*strongly agree*). Scale scores were calculated based on Karasek's (1985) formulas. Alpha reliabilities were .72 for Decision Latitude, .62 for Psychological Demands, .84 for Physical Demands, and .90 for Hazardous Work for the concurrent sample and .76 for Decision Latitude, .60 for Psychological Demands, .83 for Physical Demands, and .92 for Hazardous Work for the longitudinal sample at follow-up. Table 1 shows the means and standard deviations for these scales. Evidence from large, multinational samples indicate that these scales have acceptable reliability, similar factor structures across cultures, and the expected mean-level differences across occupations (e.g., managers have more Decision Latitude than lineman; Karasek et al., 1998). In addition, Karasek's measure has been shown to be as valid as expert observations of the working environment (Karasek et al., 1998).

Personality—At both assessments, participants completed the 240-item Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992), a measure of the five major

[1]Participants were only asked about their full-time employment; thus, we are unable to include participants who may have been working part time.

[2]We ran all of the concurrent analyses again using data from the follow-up assessment, instead of the baseline assessment, and found the same pattern of associations.

domains of personality: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Each of the five major domains contains six facet scales that provide a comprehensive and detailed assessment of adult personality. Raw scores were converted to T-scores (M = 50, SD = 10) using the combined-sex norms for adults reported in the Manual. Internal consistency coefficients for the self-report ratings range from .86 to .95 for the domain scales and from .56 to .90 for the facet scales in the normative sample (Costa & McCrae, 1992). Means and standard deviations for the five personality factors are presented in Table 1.

Occupations—To examine differences between occupations, we divided participants based on two objective criteria: occupational classification and the Nam-Powers-Boyd rating of occupational prestige. Participants' occupations in both samples were coded based on the 2000 census occupational codes. The U.S. Equal Employment Opportunity Commission grouped occupations from the 2000 census into nine categories; to narrow down this classification, we collapsed these categories into three broad groups: white collar (officials, managers, and professionals), lower white collar (sales workers and administrative support workers), and blue collar (craft workers, operatives, laborers and helpers, and service workers). At baseline, ns = 230, 212, and 200, respectively for blue, lower white, and white collar occupations (occupational classification was missing for 80 participants). We refer to this categorical variable as occupation classification.

Participants were also classified based on their occupation's Nam-Powers-Boyd prestige rating. The census-specific Nam-Powers-Boyd rating is based on education levels and income for each occupation, relative to all other occupations assessed in the census. Ratings range from 0 to 100 and can be interpreted as a percentile. For example, an occupation's score of 56 indicates that 56% of the working population in the United States falls below that occupation in terms of education and income (Nam & Boyd, 2004). In the present research, occupational prestige scores are based on the 1990 census. We use the prestige score as a continuous variable when it is included as a covariate in the analyses, but as a dichotomous measure when we test prestige as a moderator of the longitudinal relations between personality and occupational experiences.

Occupation change—Because a number of participants in our longitudinal sample changed jobs between baseline and follow-up, we were able to test whether transitioning into a different occupational context had an effect on personality. We operationalized occupation change in two ways. First, at follow-up, participants recounted their occupational history and indicated, year-by-year, whether they remained in the same job (n = 127), changed jobs but remained at the same company (n = 57), or changed companies (n = 112) between baseline and follow-up (occupational history was missing for one participant). We refer to this categorical variable as occupation change.

Second, we classified participants' occupations at follow-up into white collar (n = 107), lower white collar (n = 101) and blue collar (n = 89). We then tested for differences between continuous, upward, and downward occupational mobility. Between baseline and follow-up, 232 participants remained in the same occupational classification (e.g., white collar at both baseline and follow-up), 31 participants experienced upward occupational mobility (e.g., from blue collar to lower white collar), and 24 participants experienced downward occupational mobility (e.g., from white collar to lower white collar). We refer to this categorical variable as occupational mobility.

Statistical Overview

To test how personality and occupational characteristics influence each other over time, we conducted a series of cross-lagged analyses (Ferrer & McArdle, 2003). The cross-lagged model specifies each variable at follow-up as a function of three components: (1) an autoregression (β), representing the effect of the same variable at baseline; (2) a cross-lagged regression (γ), representing the effect of the other variable at baseline; and (3) a residual (*d*), which is allowed to correlate with the residual of the other variable (see Figure 1). All coefficients reported in the Results are standardized.

We used a multiple group analysis to determine if the four occupational variables moderate the longitudinal relation between personality and job characteristics. We tested whether each cross-lagged parameter should be either estimated freely or constrained to be equal across the different groups. A model with freely estimated cross-lagged parameters that fits the data better than a model with cross-lagged parameters constrained to be equal (defined as $\Delta\chi^2/\Delta df$) indicates a significant moderating effect of occupation.

Finally, due to our large sample size in the concurrent sample and the number of analyses, we adopt the criteria often used in this area of research (e.g., Roberts et al., 2003): We set the alpha level at $p < .01$ to reduce the possibility of a Type I error and we rely on Cohen's (1992) guidelines for interpreting small ($r = .10$), medium ($r = .30$), and large ($r = .50$) effect sizes. We focus on effects that are at least small in magnitude.

RESULTS

Concurrent Relation Between Personality and Occupational Experiences

Zero-order correlations between personality and the four job dimensions indicate that personality is most strongly related to Decision Latitude (see Table 2). Participants high in Neuroticism reported less decision making latitude at work, whereas participants high in Extraversion, Openness, and Conscientiousness reported more latitude. Disagreeable participants were employed in physically demanding jobs and jobs with a hazardous working environment. Finally, those low in Extraversion and Conscientiousness also reported jobs with hazardous working conditions. Personality was unrelated to Psychological Demands. Most findings held when we regressed each job characteristic on all five factors, controlling for gender, age, and the continuous occupational prestige measure (used as a proxy for differences between occupations); the association between (low) Agreeableness and Physical Demands and Extraversion and Hazardous Work were reduced to nonsignificance. In addition, the positive relation between Neuroticism and Psychological Demands was now significant ($\beta = .10$, $p < .01$).

Occupation largely did not moderate the relation between personality and the working characteristics. Occupational prestige moderated just 2 of the 20 relations: Extraversion and Psychological Demands and Agreeableness and Hazardous Work. These moderators indicated that extraverted participants in high prestige occupations reported the most psychologically demanding jobs, and disagreeable participants in low prestige jobs reported the most hazardous working conditions. In both cases, however, these effects only accounted for an additional 1% of the variance. Occupational classification (i.e., collar) did not moderate any of the relations between personality and job characteristics. These findings indicate that the relation between personality and the working environment were similar across a wide spectrum of occupations. That is, neurotic participants reported their jobs to have less opportunity for making decisions and expressing creativity regardless of whether they were employed as bus drivers or surgeons.

Gender and age also largely did not moderate the association between personality and the job characteristics. In fact, only one effect emerged: Gender moderated the association between Neuroticism and Hazardous Work. The addition of this interaction, however, only accounted for an additional 1% of the variance. Age did not moderate any of the associations.

The facet-level analysis provided a more nuanced picture of the association between personality and occupational experiences. Table 3 shows the correlations between the facets and the dimensions of the working environment; we highlight only the strongest correlates here ($r \geq .20$). In general, the facet analyses indicated which aspects of the traits were driving factor-level associations with the job characteristics. For example, those prone to depression (N3: Depression) and those who often feel overwhelmed by stress (N6: Vulnerability) have jobs lacking decision making authority, whereas those who are dominant and forceful (E3: Assertiveness), those who need to keep busy (E4: Activity), those who are capable (C1: Competence), and those who work hard to achieve their goals (C4: Achievement Striving), report more decision making authority. In addition, (low) A2: Straightforwardness and (low) A3: Altruism were associated with hazardous working conditions.

Not all of the facet-level associations followed the correlates at the factor level, suggesting that specific aspects of traits, but not others, are associated with job characteristics. For example, E4: Activity correlated with Psychological Demands, whereas E5: Excitement-Seeking was unrelated to this dimension. Further, disagreeable participants reported physically demanding jobs, but this held true only for those low in Trust and Straightforwardness; Tender-Mindedness, in contrast, was unassociated with this dimension.

Longitudinal Relation Between Personality and Occupational Experiences

Using our longitudinal sample, we next tested whether personality shapes perceptions of the work environment, whether the work environment shapes personality, or both, over time.

Developmental context—Between baseline and follow-up, participants were, on average, 11 years older ($M = 52.3$, $SD = 6.4$ versus $M = 41.5$, $SD = 6.4$), more educated ($M = 13.4$, $SD = 2.2$, versus $M = 13.2$, $SD = 2.1$), $t(296) = 4.92$, $p < .05$, earned more money ($M =$ \$17,752, $SD =$ \$3,780 versus $M =$ \$15,816, $SD =$ \$3,347), $t(296) = 8.27$, $p < .05$, and were more likely to be married (50% married vs. 31% married, $\chi^2 = 110.78$, $p < .05$). In contrast, occupational prestige did not change between baseline and follow-up ($M = 60.15$, $SD = 22.72$ vs. $M = 58.38$, $SD = 24.04$), $t(293) = 1.46$, *ns*.

Although not our primary focus, as this is a subsample of participants included in similar analyses reported elsewhere (Löckenhoff et al., 2008), we report the mean-level change and rank-order stability of personality at the sample level to provide context for subsequent analyses (see Table 4). Similar to the entire ECA sample, Openness decreased, whereas Neuroticism and Conscientiousness increased; only the change in Openness, however, was significant at $p < .01$. Rank-order stability ranged from .66 for Conscientiousness to .76 for Openness.

Turning to the occupational variables, only Psychological Demands changed over time: Participants reported less psychologically demanding jobs at the follow-up than at baseline. The rank-order stability of the job dimensions was considerably less than that of personality. Across the 10-year interval, test–retest correlations ranged from .36 for Psychological Demands to .60 for Physical Demands. To compare the average rank-order stability of the occupational characteristics to the average rank-order stability of personality, we computed mean correlations using Fisher's *r*-to-*z* transformation. On average, personality was more

stable (mean $r = .72$) than the occupational variables (mean $r = .49$; $z = 4.48$, $p < .01$). This difference is consistent with previous research demonstrating that personality tends to be more stable than both occupational variables (e.g., Bond & Bunce, 2003) and relationship-related variables (e.g., Neyer & Asendorpf, 2001). This difference in stability suggests that the individual's working environment may be more susceptible to outside influences than personality. We turn to this issue next.

Effect of personality on the working environment—Using the cross-lagged models described earlier, we first examine the influence of baseline personality on job characteristics at follow-up, controlling for baseline job characteristics and the concurrent relations between personality and the occupational variables (see Figure 1).[3] All of the cross-lagged models had an excellent fit to the data.

Personality at baseline had the strongest relation with changes in the Decision Latitude dimension (see Table 5). Consistent with our hypotheses, change in Decision Latitude was predicted by Neuroticism, $\chi^2(1) = 2.76$, *ns*, root mean-squared error of approximation (RMSEA) = .077, comparative fix index (CFI) = .993, Extraversion, $\chi^2(1) = 0.209$, *ns*, RMSEA = .000, CFI = 1.00, Openness, $\chi^2(1) = 0.374$, *ns*, RMSEA = .000, CFI = 1.00, and Conscientiousness, $\chi^2(1) = 0.211$, *ns*, RMSEA = .000, CFI = 1.00: Participants high in Neuroticism decreased in decision making latitude, whereas extraverted, open, and particularly conscientious participants at baseline reported more decision making latitude at the 10-year follow-up. Agreeableness was unrelated to change in this dimension.

Fewer longitudinal relations emerged for the remaining job characteristics (see Table 5): Disagreeable, $\chi^2(1) = 2.13$, *ns*, RMSEA = .062, CFI = .997, participants reported more physical demands on the job, and introverted participants, $\chi^2(1) = 0.799$, *ns*, RMSEA = .000, CFI = 1.00, reported more hazardous working conditions. Contrary to predictions, personality was unrelated to change in Psychological Demands. Notably, all longitudinal findings, with the exception of the relation between Hazardous Work and Agreeableness and Conscientiousness, replicate the concurrent analyses. Controlling for gender, age, and occupational prestige, the effect of Openness on Decision Latitude fell just below $p < .01$; all other findings were unchanged.

Occupation change and mobility, but not prestige and classification, moderated some of the lagged relations. For participants who changed companies between baseline and follow-up, Conscientiousness predicted increases in Decision Latitude, $\gamma = .21$, $p < .01$; $\Delta\chi^2(1) = 8.36$, $p < .01$. Open participants who remained in the same company but changed positions increased in Hazardous Work, $\gamma = .26$, $p < .01$; $\Delta\chi^2(1) = 9.21$, $p < .01$, whereas open participants who stayed in the same position or changed companies decreased in Hazardous Work, ($\gamma = -.12$, $p < .01$; $\Delta\chi^2(1) = 9.21$, $p < .01$. Finally, for upwardly mobile participants, Conscientiousness was associated with increases in Physical Demands, $\gamma = .37$, $p < .01$; $\Delta\chi^2(1) = 7.41$, $p < .01$. Neither gender nor age moderated personality and changes in working conditions between baseline and follow-up.

Similar to the concurrent analyses, the facet-level longitudinal analyses revealed which aspects of the traits shaped the change in job characteristics. For the findings reported below, all models yielded an acceptable fit to the data, median $\chi^2(1) = 1.16$, median RMSEA = .021, and median CFI = .999, and all γs were significant at $p < .01$. Participants high in

[3]For all of the cross-lagged analyses presented in the next two sections, we also ran regressions in which the variables at baseline were used to predict either the working dimensions or personality at follow-up. For example, we regressed Decision Latitude at follow-up on Decision Latitude and Neuroticism at baseline, and, likewise, we regressed Neuroticism at follow-up on Neuroticism and Decision Latitude at baseline. The regression analyses revealed the same pattern of results as the cross-lagged analyses.

N2: Angry Hostility (γ = −.14), N3: Depression (γ = −.18), N4: Self-Consciousness (γ = −.14), and N6: Vulnerability (γ = −.22) decreased in decision making opportunities on the job between baseline and follow-up. In contrast, E1: Warmth (γ = .17), E3: Assertiveness (γ = .22), E4: Activity (γ = .15), E6: Positive Emotions (γ = .19), O4: Actions (γ = .19), O5: Ideas (γ = .19), A1: Trust (γ = .14), A3: Altruism (γ = .16), C1: Competence (γ = .20), C3: Dutifulness (γ = .22), C4: Achievement Striving (γ = .24), C5: Self-Discipline (γ = .23), and C6: Deliberation (γ = .16) were associated with increases in this dimension over this interval.

Fewer associations emerged for the remaining three job characteristics. N1: Anxiety (γ = .12), N2: Angry Hostility (γ = .15), (low) E1: Warmth (γ = −.17), (low) E2: Gregariousness (γ = −.14), (low) A1: Trust (γ = −.19), and (low) A2: Straightforwardness (γ = −.17) were associated with increases in Physical Demands. Finally, those who are friendly and warm (E1: Warmth; γ = −.14), enjoy the company of others (E2: Gregariousness; γ = −.16), are receptive to their own feelings (O3: Feelings; γ = −.15), willing to try new things (O4: Actions; γ = −.15), and who believe others are honest (A1: Trust; γ = −.16) report fewer hazardous working conditions over time. Interestingly, none of the 30 facets predicted changes in Psychological Demands over the 10-year period. All facet findings held when controlling for gender, age, and occupational prestige, except for the effect of E4: Activity on Decision Latitude and the effects of E1: Warmth, O3: Feelings, and O4: Actions on Hazardous Work.

Effect of the working environment on personality—With our conservative alpha level ($p < .01$), none of the job characteristics predicted change in personality at the factor level. Relaxing alpha to $p < .05$, job characteristics were associated with change in two traits: Participants with psychologically demanding jobs at baseline became more extraverted, γ = .09, $p < .05$; $\chi^2(1) = 2.01$, *ns*, RMSEA = .058, CFI = .996, and participants who had hazardous working conditions became more disagreeable between the two assessments, γ = −.09, $p < .05$; $\chi^2(1) = 1.53$, *ns*, RMSEA = .013, CFI = 1.00.

The occupational variables moderated only one association: Participants in low prestige jobs with hazardous working conditions decreased in Extraversion, γ = −.19; $\Delta\chi^2(1) = 6.78$, $p < .01$. Occupational classification, change, and mobility did not moderate any of the working environment–personality relations. Neither gender nor age moderated the association between working conditions and changes in personality between baseline and follow-up.

Finally, at the facet level, both Physical Demands and Hazardous Work were associated with decreases in A1: Trust (γs = −.12 and −.14, respectively, both *p*s < .01). Both of these models, however, had a poor fit to the data: $\chi^2(1) = 16.12$, $p < .01$, RMSEA = .226, CFI = .954, and $\chi^2(1) = 10.27$, $p < .01$, RMSEA = .177, CFI = .968, respectively, and only the latter held when controlling for age, gender, and occupational prestige.

Correlated change—Some investigators have interpreted the correlation between the residuals at Time 2 (i.e., the correlation between the *d* parameters) as correlated change (e.g., Roberts 1997). That is, change in one variable over time is associated with change in the other variable. Out of the 20 correlations at the factor level, only 1 significant correlation emerged: Participants who increased in Conscientiousness also increased in Decision Latitude over the 10-year interval (see Table 5). Several other of these correlations were significant at $p < .05$ (see Table 5). The residuals, however, contain all of the variance not accounted for by the model, including error and potential time-of-measurement effects. Thus, because the residuals are ambiguous, it is difficult to make a substantive interpretation of this correlation.

DISCUSSION

The present research documented the concurrent relations between personality and occupational experiences and tested whether these experiences and personality mutually influence each other across middle adulthood. After we controlled for gender and occupational prestige, participants high in emotional stability, Extraversion, and Conscientiousness had jobs characterized by high Decision Latitude, whereas disagreeable and low conscientious participants had jobs with hazardous working conditions. Although personality in our middle-aged sample continued to develop modestly across the 10 years that we studied, individual differences in job characteristics contributed little to this development. In contrast, personality shaped several of these occupational experiences over this time.

Concurrent Relations Between Personality and Occupational Experiences

The present research sought to bring coherence to the literature on personality and occupational experiences by using well-established measures with a large, representative sample. Consistent with our hypotheses and previous research, individuals high in Neuroticism had jobs that allow them little latitude to voice their opinions or utilize their skills. Also supporting our hypotheses, extraverted, open, and conscientious individuals describe their jobs as allowing them to make decisions and exercise their creativity.

Neuroticism and Conscientiousness shared the strongest relations with the Decision Latitude dimension. High Decision Latitude is generally considered to be the most positive aspect of the working experience and is related to healthy jobs (Karasek et al., 1998); low Decision Latitude is characteristic of unhealthy workplaces. It is of note, then, that high Neuroticism and low Conscientiousness, the traits most consistently related to physical health-risk behaviors, such as smoking and drug use (Terracciano, Löckenhoff, Crum, Bienvenu, & Costa, 2008), are associated with health-risk conditions at work. Thus, in addition to personal physical health, high Neuroticism and low Conscientiousness are associated with unhealthy aspects of the working environment.

Surprisingly, none of the factor-level traits were related to the Psychological Demands dimension. Given that individuals high in Neuroticism tend to get overwhelmed, we expected that these individuals might be more likely to perceive their working environment as demanding. Yet, individuals high on Neuroticism were not any more or less likely to endorse such items; these individuals have other types of stressful working conditions. Interestingly, although Psychological Demands was unrelated to Extraversion at the factor level, it was associated with E4: Activity: Those with a high energy level and a need to keep busy reported psychologically demanding jobs. These individuals may take on many tasks at work, as their energy levels allow, and these tasks may naturally conflict with one another and/or put more demands on their time.

Prior research has neglected the association between personality and physical aspects of the working environment. In the present research, low agreeableness was most strongly related to these dimensions. Disagreeable individuals are argumentative and do not get along well with others (Costa & McCrae, 1992). Although some may have the resources to build careers that capitalize on their argumentativeness (e.g., trial lawyers), others may take jobs that involve little interaction with other people, which often means physically demanding or dangerous work. Supporting this speculation, disagreeable individuals in low prestige jobs reported the most hazardous working environments. Previous work that has combined physical aspects of the job and occupational attainment has found a negative association between Neuroticism and this composite measure of attainment (Roberts et al., 2003). In the current work, however, factor-level Neuroticism was unrelated to physical aspects of the

working environment. This divergence suggests that personality is related to specific aspects of the working experience, rather than more broad indicators of occupational attainment.

Finally, it is of note that the facet-level analyses provided additional information about the factor-level associations. Although many facets followed their factor-level associations, some specific aspects of the traits were more strongly associated with job characteristics than others. For example, at the factor level, Neuroticism was associated only with low Decision Latitude. But, those who are particularly prone to experiencing anger and frustration not only have jobs without decision-making latitude, but are also employed in physically demanding and hazardous jobs; impulsivity, in contrast, was largely unrelated to each of the job characteristics. And, in some cases, the facet-level associations were in opposite directions. Those who crave excitement, for example, had jobs with hazardous working conditions, whereas those high in warmth did not. Thus, because of the heterogeneous nature of the traits, some associations with the job characteristics are captured better by the facets than the broad domains.

Longitudinal Relations Between Personality and Occupational Experiences

The second aim of the present research was to test whether personality and occupational experiences mutually influence each other across middle adulthood. In young adulthood, personality contributes to an individual's job characteristics and these job characteristics are likewise associated with change in personality (Roberts et al., 2003). Although there is some evidence for this mutual relation in middle adulthood (Helson & Moane, 1987; Roberts, 1997), previous research has been limited to small, educated, middle-class samples. The current work broadens the focus to a socioeconomically diverse sample.

Personality played an active role in shaping the individual's working environment over the period of this study. Consistent with our predictions and the concurrent analyses, emotional stability, Extraversion, Openness, and Conscientiousness were associated with increases in Decision Latitude: Emotionally stable, extraverted, open, and conscientious individuals actively shape their jobs over time to include more decision making latitude and opportunities to express their creativity. These relations held regardless of the individual's occupation, that occupation's prestige, or whether the individual remained in the same or changed occupations. Personality also shaped physical aspects of the working environment: Disagreeable individuals' jobs increase in physical demands and introverted individuals' working conditions become more hazardous.

Neuroticism's association with negative occupational trajectories starts early and persists throughout the individual's working life. By their mid-20s, those high in neuroticism are already dissatisfied with their work and financially insecure (Roberts et al., 2003). As they progress through their careers, they continue to feel dissatisfied (Bond & Bunce, 2003; Judge, Heller, & Mount, 2002) and tend to make mistakes at work (Bond & Bunce, 2003). The present research suggests that individuals high in Neuroticism, in established careers over a significant period of time, have fewer opportunities to learn new skills, express their creativity, or make their own decisions. These conditions may contribute to the burnout and exhaustion that neurotic individuals often report (e.g., Mills & Huebner, 1998).

In contrast to Neuroticism, Extraversion, Openness, and Conscientiousness are associated with positive occupational trajectories. Extraverted and conscientious individuals achieve higher occupational status (Roberts et al., 2003), open individuals attain more complex jobs that do not require supervision (Kohn & Schooler, 1982), and Conscientiousness consistently predicts superior job performance (Barrick & Mount, 1991; Hurtz & Donovan, 2000). Given that these personality traits are linked with occupational advancement, it is not

surprising that extraverted, open, and conscientious individuals come to enjoy more authority and variety at work over time.

Although personality shaped occupational experiences, occupational experiences had only a small impact on personality. Individual differences in job characteristics were only associated with change in two traits at the domain level: psychologically demanding jobs predicted increases in Extraversion and jobs with hazardous working conditions predicted decreases in Agreeableness. To handle time pressures and multiple projects successfully, individuals may learn to be more assertive and active, as reflected in increases in Extraversion. Likewise, the stress of facing hazardous working conditions on a daily basis may drive people to become more cynical and antagonistic. These effects, however, did not reach the criteria for a small effect size by Cohen's standards. It is notable that, in the present study, the effect size for working experiences on personality was much smaller than the effect size of personality on working experiences.

These findings suggest that as individuals progress through their careers in midlife, they mold their everyday experiences on the job to fit their personality. Occupational psychologists have argued that workplaces tend to have homogenous personalities through attraction, selection, and attrition processes (Schneider, Smith, Taylor, & Fleenor, 1998). That is, individuals with specific personality traits may be attracted to specific occupations (attraction), employers may select individuals with specific traits (selection), and/or individuals may leave jobs that are incongruent with their traits (attrition). The data in the present study cannot speak directly to these mechanisms, but our findings do suggest that, at the individual level, the workplace evolves, in part, based on the employee's personality.

This homogeneity of personality likely does not occur through environmental effects on personality. Everyday working experiences largely do not mold personality or strengthen corresponding aspects of an individual's personality, as some have suggested (e.g., Roberts et al., 2003). From the perspective of the FFT, the unidirectional, rather than reciprocal, effect of personality on working experiences is the expected pattern, as personality trait change is hypothesized to be driven primarily by age-related brain maturation and changes in gene expression across the life span rather than life experiences (McCrae & Costa, 2003).

The relative paucity of effects of the working environment on personality change is contrary to the hypothesis that work experiences may have a more profound influence on personality change in middle adulthood (e.g., Roberts et al., 2003; Van Aken et al., 2006). Some argue that job characteristics have a greater effect on personality change when work is more integrated into the individual's identity. It may be, in fact, the opposite: As young adulthood is a time of uncertainty and flux, work experiences may have more opportunity to shape personality during this time because the individual's personality has yet to be consolidated. Although we cannot speak to young adulthood, in the current sample, job characteristics had little influence on personality development across middle adulthood.

Finally, personality is only one aspect of the person that is associated with conditions in the workplace; clearly other personal characteristics, such as intelligence and physical ability, contribute to the individual's working environment or interact with personality to shape the individual's career trajectory. Interestingly, cognitive ability is related to job performance, but not job autonomy (Morgeson, Delaney-Klinger, & Hemingway, 2005). It may be the case that cognitive ability has a greater influence on how well one performs on the job, whereas personality has a greater influence on the everyday realities of the working environment. These two factors could also interact, such that intelligent individuals who are highly conscientious achieve jobs with the greatest autonomy; this speculation awaits future research. In addition, characteristics of the working environment are likewise just one

component of the occupational experience. Personality may share different relations with other aspects of occupations, such as intrinsic (e.g., job satisfaction) and extrinsic (e.g., income) career success. In addition, transitioning from one role to another (e.g., promotion to manager, change in occupation) may be associated with different personality traits and trait change across the transition. Unfortunately, our crude measures of occupational mobility and relatively small sample sizes for those participants who did change occupational collar prohibited such an analysis in the current research.

Limitations and Future Directions

Our design allowed for a stringent test of the effect of job characteristics on personality development. That is, with measures of both personality and job characteristics at two points in time, we can control for their initial levels and concurrent relations. Designs that lack such controls (e.g., Brousseau & Prince, 1981; Roberts et al., 2003) can be misleading: An association between personality change from Time 1 to Time 2 and job characteristics at Time 2 could mean that either job characteristics predict personality change or that change in personality predicts those job characteristics. And, in fact, some researchers have called for the use of cross-lagged models to substantiate their residualized-change findings (Van Aken et al., 2006). The current research starts to tease apart temporal causality and suggests that personality has a greater effect on job characteristics than job characteristics on personality.

Despite the strength of our methodology, several limitations of the present research need to be addressed. First, participants were not asked how important their jobs were to their identity. Job characteristics may have a greater impact on personality development when the individual is highly invested in his/her career. Indeed, this is a core tenet of the social investment principle (Roberts et al., 2005). Most research in this area lacks such a measure. In the current study, however, nearly one third of our longitudinal sample remained in the same company, many in the same position, over the 10 years. Although clearly not a measure of identity, remaining in the same company reflects a certain commitment to the job and importance to the self-concept.

Second, our community-dwelling sample represented the broad spectrum of occupations. Although we consider this a great strength of the present work, we may lose occupation-specific relations. We attempted to take occupation into account by classifying occupations based on established indices of prestige and classification. Despite this effort, a variety of jobs were grouped together and our sample was too small to make direct comparisons between specific occupations. As there is some evidence that the relations between personality and concurrent job characteristics differ by occupation (e.g., Griffin, 2001), future research needs to test whether the longitudinal effects are also occupation specific. Nevertheless, our sample, by its age and occupational diversity, contributes an important piece to the literature in this area, which has focused disproportionately on educated, middle-class workers (e.g., Hochwälder, 2006; Roberts, 1997) or young adults (Neyer & Asendorpf, 2001; Roberts et al., 2003).

Third, we did not have data on working experiences for participants who were employed part-time instead of full-time. This deficit might influence the association between personality and the working environment, particularly for women. As women continue to balance family and careers, they may be more likely to be employed part-time than men are. Although we found almost no moderating effects of gender, future research should focus more broadly on part-time, as well as full-time, employment.

Fourth, our two-wave panel design has both strengths and limitations. Our design allowed us to test the longitudinal relations between personality and occupation controlling for initial

level and concurrent relations. Two time point cross-lagged models, however, have limitations. These models do not take time between assessments into account; if the assessments are too close together or too far apart the model may not capture the process. With only two assessments, we also cannot assess the shape of the trajectory of change (e.g., to distinguish between linear and quadratic change); multiple waves are needed to test different hypotheses on change. Finally, although cross-lagged effects help test for certain alternative causal hypotheses (e.g., the possibility that the temporal sequence is reversed or the possibility of reciprocal influence), they cannot rule out the possibility that a third variable influences both variables, creating a spurious correlation between the two.

Finally, we used self-report measures of both personality and the occupational environment. Replication with objective measures of the working environment and observer measures of personality would provide additional support for and specification for the role of personality dispositions in shaping occupational characteristics and experiences across the work career found in the current research.

The role of social structures in personality functioning has long been of interest to researchers across a variety of theoretical orientations. Our findings highlight the importance of traits for real-world consequences, but suggest that these consequences have a much smaller effect on subsequent personality development. That is, an individual's working environment changes, in part, based on his/her personality, but changes in personality are only marginally related to characteristics of the working environment. Few studies have systematically addressed this interplay in middle adulthood, and certainly more research is needed to substantiate our findings. But, with our large sample, robust measures, and longitudinal design, we offer a provocative piece of the puzzle to this ongoing debate.

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References

Aboa-Éboulé C, Brisson C, Maunsell E, Mâsse B, Bourbonnais R, Vézina M, et al. Job strain and risk of acute recurrent coronary heart disease events. Journal of the American Medical Association. 2007; 298:1652–1660. [PubMed: 17925517]

Barrick MR, Mount MK. The big five personality dimensions and job performance: A meta-analysis. Personnel Psychology. 1991; 44:1–26.

Bond FW, Bunce D. The role of acceptance and job control in mental health, job satisfaction, and work performance. Journal of Applied Psychology. 2003; 88:1057–1067. [PubMed: 14640816]

Brousseau KR, Prince JB. Job-person dynamics: An extension of longitudinal research. Journal of Applied Psychology. 1981; 66:59–62.

Clausen JA, Gilens M. Personality and labor force participation across the life course: A longitudinal study of women's careers. Sociological Forum. 1990; 5:595–618.

Cohrs JC, Abele AE, Dette DE. Integrating situational and dispositional determinants of job satisfaction: Findings from three samples of professionals. Journal of Psychology. 2006; 140:363–395. [PubMed: 16967742]

Costa, PT., Jr; McCrae, RR. Revised NEO Personality Inventory (NEO-PI-R) and the NEO Five-Factor Inventory (NEO-FFI) professional manual. Odessa, FL: Psychological Assessment Resources; 1992.

de Jonge J, Kompier MAJ. A critical examination of the Demand-Control-Support model from a work psychological perspective. International Journal of Stress Management. 1997; 4:235–258.

Eaton WW, Anthony JC, Gallo J, Cai G, Tien A, Romanoski A, et al. Natural history of Diagnostic Interview Schedule/DSM-IV major depression: The Baltimore ECA follow-up. Archives of General Psychiatry. 1997; 54:993–999. [PubMed: 9366655]

Ferrer E, McArdle JJ. Alternative structural models for multivariate longitudinal data analysis. Structural Equation Modeling. 2003; 10:493–524.

Grant S, Langan-Fox J. Occupational stress, coping and strain: The combined/interactive effect of the big five traits. Personality and Individual Differences. 2007; 41:719–732.

Griffin MA. Dispositions and work reactions: A multilevel approach. Journal of Applied Psychology. 2001; 86:1142–1151. [PubMed: 11768057]

Helson R, Moane G. Personality change in women from college to midlife. Journal of Personality and Social Psychology. 1987; 53:176–186. [PubMed: 3612488]

Hochwälder J. An empirical exploration of the effect of personality on general and job-related mental ill health. Social Behavior and Personality. 2006; 34:1051–1070.

Hogan J, Holland B. Using theory to evaluate personality and job-performance relations: A socioanalytic perspective. Journal of Applied Psychology. 2003; 88:100–112. [PubMed: 12675398]

Hurtz GM, Donovan JJ. Personality and job performance: The big five revisisted. Journal of Applied Psychology. 2000; 85:869–879. [PubMed: 11125652]

Inkeles A, Levinson DJ. The personal system and the sociocultural system in large-scale organizations. Sociometry. 1963; 26:217–229.

Judge TA, Heller D, Mount MK. Five-Factor Model of personality and job satisfaction: A meta-analysis. Journal of Applied Psychology. 2002; 87:530–541. [PubMed: 12090610]

Karasek R. Job demands, job decision latitude and mental strain: Implications for job design. Administrative Science Quarterly. 1979; 24:285–308.

Karasek, R. Job content questionnaire and user's guide. Lowell, MA: Department of Work Environment, University of Massachusetts, Lowell; 1985.

Karasek R, Brisson C, Kawakami N, Houtman I, Bongers P, Amick B. The Job Content Questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. Journal of Occupational Health Psychology. 1998; 3:322–355. [PubMed: 9805280]

Karasek, R.; Theorell, T. Healthy work: Stress, productivity, and the reconstruction of working life. New York: Basic Books; 1990.

King JE, Weiss A, Farmer KH. A chimpanzee (*Pan troglodytes*) analogue of cross-national generalization of personality structure: Zoological parks and an African sanctuary. Journal of Personality. 2005; 73:389–410. [PubMed: 15745435]

Kohn ML, Schooler C. Class, occupation, and orientation. American Sociological Review. 1969; 34:659–678. [PubMed: 5357706]

Kohn ML, Schooler C. Job conditions and personality: A longitudinal assessment of their reciprocal effects. American Journal of Sociology. 1982; 87:1257–1286.

Löckenhoff CE, Terracciano A, Bienvenu OJ, Patriciu NS, Nestadt G, McCrae RR, et al. Longitudinal stability and change in the East Baltimore Epidemiologic Catchment Area study: The influence of demographic characteristics on five indices of personality plasticity. Journal of Research in Personality. 2008; 42:577–598. [PubMed: 19122849]

McCrae, RR.; Costa, PT, Jr. Personality in adulthood: A Five-Factor Theory perspective. 2. New York: Guilford Press; 2003.

McCrae RR, Costa PT Jr, Lima MP, Simões A, Ostendorf F, Angleitner A, et al. Age differences in personality across the adult lifespan: Parallels in five cultures. Developmental Psychology. 1999; 35:466–477. [PubMed: 10082017]

Mead, GH. Mind, self, and society. Chicago: University of Chicago Press; 1934.

Melchior M, Caspi A, Milne BJ, Danese A, Poulton R, Moffitt TE. Work stress precipitates depression and anxiety in young, working women and men. Psychological Medicine. 2007; 37:1119–1129. [PubMed: 17407618]

Mills LB, Huebner ES. A prospective study of personality characteristics, occupational stressors, and burnout among school psychology practitioners. Journal of School Psychology. 1998; 36:103–120.

Nam CB, Boyd M. Occupational status in 2000: Over a century of census-based measurement. Population Research and Policy Review. 2004; 23:327–358.

Neyer FJ, Asendorpf JB. Personality-relationship transaction in young adulthood. Journal of Personality and Social Psychology. 2001; 81:1190–1204. [PubMed: 11761317]

Parker SK, Sprigg CA. Minimizing strain and maximizing learning: The role of job demands, job control, and proactive personality. Journal of Applied Psychology. 1999; 84:925–939. [PubMed: 10639910]

Roberts BW. Plaster or plasticity: Are adult work experiences associated with personality change in women? Journal of Personality. 1997; 65:205–232. [PubMed: 9226940]

Roberts BW, Caspi A, Moffitt TE. Work experiences and personality development in young adulthood. Journal of Personality and Social Psychology. 2003; 84:582–593. [PubMed: 12635918]

Roberts BW, Wood D, Smith JL. Evaluating Five Factor Theory and social investment perspectives on personality trait development. Journal of Research in Personality. 2005; 39:166–184.

Robins RW, Caspi A, Moffitt T. It's not just who you're with, it's who you are: Personality and relationship experiences across multiple relationships. Journal of Personality. 2002; 70:925–964. [PubMed: 12498360]

Schaubroeck J, Jones JR, Xie JL. Individual differences in utilizing control to cope with job demands: Effects of susceptibility to infectious disease. Journal of Applied Psychology. 2001; 86:265–278. [PubMed: 11393439]

Spector PE, O'Connell BJ. The contribution of personality traits, negative affectivity, locus of control, and Type A to the subsequent reports of job stressors and job strains. Journal of Occupational and Organizational Psychology. 1994; 67:1–11.

Terracciano A, Löckenhoff CE, Crum RM, Bienvenu OJ, Costa PT. Five-Factor model personality profiles of drug users. BMC Psychiatry. 2008; 8(22)

Terracciano A, McCrae RR, Costa PT Jr. Personality plasticity after age 30. Personality and Social Psychology Bulletin. 2006; 32:999–1009. [PubMed: 16861305]

Van Aken MAG, Denissen JJA, Branje SJT, Dubas JS, Goossens L. Midlife concerns and short-term personality change in middle adulthood. European Journal of Personality. 2006; 20:497–513.

Viken RJ, Rose RJ, Kaprio J, Koskenvuo M. A developmental-genetic analysis of adult personality: Extraversion and Neuroticism from 18 to 59. Journal of Personality and Social Psychology. 1994; 67:722–773. [PubMed: 8189349]

Zhao H, Seibert SE. The big five personality dimensions and entrepreneurial status: A meta-analytical review. Journal of Applied Psychology. 2006; 91:259–271. [PubMed: 16551182]

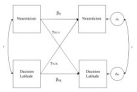

Figure 1.
Example cross-lagged model of personality and job characteristics. Cross-lagged paths between personality and job characteristics (γs) control for all antecedent factors.

Table 1

Descriptive Statistics for Demographics, Psychosocial Job Characteristics, and Personality Variables

	Concurrent	Longitudinal Sample at Follow-up
Demographics		
Age (years)	46.59 (8.9)	52.3 (6.4)
Gender (female)	58%	57%
Ethnicity (Caucasian)	62%	67%
Occupational prestige	55.18 (24.3)	58.76 (24.2)
Job characteristics		
Decision Latitude	69.77 (10.4)	70.17 (9.3)
Psychological Demands	31.69 (5.1)	31.18 (4.8)
Physical Demands	8.7 (2.5)	8.55 (2.3)
Hazardous Work	19.9 (5.2)	20.06 (5.0)
Personality		
Neuroticism	49.18 (9.7)	49.59 (9.1)
Extraversion	49.95 (8.4)	49.72 (8.5)
Openness	47.25 (8.8)	46.5 (8.5)
Agreeableness	49.87 (9.8)	48.3 (8.6)
Conscientiousness	49.07 (9.2)	49.98 (8.9)

Note. Standard deviations are shown in parentheses. $N = 722$ for concurrent sample and $N = 297$ for longitudinal sample.

Table 2

Concurrent Intercorrelations Between Working Dimensions and Correlations Between Personality and Perceptions of the Work Environment

	Decision Latitude	Psychological Demands	Physical Demands	Hazardous Work
Work environment				
Decision Latitude	—			
Psychological Demands	.11*	—		
Physical Demands	−.20*	.14*	—	
Hazardous Work	−.22*	−.02	.59*	—
Personality				
Neuroticism	−.20*	.08	.06	−.01
Extraversion	.16*	.08	.00	−.12*
Openness	.16*	.08	−.04	−.02
Agreeableness	−.08	.02	−.10*	−.23*
Conscientiousness	.20*	.02	−.04	−.10*

Note. $N = 722$.

* $p < .01$.

Table 3

Concurrent Correlations Between the Personality Facets and the Work Environment

Personality Facets	Decision Latitude	Psychological Demands	Physical Demands	Hazardous Work
N1: Anxiety	−.18*	.02	.01	−.04
N2: Angry hostility	−.14*	−.01	.11*	.13*
N3: Depression	−.23*	.09	.09	.05
N4: Self-consciousness	−.18*	.06	.06	.04
N5: Impulsiveness	−.06	.09	.02	.05
N6: Vulnerability	−.25*	.04	.06	.03
E1: Warmth	.13*	.07	−.06	−.18*
E2: Gregariousness	.08	.03	.02	−.08
E3: Assertiveness	.28*	.02	−.03	.01
E4: Activity	.25*	.16*	.02	−.10*
E5: Excitement-seeking	.08	.01	.14*	.13*
E6: Positive emotions	.17*	.03	−.03	−.09
O1: Fantasy	.03	.06	−.02	.01
O2: Aesthetics	.03	.02	.04	.02
O3: Feelings	.14*	.10*	−.10*	−.15*
O4: Actions	.15*	.00	.02	.01
O5: Ideas	.16*	.08	.02	.02
O6: Values	.12*	.11*	−.13*	−.11*
A1: Trust	.15*	.03	−.17*	−.19*
A2: Straightforwardness	−.02	.01	−.12*	−.22*
A3: Altruism	.05	.06	−.05	−.21*
A4: Compliance	−.02	−.01	−.05	−.12*
A5: Modesty	−.10*	.01	−.09	−.14*
A6: Tender-mindedness	−.09	.00	.03	−.10*
C1: Competence	.28*	.02	−.14*	−.15*
C2: Order	.10*	−.05	−.04	−.06
C3: Dutifulness	.15*	.02	−.08	−.16*
C4: Achievement striving	.25*	.05	−.02	−.05
C5: Self-discipline	.18*	−.02	−.04	−.08
C6: Deliberation	.06	−.04	.00	−.01

Note. $N = 722$.

* $p < .01$.

Table 4

Means, Standard Deviations, 10-year Stability, and Change of Personality and the Psychosocial Job Characteristics

	Baseline	Follow- up	*t*(296)	Mean-Level Change (*d*)	Rank-Order Stability (r_{12})
Personality					
Neuroticism	48.5 (9.5)	49.6 (9.1)	− 2.56	−.11	.69*
Extraversion	50.1 (9.2)	49.7 (8.5)	.92	.04	.72*
Openness	47.6 (9.0)	46.5 (8.5)	2.91*	.13*	.76*
Agreeableness	48.4 (9.9)	48.3 (9.6)	.06	.01	.74*
Conscientiousness	48.9 (9.4)	50.0 (8.9)	−2.40	−.12	.66*
Job characteristics					
Decision Latitude	70.2 (11.1)	70.2 (9.3)	.08	.00	.43*
Psychological	32.2 (5.4)	31.2 (4.8)	2.99*	.20*	.36*
Demands					
Physical Demands	8.4 (2.5)	8.6 (2.3)	−1.37	−.08	.60*
Hazardous Work	19.6 (5.3)	20.1 (5.0)	−1.38	−.10	.53*

Note. Standard deviations are shown in parentheses. $N = 297$.

* $p < .01$.

Table 5

Personality-Job Characteristics Cross-Lagged Analyses

	Personality on Job Characteristics	Job Characteristics on Personality	Correlated Residuals
		Decision Latitude	
Neuroticism	−.15*	−.07	−.15†
Extraversion	.15*	−.02	.12†
Openness	.15*	−.02	.10
Agreeableness	.04	−.01	−.02
Conscientiousness	.21*	.03	.16*
		Psychological Demands	
Neuroticism	−.02	−.03	.03
Extraversion	.08	.09†	.10
Openness	.07	.04	.09
Agreeableness	−.03	−.04	.05
Conscientiousness	.06	.01	.12†
		Physical Demands	
Neuroticism	.09†	.05	.04
Extraversion	−.11†	.00	−.08
Openness	−.07	−.01	.07
Agreeableness	−.16*	−.06	−.01
Conscientiousness	.00	.04	−.07
		Hazardous Work	
Neuroticism	.06	.00	.02
Extraversion	−.15*	−.04	.00
Openness	−.09	−.03	.08
Agreeableness	−.06	−.09†	−.11†
Conscientiousness	.06	.04	−.12†

Note. $N = 297$.

† $p < .05$.

* $p < .01$.