

UC Davis

UC Davis Previously Published Works

Title

Personality trait change at work: Associations with organizational socialization and identification

Permalink

<https://escholarship.org/uc/item/0k04781x>

Journal

Journal of Personality, 88(6)

ISSN

0022-3506

Authors

Alessandri, Guido
Perinelli, Enrico
Robins, Richard W
et al.

Publication Date

2020-12-01

DOI

10.1111/jopy.12567

Peer reviewed

In Press (*Journal of Personality*)

Personality Trait Change at Work: Associations with Organizational
Socialization and Identification

Guido Alessandri

Sapienza, University of Rome

Richard W. Robins

University of California, Davis

Enrico Perinelli

University of Trento

Michele Vecchione & Lorenzo Filosa

Sapienza, University of Rome

Abstract

Objective. This study investigates associations between Big Five personality trait change, organizational socialization, and organizational identification during a three-year police officer training program ($N = 416$ police officer cadets). **Method.** Participants completed a questionnaire measuring the Big Five personality traits when they entered the training academy, and then completed the same personality questionnaire, along with measures of organizational socialization and identification, during their second ($n = 360$) and third ($n = 397$) year of training. **Results.** Results corroborated the hypotheses that (a) the Big Five traits can show systematic changes even across a relatively short time period and (b) this change is functional, given that the latent difference scores of all Big Five traits significantly predicted subsequent levels of organizational socialization and identification. **Conclusion.** Whereas the Big five personality traits showed mean level changes, these changes did not fully agree with theoretical expectations. These changes are linked to organizational socialization and identification processes. The theoretical and practical implications of these findings were discussed.

Keywords: personality trait change, Big Five, Latent Difference Score models, organizational socialization, organizational identification

Personality Trait Change at Work: Relationships with Organizational Socialization and Identification

Previous research suggests that early work experiences are associated with young adult personality development (see Bleidorn, Hopwood, & Lucas, 2018). Specifically, work experiences have been linked to changes in conscientiousness (Golle et al., 2019; Hudson, et al., 2012; Hudson & Roberts, 2014), emotional stability (Le, Donnellan, & Conger, 2014; Roberts & Chapman, 2000; Scollon & Diener, 2006; Specht, Egloff, & Schmukle, 2011; Van Aken, Denissen, Branje, Dubas, & Goossens, 2006), extraversion (Wille, Beyers, & De Fruyt, 2012), and, for studies focused on military service, agreeableness (Jackson, Thoemmes, Jonkmann, Lüdtkke, & Trautwein, 2012). There is considerably less evidence for changes in openness to experience (see Specht, 2018). A common thread in these studies, mostly conducted in U.S., Germany, Netherlands, & Belgium, is their focus on the general effect of change in role status (i.e., being a student and then becoming a worker, or being a worker and then losing one's job). The nature of the dynamic processes leading to these changes after people transition into (or out of) their work role has been neglected in most prior research (see Bleidorn et al., 2018, for a similar point).

In the present paper, we propose an integrative theoretical model linking personality trait change to two important role acquisition processes, namely organizational socialization and organizational identification. Integrating the transactional perspective on work role acquisition (Hoekstra, 2011) with the sociogenomic perspective on

personality change (Roberts & Jackson, 2008; Roberts & Wood, 2006), we propose that personality traits promote youths' organizational socialization by facilitating the key adaptive processes of organizational socialization and identification (Bauer & Erdogan, 2014; Mael & Ashforth, 1995). We tested this model using three annual assessments of personality traits in a complete cohort of young adults attending a police academy. The police academy provides a unique opportunity to investigate processes tying personality traits to social processes occurring at work. Indeed, attending a police academy is conceivably one of the work experiences with the greatest potential impact on personality (Jackson et al., 2012), given that the police academy culture is militaristic in nature, and characterized by a rigid hierarchy, clearly defined rules and values, strict discipline, and a strong sense of community life (Soeters, 2018). Moreover, past research in the police work environment showed that personality traits as neuroticism, conscientiousness, and, in a certain degree, extraversion are associated with performance (Cortina, Doherty, Schmitt, Kaufman, & Smith, 1992; Detrick & Chibnall, 2006), and low levels of work-related stress (Garbarino, Chiorri, & Magnavita, 2014; Garbarino, Cuomo, Chiorri, & Magnavita, 2013).

Whereas young adults admitted to the police academy are initially selected for their fit with the role expected profile and norms (Caforio, 2018, p. 274), once entered they are required to conform with the strict discipline of the police academy, while learning new role related skills and abilities (Ashforth & Saks, 1996; Fang, Duffy, & Shaw, 2011). Thus, like all life events that have clearly defined behavioral, cognitive, and emotional

demands, the police academy is likely to lead to personality trait change (Bleidorn et al., 2018).

Psychological and Organizational Mechanisms Contributing to Personality Trait Change

From a personality perspective, occupational preferences are best understood as resulting from the interplay between youths' personality and their specific environment, and as such they represent an example of characteristics adaptations (see McCrae & Costa, 2008). According to Holland's theory (1973, 1997), for example, occupational preferences represent a direct expression of an individual's personality. Whereas recent studies have disputed the idea that occupational preferences can be completely reduced to the byproduct of the interactions between personality genotypes and the environmental influences (Kandler, Bleidorn, Riemann, Angleitner, & Spinath, 2011), the association between personality traits and occupational choice remains strong (Larson, Rottinghaus, & Borgen, 2002; Helson, Roberts, & Agronick, 1995). Typically, youths prefer professions that they believe fit with their personality (Arnett, 2004), and differences are often observed in personality profiles of youths entering in different professions (e.g., Jackson et al., 2012). Most interestingly, youths are often hired for particular jobs on the basis of selection and placement strategies aimed at maximizing person-job fit (see Holland, 1976; Schneider, 1987). These strategies assume that individuals will adapt more quickly and perform best in those jobs that are congruent with their personalities (Holland, 1976).

Following the above reasoning, individuals with greater personality-job fit will be more inclined to express themselves in accordance with organizational rules, norms, and constraints when they are first socialized into their new work role (Bauer & Erdogan, 2014). Functioning well in a new job requires understanding the prescriptions of the organizational culture and acquiring the knowledge, skills, and ability needed to perform the new job role (Chao, 2012). This process is called *organizational socialization*. Accordingly, as young adults move from their initial newcomer status toward full member status, they are increasingly required to enact behaviors associated with their work role (Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007; Ellis, Bauer, & Erdogan, 2015).

Compared to civilian organizations, the process of organizational socialization is more extreme in military structured organizations, such as police academies. Military organizations are indeed “greedy institutions” (see Segal, 1986), demanding of cadets a high degree of physical and psychological resources. For example, once entered in the academy, cadets must undergo a tiring and often harsh military training (Caforio, 2018), while learning to conform to strict conduct rules (Soeters, 2018), to respect a formalized and highly hierarchical role system (Soeters, 2018), and to accept a certain lack of separation between private and working life (Hall, 2011). Investing in their new work role is then expected to elicit and accentuate the expression of personality traits that led youths to enter the police academy in the first place (Roberts & Jackson, 2008). The above reasoning corroborates what has been called the “*corresponsive principle*” of personality development (Caspi et al., 2005; Roberts &

Nickel, in press), suggesting that people select and create different environments in correspondence with their personality (selection, manipulation), react differently to the same environment (reactive), or evoke different reactions from the same environment (but see den Boer, Klimstra, Branje, Meeus, & Denison, 2019).

Conceivably, the higher the discrepancy between the youths' personality profile and that associated with their new military job role, the greater the pressure to change their personality. Thus, larger personality change is expected for those police cadets with a personality profile more discrepant from that required by their work role. Moreover, the more cadets invest in their job, and the more they become committed to their careers, the more they are expected to show change in their personality traits in response to the workplace demands. In this sense, personality trait change occurring after cadets enter a police academy is considered adaptive because it promotes organizational socialization and identification with the new work role.

This latter expectation is derived from the *social investment principle*, which states that personality traits tend to change as a consequence of young adults' investment in adult roles (Bleidorn & Denissen, in press). Becoming a police cadet imposes numerous specific behavioral demands that shape personality by rewarding role-appropriate behavior and punishing inappropriate conduct (Hudson, Roberts, & Lodi-Smith, 2012). In other words, role-experiences form a reward structure that promotes personality trait change (Roberts & Wood, 2006). Indeed, behavioral expectations surrounding work-related roles are usually widely

shared by workers belonging to the same culture or organization (Schneider, 1987).

To become a police officer, cadets are expected to change their day-to-day thoughts, feelings, and behaviors in accordance with their new role. According to the *socio-genomic model* of personality, these demands influence personality traits in a bottom-up fashion, through prolonged effects on personality-relevant states (Wrzus & Roberts, 2017). During the first year of training, cadets are expected to change their behavioral habits and conform to the strict military rules and discipline, and to learn new academic subjects and procedures necessary for their future role. Thus, cadets are exposed to strong situational pressures during a developmental period – young adulthood – in which their personality is particularly responsive to environmental pressure (Bleidorn, Kandler, & Caspi, 2014; Hopwood et al., 2011), and susceptible to change (Bleidorn, 2015; Lucas & Donnellan, 2011; Roberts & DelVecchio, 2000; Roberts, Walton, & Viechtbauer, 2006).

In general, the first year in the academy is likely to have the strongest behavioral, emotional, and cognitive impact on a personality (Caforio, 2018), thus potentially promoting changes on all traits. In the subsequent two years, the pressure to learn behavioral rules and develop new role-specific competences remains at a constant rate. In contrast, the expected level of efficiency and responsiveness increases, leading to heavier emotional and cognitive demands. Moreover, as the end of the academy looms, cadets face two important cornerstones: (1) the formal academic exams, and (2) technical examinations that will affect their

operative assignments. Although no previous study has explicitly examined personality trait change in this context, on the basis of the above theorizing, we expected that the nature of the demands imposed by the academic environment may impact the traits of neuroticism and openness to experience. On the contrary, we expect the pressure exerted by the academy environment on extraversion, agreeableness, and conscientiousness should be limited to the process of role acquisition occurring in the first two years.

Along with organizational socialization, organizational identification is another important force potentially driving personality change. Theoretically, these two processes are strongly connected. Indeed, the primary aim of organizational socialization processes is “to transform newcomers into exemplars of their organizations” (Ashforth & Saks, 1996, p. 155). Thus, not surprisingly, at the individual level, one of the outcomes of organizational socialization is an internalization of the norms, values, and behaviors associated with one’s work role into one’s own self-concept (Mael & Ashforth, 1995). According to *self-perception theory*, by engaging with the new organizational role, cadets start to think about themselves in the terms implied by the role (Bem, 1972). In the long run, the investments made by youths leads their new cadet status to acquire salience, until it is integrated into their own identity and consequently promotes personality change (Roberts & Caspi, 2003). This process is called *organizational identification*, which has been defined as “a specific form of social identification in which people define themselves in terms of their membership in a particular organization” (Mael & Ashforth, 1995, p.

311-312). Conceptually, the more young adults invest in their work role, the more their organizational identification is expected to increase.

Identified individuals are expected to perceive themselves as psychologically interconnected with and attached to the organization (Ashforth & Mael, 1989; Dutton, Dukerich, & Harquail, 1994; Tajfel & Turner, 1986; van Dick et al., 2004). Therefore, organizational identification involves the internalization of one's organization norms and values into one's own self-concept. Likely, the more an individual's personality profile deviates from that associated with their organizational role, the higher their need to accommodate to it, and thus the higher the expected change on the discrepant traits (Block, 1982). In contrast, when an individual's personality profile does not deviate much from their organizational role, individuals simply align their personality through an assimilation process (Block, 1982), and the perceived pressure to change is low (see Asendorpf, 1992).

The Present Study

In the present study, we used Latent Difference Score models (LDS; McArdle, 2009; McArdle & Nesselroade, 2014) to empirically test our hypotheses about personality trait change and organizational socialization and identification. The Big Five personality traits were assessed at three time points: Three months after that participants entered the police academy (Wave 1), and then three months after the beginning of the second (Wave 2) and third (Wave 3) year of training. In the following, we present our hypotheses regarding the change in each specific trait and

then we present our hypotheses regarding their relationship with organizational socialization and identification.

Changes in Personality Traits

LDS is a convenient framework to study personality trait change for several reasons. In the first place, a LDS allows the decomposition of change in (1) a constant amount of change occurring continuously across all the study period (represented in Figure 1 by the latent variable “ g_1 ”), and (2) a specific proportion of changes occurring across waves (represented in Figure 1 by the latent variables “ Δ_1 Personality” and “ Δ_2 Personality”).

In general, it is not necessary to include both change components in a model (i.e., “constant” and “wave-specific” portions of change), and in fact LDS permits a closer examination of the functional representation of change that best represents the longitudinal dynamic of a specific construct (see Grimm, Ram, & Estabrook, 2017). Indeed, the opportunity to decompose change in “constant” (“ g_1 ”, in Figure 1) and “wave-specific” (“ Δ_1 Personality” and “ Δ_2 Personality”, in Figure 1) fits well with our assumption that while all personality traits are expected to change from Wave 1 to 2, only neuroticism and openness to experience are expected to change from Wave 2 to 3. In this regard, our hypotheses were represented in the model as follows.

For extraversion, agreeableness, and conscientiousness, we expect the variance of the first latent change score variable (i.e., variance of “ Δ_1 Personality”, namely parameter $\sigma^2_{\Delta_1P}$ in Figure 1) and of the second change score variable (i.e., variance of “ Δ_2 Personality”, namely

parameter $\sigma^2_{\Delta 2P}$ in Figure 1) to be significant, but we do not expect a systematic constant change across waves (thus, we expect a non-significant variance of “g₁”, namely parameter $\sigma^2_{g_1}$ in Figure 1), given that we expect the socialization pressure on those traits to be limited to the first phase of the academic attendance. Indeed, for those traits, we also predict positive and significant change for the first latent change score variable (i.e., a positive and significant value of parameter $\mu_{\Delta 1P}$, in Figure 1), but we expect a non-significant mean-level change between the second and third year of academy (i.e., non-significant mean of “ Δ_2 Personality”, namely parameter $\mu_{\Delta 2P}$ in Figure 1).

For both neuroticism and openness to experience, we expect the need to include a constant change factor, given that we expect a systematic constant change occurring throughout the three-year training. Furthermore, we expect a positive change (i.e., positive and significant value for parameter μ_{g_1} in Figure 1) for openness to experience, given that the academy offers a degree in economic subjects, and thus stimulates a certain degree of openness toward culture and experiences, as well as for neuroticism, as a result of the formal training, which can be perceived as increasingly stressful as the end of the academy approaches.

Personality Trait Change and Relationship with Organizational Socialization and Identification

Whereas few previous studies have investigated the relationship between personality and organizational socialization and identification, a number of expectations can be formulated based on the nature of the two processes. For example, organizational socialization and identification

pose demands linked to the pursuing of role mastery and success (conscientiousness; Hoekstra, 2011), in terms of social interactions and group integration (agreeableness; Wiggins & Broughton, 1985), independent decision making and social dominance (extraversion; Grant & Langan-Fox, 2006), stress resistance and adjustment (neuroticism; Le et al., 2014), as well as in terms of curiosity, and role exploration (openness to experience; Wille et al., 2012). Clearly, each of these demands is closely linked to the positive pole of each of the big five. Accordingly, we expected that the higher the score on the Big Five fit of the incoming candidates and that required by the role, the easier the process of socialization and identification. This idea was investigated in our model by testing the significance of a longitudinal paths predicting later organizational socialization and identification from personality traits at Wave 1.

We also tested the hypothesis that personality trait change across the academy years are associated with (1) effectively performing the new organizational role (i.e., showing higher in-role socialization), and with (2) investment in that role (i.e., showing higher identification). We did so by testing the significance of the longitudinal prediction of organizational socialization and organizational identification levels at Wave 3 from personality trait change occurring between W1 and W2. Third, we investigated the significance of the paths linking levels of organizational socialization and identification at Wave 2 to subsequent personality trait change occurring between Wave 2 and 3. The significance of this prediction would corroborate the hypothesis that investment in the

processes of organizational socialization and organizational identification may lead to subsequent personality changes.

Finally, in accordance with prospective studies that have attested organizational socialization as a predictor of organizational identification (see Ashforth & Saks, 1996), we expected organizational identification to increase as a consequence of organizational socialization. The underlying mechanisms linking the two processes is hypothesized to be the following: when newcomers enter a new organization, socialization processes help them to become effective insiders by increasing the salience of their membership and the likely of accepting it (Chao, O'Leary-Kelly, Wolf, Klein, & Gardner, 1994). In order to test this hypothesis, we tested the significance of the path connecting organizational socialization and identification over time.

The above set of predictions also implies the postulated indirect relation between personality and organizational processes. Indeed, as hypothesized, personality level at the beginning of training and personality change from Wave 1 to 2 are both expected to predict organizational identification at Wave 3, indirectly, through the mediation of organizational socialization at Wave 2. The idea that personality trait change leads to later better adjustment at work is then represented by the indirect relationship between personality trait change occurred from Wave 1 to 2 and organizational identification at T3 being mediated by organizational socialization at Wave 2. When performing the above models, we controlled for important covariates such as gender, age, and number of years of previous military experience (Caforio, 2018).

Method

Participants and Procedures

The present study included a complete cohort of 416 newcomers who applied and were selected for enrollment in a prestigious police academy. Age ranged from 19 to 32 ($M = 22.86$, $SD = 2.29$); 284 were males (68.3%) and 132 were females (31.7%). Data were collected in February 2015 (W1), 3 months after the beginning of training, and again in June 2016 (W2) and June 2017 (W3). The time lag was determined by the annual cycle of newcomers' evaluation in the training academy. Participants' completed all measures after logging into computers at the academy under the supervision of a trained psychologist, who explained how to access the electronic version of the questionnaire but did not interfere in any way in the completion of it.

Attrition Analyses

Of the 416 newcomers assessed at W1, 360 participated at W2 (86.5%), and 397 at W3 (95.4%). Attrition was mostly due to participants' unavailability at a specific wave. Participants with complete data from W1 to W3 did not differ from participants who were not retained in terms of sex [$\chi^2(1) = 3.17$, $p = .08$], or age, tenure, or personality [$F(7, 408) = .99$, $p = .79$] at W1, or on organizational socialization or identification at W2 [$F(2, 357) = 1.00$, $p = .97$]. Importantly, the Missing Completely at Random (MCAR) Little's test (Enders, 2010) supported the MAR hypothesis [$\chi^2(112) = 124.036$, $p = .21$]. Thus, we treated missing data by using Full Information Maximum Likelihood (FIML) estimation procedure in all subsequent models (Enders, 2010).

Measures

Organizational socialization. Organizational socialization was measured by the 6-item “full member” subscale from the Organizational Socialization Questionnaire (OSQ; Livi, Theodorou, Rullo, Cinque, & Alessandri, 2018). Sample item is: *“I have learned how to carry out my work-related activities and duties well”*. Responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha was .87 at W2 and .86 at W3.

Organizational identification. Organizational identification was measured by the 6-items scale developed by Mael and Ashforth (1992). Sample item is: *When I talk about [company name], I usually say ‘we’ rather than ‘they’*. Responses ranged from 1 (*totally disagree*) to 7 (*totally agree*). Cronbach’s alpha was .87 at both W2 and W3.

Big Five Personality Traits. Personality traits were measured using the Big Five Questionnaire (BFQ; Caprara, Barbaranelli, Borgogni, & Vecchione, 1993). The 40-item BFQ-2 assesses five domains (extraversion, agreeableness, conscientiousness, openness, and neuroticism) with 8 items for each domain. Respondents rated each item on a 5-point scale ranging from complete disagreement (1 = *very false for me*) to complete agreement (5 = *very true for me*). The alpha reliability coefficients are shown in Appendix 1 (Table 1a), and were all satisfactory, ranging from .75 (conscientiousness at W2) to .90 (neuroticism at W1).

Covariates. Covariates (all measured at W1) were gender (0 = *male*, 1 = *female*), age, and number of years of experience in a military organization.

Data Analytic Strategy

Measurement models. First, we built a measurement model for each construct (i.e., each Big Five trait, organizational socialization, and organizational identification) at each time point (W1, W2, and W3 for Big Five traits; W2 and W3 for organizational socialization and organizational identification). Each latent variable was composed by parcels of randomly selected items. Parcels offer several advantages over individual items, including higher reliability and better model estimations (Little, Cunningham, Shahar, & Widaman, 2002; Little, Rhemtulla, Gibson, & Schoemann, 2013). We created 4 parcels (2 items per parcel) for each Big Five trait, three parcels (2 items per parcel) for organizational socialization, and three parcels (2 items per parcel) for organizational identification. The same item parcels were used across waves, and the residual covariances among the same parcels across waves were freely estimated.

Measurement invariance. Establishing measurement invariance is a prerequisite for testing Latent Difference Score models (e.g., Clark, Nuttall, & Bowles, 2018). Thus, for each Big Five trait, we tested the tenability of *configural invariance* (the same observed variables load onto the same latent variable across time), *metric invariance* (factor loadings do not significantly vary across time), and *scalar invariance* (intercepts do not significantly vary across time). Given that mean level change in organizational socialization and identification were not of interest, measurement invariance tests for these variables were restricted only to the *configural* and *metric* level.

Latent difference score models. We investigated the shape of change for each of the Big Five trait by running five different univariate LDS models. These models are similar to the model reported in Figure 1. In the first model, the *no-change model*, the parameters σ^2_{g1} , φ_{g0_g1} , μ_{g1} , β_1 , and β_2 were all fixed to be zero. In the second model, the *proportional-change model*, the β_1 and β_2 cross-lagged parameters were freely estimated. In the third model, named the *proportional change with constant rate model*, the parameters β_1 and β_2 were constrained to be equal. In the fourth model, the *linear change model*, σ^2_{g1} , φ_{g0_g1} , and μ_{g1} were freely estimated, but $\mu_{\Delta 1P}$ and $\mu_{\Delta 2P}$ were constrained to be zero. The fifth model, the *dual change model*, estimated both β_1 and β_2 , but imposed an equality constraint on them. Before running all models, observed scores were linearly transformed into z-scores using the means and the standards deviations observed at Wave 1.

After establishing the best model to describe the observed change in each of the Big Five trait, we next investigated their longitudinal associations with organizational socialization and identification. In particular, we ran a series of multivariate models with (a) the best fitting univariate LDS model for a specific trait, (b) organizational socialization at W2 (OS_{W2}) and W3 (OS_{W3}), (c) organizational identification at W2 (OI_{W2}) and W3 (OI_{W3}), (d) covariates measured at W1 (age, gender, and previous experience in military organizations).

In each model, we first examined the impact of covariates on all latent variables, and then we fixed all non-significant paths to be zero. In this way, we retained in the models only the paths from covariates to

latent variables that may affect the relationships among latent variables of interest. Then, we specified all the hypothesized longitudinal relationships among latent variables, that is (a) prediction of organizational variables at W2 by personality traits level at W1 and personality trait change between W1 and W2 ($P_{W1} \rightarrow OS_{W2}$; $P_{W1} \rightarrow OI_{W2}$; $\Delta_1 P \rightarrow OS_{W2}$; $\Delta_1 P \rightarrow OI_{W2}$), (b) the autoregressive effects of organizational variables ($OS_{W2} \rightarrow OS_{W3}$ and $OI_{W2} \rightarrow OI_{W3}$) as well as their cross-lagged effects ($OS_{W2} \rightarrow OI_{W3}$ and $OI_{W2} \rightarrow OS_{W3}$), (c) the prediction of organizational variables at W3 by personality traits level at W2 and personality trait change between W2 and W3 ($P_{W2} \rightarrow OS_{W3}$; $P_{W2} \rightarrow OI_{W3}$; $\Delta_2 P \rightarrow OS_{W3}$; $\Delta_2 P \rightarrow OI_{W3}$), (d) the prediction of personality trait change between W2 and W3 by organizational variables at W2 ($OS_{W2} \rightarrow \Delta_2 P$ and $OI_{W2} \rightarrow \Delta_2 P$). Finally, we also tested the significance of the longitudinal mediation role of organizational socialization in the relationships between personality trait change and organizational identification, namely the path: $\Delta_1 P \rightarrow OS_{W2} \rightarrow OI_{W3}$.

Model evaluation

Mplus 8 statistical software (Muthén & Muthén, 1998-2017) was used to estimate all models and to handle missing data using the Full Information Maximum Likelihood (FIML; see Enders, 2010). The goodness of fit of each model was evaluated using the χ^2 test, the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA). We accepted CFI and TLI values $> .90$ and RMSEA values $< .08$ as indicators of adequate fit (Kline, 2016). Nested models were compared by using likelihood ratio tests ($\Delta\chi^2$) and by looking at differences in CFI

(Δ CFI). A non-significant $\Delta\chi^2$ and a Δ CFI < .01 were considered indicators of equivalent models (Cheung & Rensvold, 2002). Non-nested models were compared by using differences in Akaike's Information Criterion (Δ AIC), rescaled according to recommendations by Burnham and Anderson (2004): Δ AIC = $AIC_i - AIC_{\min}$, where AIC_{\min} is the minimum of the observed AIC values (among the i competing models). This transformation forces the best model to have Δ AIC = 0 while the rest of the models have positive values. Accordingly, a model that differs less than Δ AIC = 2 from the best fitting model in a specific dataset is said to be "strongly supported by the evidence." If the difference lies between $4 \leq$ and ≤ 7 there is considerably less support, whereas models with Δ AIC > 10 have essentially no support (Burnham & Anderson, 2004, p. 271).

Finally, the statistical significance of the hypothesized mediation effect was investigated using the Monte Carlo method for assessing mediation (Hayes & Scharkow, 2013; MacKinnon, Lockwood, & Williams, 2004; Preacher & Selig, 2012), with 20,000 replications and a 95% confidence interval (Selig & Preacher, 2008). If the 95% confidence interval around the estimated effect does not include 0, then the indirect effect is considered significant.

Results

Intercorrelations among Latent Variables

Latent variable correlations among personality traits, organizational socialization, and organizational identification within and across waves were presented in Appendix 1 and summarized here. Personality traits showed moderately high rank-order stability. Rank-order stability

coefficients aggregated over a one-year interval (i.e., averaging correlations observed across W1-W2 and W2-W3) ranged from .61 (neuroticism) to .83 (conscientiousness). Two-year rank-order stability (W1-W3) ranged from .46 (neuroticism) to .68 (extraversion).

Organizational socialization showed, at both Wave 2 and Wave 3, moderately high concurrent correlations with extraversion, agreeableness, conscientiousness, and neuroticism, whereas correlations with openness were small. Longitudinal correlations showed a similar trend, being highest for agreeableness (agreeableness W2 with organizational socialization W3; organizational socialization W2 with agreeableness W3), and the lowest for openness (openness W2 with organizational socialization W3; organizational socialization W2 with openness W3).

Organizational identification showed, at both Wave 2 and Wave 3, moderately-high concurrent correlations with extraversion, agreeableness, conscientiousness, whereas correlations with neuroticism and openness were small-medium in size. Similarly, longitudinal correlations with extraversion, agreeableness, and conscientiousness were medium (ranging from .41 for organizational identification W2 with extraversion W3 and agreeableness W3 to .49 for organizational identification W3 with both agreeableness W2 and conscientiousness W2), whereas longitudinal correlations with neuroticism and openness were small (ranging from .23 for organizational identification W3 with openness W2 to -.30 for organizational identification W2 with neuroticism W3).

Measurement Models and Measurement Invariance

Across all measurement models, standardized factor loadings ranged from: .60 to .84 ($M = .72$, $SD = .07$) for extraversion, .64 to .91 ($M = .78$, $SD = .11$) for openness, .68 to .86 ($M = .79$, $SD = .05$) for agreeableness, .53 to .78 ($M = .66$, $SD = .09$) for conscientiousness, .61 to .92 ($M = .83$, $SD = .11$) for neuroticism, .82 to .89 ($M = .86$, $SD = .03$) for organizational socialization, and .80 to .89 ($M = .84$, $SD = .03$) for organizational identification. Importantly, we found evidence of metric (organizational socialization and identification) or scalar invariance (partial or full) for all traits (Table 1). All subsequent models were built using the best fitting model obtained in this phase.

Univariate and Unconditional LDS Models for Big Five Traits

Extraversion. Extraversion levels resulted very stable across the three academic years. The proportional change model provided the best fit, but no significant changes occurred between Wave 1 and 2 (-0.01 , $SE = 0.035$, $p = .779$) or between Wave 2 and 3 (0.02 , $SE = 0.035$, $p = .549$). The cross-lagged parameter (-0.21 , $SE = 0.032$, $p < .001$) was significant, indicating a significant degree of rank order stability. The overall intercept (-0.06 , $SE = 0.047$) was not significant ($p = .222$), but there was significant variability (0.59 , $SE = .062$, $p < .001$). There was no significant effect of covariates on the intercept, the slope, or any of the difference change scores.

Openness. The dual change model best described the observed shape of change in openness to experience (Table 2). The intercept mean (-0.02 , $SE = 0.045$) was not significantly different from zero ($p = .646$). This result reflects our choice of z-centering all scores using Wave1 means

and standard deviations. However, the intercept variance (0.43, $SE = 0.046$) was significant ($p < .001$). Thus, young adults at Wave1 differed in their average level of openness to experience. The model also predicted a small but significant constant increase (0.08, $SE = 0.032$) over the three academic years, as attested by the significant slope mean ($p = .015$). The slope variance (0.13, $SE = 0.114$, $p = .243$) was nonsignificant, suggesting that youth did not differ significantly in the shape of their openness trajectory. Importantly, intercept and slope were significantly correlated (0.18, $SE = 0.075$, $p = .016$), indicating that individuals with higher openness at Wave 1 increased slightly faster. Finally, the cross-lagged parameter was negative (-0.69, $SE = 0.197$) and significant ($p < .001$), suggesting a progressive slowing of growth across time. The inclusion of covariates in the model revealed only a significant effect ($p < .05$) of sex on the intercept (.25) and the slope (.25), indicating (1) higher scores for females at Wave 1, and (2) a tendency for females to increase more over time.

Agreeableness. Agreeableness changed according to a proportional change model (Table 2). Thus, there were no systematic constant changes occurring across the three Waves. Instead, agreeableness decreased slightly (-0.10, $SE = 0.035$, $p = .007$) from W1 to W2, but then did not change significantly from W2 to W3 (-0.06, $SE = 0.043$, $p = .158$). The significant negative cross-lagged parameter (-0.25, $SE = 0.035$, $p < .001$) suggested a dependency of subsequent change on previous change. Accordingly, individuals scoring higher on agreeableness at a previous time point tended to show less change. The intercept mean

(0.04, $SE = .045$) was non-significant ($p = .342$), but had significant variance ($0.60, SE = 0.055, p < .001$). The only significant covariate was sex ($.24, SE = .09, p < .01$) on the intercept, with women scoring higher in agreeableness than men at W1.

Conscientiousness. Changes in conscientiousness were best described by a proportional change model (Table 2). Accordingly, there is no systematic constant change occurring across the three Waves. However, levels of conscientiousness decreased slightly ($-0.08, SE = 0.028, p = .003$) from Wave 1 to Wave 2, but did not change significantly ($p = .132$) from Wave 2 to Wave 3 ($-0.05, SE = 0.030$). Importantly, subsequent changes were dependent on previous change, as attested by a significant ($p < .001$) and negative cross-lagged parameter ($-0.18, SE = 0.035$). Accordingly, individuals scoring higher on conscientious at a previous time point tended to show less change. Again, the intercept mean ($-0.01, SE = 0.041$) was not significantly ($p = .858$) different from zero, but showed significant variance ($0.33, SE = 0.044, p < .001$). There was no significant effect of covariates on the intercept, the slope or any of the difference change score.

Neuroticism. Neuroticism changed according to a dual change model (Table 2). The intercept mean ($0.06, SE = .043$) was not significant ($p = .144$), but its variance ($0.36, SE = 0.040, p < .001$) was significant. There was a significant increase ($0.17, SE = 0.038, p < .001$) in neuroticism over the three academic years, with significant slope variance ($0.15; SE = 0.076, p < .05$). Given that intercept and slope were positively correlated ($0.14, SE = 0.050, p = .004$), individuals reporting higher

neuroticism at Wave 1 increased faster. Finally, the cross-lagged parameter was negative (-0.77 , $SE = 0.149$, $p < .001$), suggesting a progressive slowing of decreasing across time. Sex ($.15$, $SE = .07$) and age ($.05$, $SE = .02$) were both significantly associated with the intercept, such that women and older participants reported higher neuroticism at Wave1.

Summary. Our hypotheses regarding changes in personality traits across the police officer training were generally supported. Trend in personality trait changes showed a good fit with our hypotheses. Indeed, changes on openness and neuroticism showed to best fit to a dual change model (that includes a constant change factor), whereas changes in extraversion, agreeableness, and conscientiousness were best represented by a proportional change with constant rate model (that includes only wave-specific change factors). Furthermore (and as hypothesized), the latter also showed significant variance of both wave-specific change factors. Our hypotheses on the direction of change were supported for openness and neuroticism: Indeed, both showed a significant and positive change throughout the three-year training. Our hypotheses regarding the non-significant change occurring between W2 and W3 for extraversion, agreeableness, and conscientiousness were supported, as showed by the non-significant size of the latent mean for the second latent change factor. However, our hypotheses regarding the positive and significant change between W1 and W2 for extraversion, agreeableness, and conscientiousness were not supported: Indeed, extraversion showed a non-significant mean-level change, whereas

agreeableness and conscientiousness showed a significant but negative change.

Multivariate Latent Difference Score Models

All multivariate LDS models for the different personality traits were based on the best fitting univariate model. As shown in Table 3, all models had an acceptable fit to the data. The bottom part of Table 3 shows parameters of interest for each model.

Longitudinal effects of latent trait change on organizational socialization and identification. For all traits, the change occurring between W1 and W2 (Δ_1P) significantly predicted organizational socialization and organizational identification at W2, over and above the respective trait level at W1 (see Table 3, parameters $\Delta_1P \rightarrow OS_{W2}$ and $\Delta_1P \rightarrow OI_{W2}$). Importantly, these paths also held from W2 and W3 for all traits, where Δ_2P predicted organizational socialization and organizational identification at W3 over and above their autoregressive effect, the personality trait level at W2, and the cross-lagged effects between organizational socialization and organizational identification (see Table 3, parameters $\Delta_2P \rightarrow OS_{W3}$ and $\Delta_2P \rightarrow OI_{W3}$). More specifically (see Table 3), the effect of Δ_2P on organizational socialization at W3 was weak but significant for openness and moderately strong for agreeableness, conscientiousness, extraversion, and neuroticism; the effect of Δ_2P on organizational identification at W3 was weak but significant for openness, and moderately strong for neuroticism, agreeableness, extraversion, and conscientiousness.

Longitudinal effects of organizational socialization and identification on latent trait change. As shown at the bottom of Table 3 (parameter $Ol_{W2} \rightarrow \Delta_2P$) organizational identification did not predict any latent trait change from W2 to W3. Instead, we found that organizational socialization significantly predicted the Δ_2P of agreeableness, conscientiousness, and openness (see Table 3, parameter $OS_{W2} \rightarrow \Delta_2P$). This means that the higher the achieved level of perceived organizational socialization, the more likely positive changes occurred in agreeableness, conscientiousness, and openness as the end of academy approached.

Mediation analyses. We tested our hypothesized longitudinal mediation pathways ($\Delta_1P \rightarrow OS_{W2} \rightarrow Ol_{W3}$) for all traits except agreeableness and conscientiousness, because the $OS_{W2} \rightarrow Ol_{W3}$ was not significant for these Big Five domains. We found a significant mediation effect in all models (extraversion: 0.247, 95% CI [0.038, 0.494]; openness: 0.072, 95% CI [0.014, 0.150]; neuroticism: -0.354, 95 %CI [-0.611, -0.119]), indicating that organizational socialization significantly mediated the longitudinal relationship between personality trait change and organizational identification.

Covariates. None of the covariates had a significant effect in the conscientiousness model. In the neuroticism and extraversion models, the only significant effect was that exerted by age on organizational identification at W2 ($-.11$, $p < .01$, for both models). Regarding openness, gender significantly affected both intercept and slope ($.18$, $p < .001$, and $.30$, $p < .001$, respectively), indicating that females were higher than males at W1 and increased more than males across time. Finally, in the

agreeableness model, organizational identification at W2 was negatively affected by age ($-.14, p < .01$) and positively affected by years of previous military experience ($.13, p < .05$), whereas gender positively affected agreeableness intercept ($.16, p < .01$; thus, females' level of agreeableness at W1 were higher than males' levels).

Discussion

Understanding the environmental mechanisms that shape the development of personality is an important and fascinating area of research (e.g., Costa, McCrae, & Löckenhoff, 2019). In this context, one striking finding is that environments derive their power from the investments that individuals themselves make in those environments. There is no doubt that individuals spend most of their adult life in the work environment, and the centrality of this environment for individuals' self-development and well-being is currently well understood (Le et al., 2014). Following these lines of reasoning, in the present study we explored the links between youths' enrollment in a police officer academy and changes over time in their personality traits. Compared to other civilian occupations, police academies present some important peculiarities that led us to expect that they may exert a strong influence on youths' personality development. Overall, our results confirmed this expectation, as evidenced by significant mean-level change in personality traits and a significant degree of rank-order variability. Importantly, we were also able to connect those changes to the unfolding processes of socialization and identification that are considered foundational for the acquisition of police status at the end of the academy (Caforio, 2018).

Personality Trait Change

As hypothesized, openness to experience and neuroticism were the personality traits showing change across the entire three-year training period. Before discussing these changes, it is important to keep in mind that most were relatively small in magnitude (i.e., $< .20$ per year) according to Cohen (1992) or “medium” at best according to Funder and Ozer (2019). Interestingly, changes in openness were positive. Whereas this finding is apparently counter-intuitive, given the stereotype of military academies as making people less creative, original, and exploratory, and more conventional and conforming, it seems understandable given the nature of the present context. After entering in the police academy, youths are required to learn academic subjects, develop new abilities, and understand the formal and informal rules of a new and unexplored environment. Moreover, it is important to consider that for most youths this is likely one of their first experiences outside of the family. Of course, this result should be replicated and can be specific to the context.

Neuroticism also tended to increase over time, with police cadets reporting increasingly feeling of anxiety, depressed mood, and lack of self-control. These results align with previous findings reporting higher levels of neuroticism in military compared to civilian populations (Jackson et al., 2012). In part, it is likely that this increase in neuroticism is determined by exposure to the harsh and strict discipline characteristic of police training, where youths go through openly oppressive phases (such as the “plebs” phase, see Caforio, 2018) aimed at helping them transition from civilian to military life.

With regard to agreeableness, conscientiousness, and extraversion, we did not find any systematic trends across the entire training period. However, whereas extraversion remained stable across all three waves, conscientiousness and agreeableness showed a tendency to decrease slightly from W1 to W2. Importantly, variances associated with these changes (as well as changes occurring from W2 to W3) were large and significant, suggesting that the impact of police training on trait change in agreeableness and conscientiousness varies substantially from youth to youth. These observed changes should be understood in light of the nature of the sample we studied. This idea is corroborated for agreeableness by a previous study by Jackson et al. (2012) who reported lower levels of agreeableness in people who enter the military compared with people choosing civilian occupations. With regard to conscientiousness, we speculated that the small decrease was probably due to the impact of the pressure exerted on cadets by the police academy environment to reinforce their adherence to rules and obligations. As explained before, this pressure is particularly strong during the first academic year. It is likely that the difficulty in comply with these strict role demands may lead youths to somewhat revising their own evaluations of conscientiousness. However, the observed changes were small and mostly limited to the first academic year.

Importantly, our results (with the exception of extraversion) generally deviated from the normative age-related changes observed during young adulthood, when conscientiousness and agreeableness tend to increase, neuroticism tends to decrease, and openness to experience

tends to remain stable, even if some authors suggested that it may increase during emerging adulthood (see Bleidorn & Hopwood, 2019). However, the participants in the present study were in an unusual environmental context, where they were exposed to unique and highly potent situational forces, and therefore it is not surprising that they showed personality changes that differed from normative trends observed in large samples of participants experiencing a wide range of environmental contexts (Caforio, 2018).

Associations between Personality Trait Level (at Wave1), Personality Trait Change, and Organizational Socialization and Identification

As expected, the higher the individuals' scores on the positive big five pole at Wave 1, the higher the socialization and identification level reached at the beginning of the second academic year (Wave 2). This result is not surprising, and in fact it reflects the relevance of personality traits in fostering the acquisition of the new role and the adaptation to the academy context. More in general, these data further attest the value of personality assessment for selecting individuals (Bauer & Erdogan, 2014; Holland, 1976).

One of the most important results from our study is that personality change predicted subsequent increases in both organizational socialization and organizational identification, even after taking into account the effect of their autoregressive paths, previous trait level, cross-lagged effects (i.e., reciprocal effects of organizational socialization and identification), and covariates. These longitudinal associations were found

for all traits. Specifically, increases in positive traits (i.e., conscientiousness, agreeableness, openness, and extraversion) and decreases in neuroticism were associated with subsequent increases in organizational socialization and identification, which are considered two important indices of adjustment for individuals entering a new organizational context (Bauer & Erdogan, 2014). Thus, our results demonstrate not only that significant changes can occur for all Big Five traits over a relatively short time interval, but also that these changes can have functional value.

Some of our other hypotheses received mixed support. For example, the idea that organizational socialization would act as a mediator of the longitudinal relation between personality trait change and organizational identification was supported for extraversion, openness, and neuroticism, but not for agreeableness and conscientiousness. This means that at least part of the organizational identification process is indirectly promoted by changes in extraversion, openness, and neuroticism, through youths' socialization with their work role.

Practical Implications

Our results have important practical implications for police officers training. First of all, our study attest that the higher impact of the training on personality traits occurs between the first and the second years. Second, the resulting effects of the training is mostly in contrast with what one would expect. In this regard, the increasing pattern observed for neuroticism is of particular concern. Clearly, these changes were small, suggesting that they may be displayed only by a small proportions of

cadets. However, given the potential implications of these results for the future work adjustment of prospective non-commissioned police officers, it seems important that they are properly addressed by those in charge of their training. Indeed, many of those changes seem to occur to facilitate role socialization and internalization, and often are a consequence of these processes.

We believe that a training more centered around improving the self-regulatory abilities of cadets, and to offer them clear explanations about the motivations sustaining the (apparently) harsh military rules, that may seem incomprehensible and unbearable, at first, to a newcomer may be of great help. We are not underestimating nor we want undermine the value of military discipline, but it is our opinion that their training may be integrated to offer more space to the development in the cadets of the necessary psychological resources and structures to cope with them. For example, military training may be centered more around the development of cadets self-regulatory beliefs (such as emotional regulatory self-efficacy beliefs, see Alessandri et al., 2018) that may sustain the development of their self-concept and prevent the health risks ingenerated by work related stress.

Limitations

The methodological strengths of this study include the use of a complete and large cohort of police cadets and the availability of three waves of data collected over a three-year time interval. Moreover, the cadets were followed from when they first entered the “new” situation until the completion of their training. In this regard, we acknowledge that

in other cultures (such as U.K.) police cadets constitute a heterogeneous group that often varies substantially in age, with many cadets joining the force at later points in life. In Italy, entering in the police academy is restricted to youths younger than 26 years (although people enrolled in other armed corps may be admitted later, as well as people enrolled in technical roles, such as psychologists, medical doctors etc.). This may thus limit the applicability of our findings to other contexts where cadets may not be as young.

One limitation of the research is that, because of specific constraints introduced by the organization (i.e., they permitted only one assessment at year), we did not have more waves of data, which would have allowed for a more precise estimate of non-linear change trajectories and improved parameter estimation (Clark et al., 2018). Another limitation is our exclusive reliance on self-report data. As a result, the observed associations might have been inflated by shared method variance. Thus, future research should attempt to replicate our findings using other sources of data (e.g., peer and/or supervisor reports, objective measures of performance in the police academy, etc.).

Conclusion

In conclusion, the present study has the potential to contribute to the literature on personality trait change in organizational settings. In particular, we believe that our focus on the interplay between personality change and organizational socialization and identification processes offers insight into the complex work-related dynamic that lead young adults to change according to a particular job. Indeed, we provided robust evidence

regarding two important characteristics of traits in the workplace: (a) personality traits may change even across a relatively short, but demanding and highly structured, life experience and (b) personality trait change may have a functional consequence, promoting workplace adjustment. We hope that our findings will stimulate future research on these issues.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Preparation of this manuscript was supported by Grant RM11715C809391B1 and RG11816433CBD8D3 from Sapienza, University of Rome to Guido Alessandri. Enrico Perinelli was supported by a research fellowship (Research title: “WeBeWo LAB: Quality of Social Relationships in Workplace”, Number: 40103205) granted by the Autonomous Province of Trento and the Department of Psychology and Cognitive Science (University of Trento).

References

- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York, NY: Oxford University Press.
- Asendorpf, J. B. (1992). Beyond stability: Predicting inter-individual differences in intra-individual change. *European Journal of Personality, 6*, 103-117. doi: 10.1002/per.2410060204
- Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*, 20-39. doi: 10.2307/258189
- Ashforth, B. K., & Saks, A. M. (1996). Socialization tactics: Longitudinal effects on newcomer adjustment. *Academy of Management Journal, 39*, 149-178. doi: 10.2307/256634
- Bauer, T. N., & Erdogan, B. (2014). Delineating and reviewing the role of newcomer capital in organizational socialization. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 439-457. doi: 10.1146/annurev-orgpsych-031413-091251
- Bauer, T. N., Bodner, T., Erdogan, B., Truxillo, D. M., & Tucker, J. S. (2007). Newcomer adjustment during organizational socialization: A meta-analytic review of antecedents, outcomes, and methods. *Journal of Applied Psychology, 92*, 707-721. doi: 10.1037/0021-9010.92.3.707
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 2-62). New York, NY: Academic Press.
- Bleidorn, W. (2015). What accounts for personality maturation in early adulthood? *Current Directions in Psychological Science, 24*, 245-252. doi: 10.1177/0963721414568662
- Bleidorn, W., & Denissen, J. J. A. (in press). Personality and life transitions in early adulthood. In O. P. John & R. W. Robins (Eds.), *Handbook of personality: Theory and research* (4th ed.). New York, NY: The Guilford Press.
- Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (2018). Life events and personality trait change. *Journal of Personality, 86*, 83-96. doi: 10.1111/jopy.12286.

- Bleidorn, W., Kandler, C., & Caspi, A. (2014). The behavioural genetics of personality development in adulthood—Classic, contemporary, and future trends. *European Journal of Personality, 28*, 244-255. doi: /10.1002/per.1957
- Block, J. (1982). Assimilation, accommodation, and the dynamics of personality development. *Child Development, 53*, 281-295. doi: 10.2307/1128971
- Burnham, K. P., & Anderson, D. R. (2004). Multimodel inference: Understanding AIC and BIC in model selection. *Sociological Methods & Research, 33*, 261-304. doi: 10.1177/0049124104268644
- Caforio, G. (2018). Military officer education. In G. Caforio & M. Nuciari (Eds.), *Handbook of the sociology of the military* (2nd ed., pp. 273-300). Cham, Switzerland: Springer International.
- Caprara, G. V., Barbaranelli, C., Borgogni, & Perugini, M. (1993). The “Big Five Questionnaire”: a new questionnaire to assess the Five Factor Model. *Personality and Individual Differences, 15*, 281-288. doi: 10.1016/0191-8869(93)90218-R
- Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology, 56*, 453-484. doi: 10.1146/annurev.psych.55.090902.141913
- Chao, G. T. (2012). Organizational socialization: Background, basics, and a blueprint for adjustment at work. In S. W. J. Kozlowski (Ed.), *Oxford library of psychology. The Oxford handbook of organizational psychology* (Vol. 1, pp. 579-614). New York, NY: Oxford University Press.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 233-255. doi: 10.1207/S15328007SEM0902_5
- Clark, D. A., Nuttall, A. K., & Bowles, R. P. (2018). Misspecification in latent change score models: Consequences for parameter estimation, model evaluation, and predicting change. *Multivariate Behavioral Research, 53*, 172-189. doi: 10.1080/00273171.2017.1409612

- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159. doi: 10.1037/0033-2909.112.1.155
- Cortina, J. M., Doherty, M. L., Schmitt, N., Kaufman, G., & Smith, R. (1992). The "Big Five" personality factors in the IPI and MMPI: Predictors of police performance. *Personnel Psychology*, *45*, 119-140. doi: 10.1111/j.1744-6570.1992.tb00847
- Costa, Jr., P. T., McCrae, R. R., & Löckenhoff, C. E. (2019). Personality across the life span *Annual Review of Psychology*, *70*, 423-448. doi: 10.1146/annurev-psych-010418-10324
- den Boer, L., Klimstra, T. A., Branje, S. J. T., Meeus, W. H. J., Denissen, J. J. A. (2019). Personality maturation during the transition to working life: Associations with commitment as a possible indicator of social investment. *European Journal of Personality*, *33*, 456-467. doi: 10.1002/per.2218
- Bleidorn, W. & Hopwood, C. J. (2019). Stability and Change in Personality Traits Over the Lifespan. In D. P. McAdams, R. L. Shiner, & J. L. Tackett (Eds.), *Handbook of personality development* (pp. 237-257). New York, NY: Guilford Press.
- Detrick, P., & Chibnall, J. T. (2006). NEO PI-R personality characteristics of high-performing entry-level police officers. *Psychological Services*, *3*(4), 274-285. doi: 10.1037/1541-1559.3.4.274
- Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administrative Science Quarterly*, *39*, 239-263. doi: 10.2307/2393235
- Ellis, A., Bauer, T. N., & Erdogan, B. (2015). New-employee organizational socialization: Adjusting to new roles, colleagues, and organizations. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (2nd ed., pp. 301-322). New York, NY: The Guilford Press.
- Enders, C. K. (2010). *Applied missing data analysis*. New York, NY: Guilford Press.

- Fang, R., Duffy, M. K., & Shaw, J. D. (2011). The organizational socialization process: Review and development of a social capital model. *Journal of Management*, *37*, 127-152. doi: 10.1037/0033-2909.112.1.155
- Funder, D. C., & Ozer, D. J. (2019). Evaluating effect size in psychological research: Sense and nonsense. *Advances in Methods and Practices in Psychological Science*, *2*(2), 156-168. doi: 10.1177/2515245919847202
- Garbarino, S., Chiorri, C., & Magnavita, N. (2014). Personality traits of the Five-Factor Model are associated with work-related stress in special force police officers. *International Archives of Occupational and Environmental Health*, *87*(3), 295-306. doi: 10.1007/s00420-013-0861-1
- Garbarino, S., Cuomo, G., Chiorri, C., & Magnavita, N. (2013). Association of work-related stress with mental health problems in a special police force unit. *BMJ Open*, *3*(7). doi: e002791.
- Golle, J., Rose, N., Göllner, R., Spengler, M., Stoll, G., Hübner, N., ... Nagengast, B. (2019). School or work? The choice may change your personality. *Psychological Science*, *30*, 32-42. doi: 10.1177/0956797618806298
- Grant, S., & Langan-Fox, J. (2006). Occupational stress, coping and strain: The combined/interactive effect of the Big Five traits. *Personality and Individual Differences*, *41*, 719-732. doi: 10.1016/j.paid.2006.03.008
- Grimm, K. J., Ram, N., & Estabrook, R. (2017). *Growth Modeling: Structural equation and multilevel modeling approaches*. New York, NY: The Guilford Press.
- Hall, L. K. (2011). The importance of understanding military culture. *Social Work in Health Care*, *50*, 4-18. doi: 10.1080/00981389.2010.513914.
- Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation

- analysis: does method really matter? *Psychological Science*, *24*, 1918-1927. doi: 10.1177/0956797613480187.
- Helson, R., Roberts, B., & Agronick, G. (1995). Enduringness and change in creative personality and the prediction of occupational creativity. *Journal of Personality and Social Psychology*, *69*, 1173-1183. doi:10.1037/0022-3514.69.6.1173
- Hoekstra, H. A. (2011). A career roles model of career development. *Journal of Vocational Behavior*, *78*, 159-173. doi: 10.1016/j.jvb.2010.09.016
- Holland, J. L. (1973). *Making vocational choices: A theory of careers*. Englewood Cliffs, NJ: Prentice Hall.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Holland, J. L. (1976). Vocational preferences. In M. D. Dunnette (Ed.), *Handbook of Industrial Organizational Psychology* (pp. 521-570). Chicago, IL: Rand McNally.
- Hopwood, C. J., Donnellan, M. B., Blonigen, D. M., Krueger, R. F., McGue, M., Iacono, W. G., & Burt, S. A. (2011). Genetic and environmental influences on personality trait stability and growth during the transition to adulthood: A three-wave longitudinal study. *Journal of Personality and Social Psychology*, *100*, 545-556. doi: 10.1037/a0022409.
- Hudson, N. W., & Roberts, B. W. (2014). Goals to change personality traits: Concurrent links between personality traits, daily behavior, and goals to change oneself. *Journal of Research in Personality*, *53*, 68-83. doi: 10.1016/j.jrp.2014.08.008
- Hudson, N. W., Roberts, B. W., & Lodi-Smith, J. (2012). Personality trait development and social investment in work. *Journal of Research in Personality*, *46*, 334-344. doi: 10.1016/j.jrp.2012.03.002.
- Jackson, J. J., Thoemmes, F., Jonkmann, K., Lüdtke, O., & Trautwein, U. (2012). Military training and personality trait development: Does the military make the man, or does the man make the military?

- Psychological Science*, 23, 270–277. doi:
10.1177/0956797611423545.
- Kandler, C., Bleidorn, W., Riemann, R., Angleitner, A., & Spinath, F. M. (2011). The genetic links between the big five personality traits and general interest domains. *Personality and Social Psychology Bulletin*, 37, 1633-1643. doi: 10.1177/0146167211414275.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: The Guilford Press.
- Larson, L. M., Rottinghaus, P. J., & Borgen, F. H. (2002). Meta-analyses of Big Six interests and Big Five personality factors. *Journal of Vocational Behavior*, 61, 217-239. doi: 10.1006/jvbe.2001.1854
- Le, K., Donnellan, M. B., & Conger, R. (2014). Personality Development at Work: Workplace Conditions, Personality Changes, and the Corresponding Principle. *Journal of Personality*, 82, 44–56. doi: 10.1111/jopy.12032
- Le, K., Donnellan, M. B., Spilman, S. K., Garcia, O. P., & Conger, R. (2014). Workers behaving badly: Associations between adolescent reports of the Big Five and counterproductive work behaviors in adulthood. *Personality and Individual Differences*, 61, 7-12. doi: 10.1016/j.paid.2013.12.016
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling: A Multidisciplinary Journal*, 9, 151-173. doi: 10.1207/S15328007SEM0902_1
- Little, T. D., Rhemtulla, M., Gibson, K., & Schoemann, A. M. (2013). Why the items versus parcels controversy needn't be one. *Psychological Methods*, 18, 285-300. doi: 10.1037/a0033266.
- Livi, S., Theodorou, A., Rullo, M., Cinque, L., & Alessandri, G. (2018). The rocky road to prosocial behavior at work. *PloS ONE*, 13, 1-14. doi: 10.1371/journal.pone.0193508
- Lucas, R. E., & Donnellan, M. B. (2011). Personality development across the life span: Longitudinal analyses with a national sample from

- Germany. *Journal of Personality and Social Psychology*, 101, 847-861. doi: 10.1037/a0024298.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence Limits for the Indirect Effect: Distribution of the Product and Resampling Methods. *Multivariate Behavioral Research*, 39, 99-128. doi:10.1207/s15327906mbr3901_4.
- Mael, F. A., & Ashforth, B. E. (1995). Loyal from day one: Biodata, organizational identification, and turnover among newcomers. *Personnel Psychology*, 48, 309-333. doi: 10.1111/j.1744-6570.1995.tb01759.x
- Mael, F., & Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior*, 13, 103-123. doi: 10.1002/job.4030130202
- McArdle, J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology*, 60, 577-605. doi: 10.1146/annurev.psych.60.110707.1636
- McArdle, J. J., & Nesselroade, J. R. (2014). *Longitudinal data analysis using structural equation models*. Washington, DC: American Psychological Association.
- McCrae, R. R., & Costa, P. T. (2008). Empirical and theoretical status of the five-factor model of personality traits. In G. Boyle, G. Matthews, & D. H. Saklofske (Eds.), *The SAGE handbook of personality: Theory and assessment* (pp. 273-294). Thousand Oaks, CA: Sage.
- Muthén, L. K., & Muthén, B. O. (1998-2018). *Mplus User's Guide. Eighth Edition*. Los Angeles, CA: Muthén & Muthén.
- Preacher, K. J., & Selig, J. P. (2012). Advantages of Monte Carlo confidence intervals for indirect effects. *Communication Methods and Measures*, 6, 77-98. doi: 10.1080/19312458.2012.679848
- Roberts, B. W., & Caspi, A. (2003) The Cumulative Continuity Model of personality development: Striking a balance between continuity and change in personality traits across the life course. In U. M.

- Staudinger & U. Lindenberger (Eds.), *Understanding human development* (pp. 183-214). Boston, MA: Springer.
- Roberts, B. W., & Chapman, C. N. (2000). Change in dispositional well-being and its relation to role quality: A 30-year longitudinal study. *Journal of Research in Personality, 34*, 26-41. doi:10.1006/jrpe.1999.2259
- Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: a quantitative review of longitudinal studies. *Psychological Bulletin, 126*, 3-25. doi: 10.1037/0033-2909.126.1.3
- Roberts, B. W., & Jackson, J. J. (2008). Sociogenomic personality psychology. *Journal of Personality, 76*, 1523-1544. doi: 10.1111/j.1467-6494.2008.00530.x
- Roberts, B. W., & Nickel, L. B. (in press). Personality development across the life course: A Neo-socioanalytic perspective. In O. P. John & R. W. Robins (Eds.), *Handbook of personality: Theory and research* (4th ed.). New York, NY: The Guilford Press.
- Roberts, B. W., & Wood, D. (2006). Personality development in the context of the Neo-Socioanalytic Model of personality. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 11-39). Mahwah, NJ: Lawrence Erlbaum A. Publishers.
- Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin, 132*, 1-25. doi:10.1037/0033-2909.132.1.1
- Roberts, B. W., Walton, K., Bogg, T., & Caspi, A. (2006). De-investment in work and non-normative personality trait change in young adulthood. *European Journal of Personality, 20*, 461-474. doi: /10.1002/per.607
- Schneider, B. (1987). The people make the place. *Personnel Psychology, 40*, 437-453. doi: 10.1111/j.1744-6570.1987.tb00609.x
- Scollon, C. N., & Diener, E. (2006). Love, work, and changes in extraversion and neuroticism over time. *Journal of Personality and*

- Social Psychology*, 91, 1152-1165. doi: /10.1037/0022-3514.91.6.1152
- Segal, M. W. (1986). The military and the family as greedy institutions. *Armed Forces & Society*, 13, 9-38. doi: 10.1177/0095327X8601300101
- Selig, J. P., & Preacher, K. J. (2008, June). *Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects* [Computer software]. Available from <http://quantpsy.org/>
- Simons, D. J., Shoda, Y., & Lindsay, D. S. (2017). Constraints on Generality (COG): A proposed addition to all empirical papers. *Perspectives on Psychological Science*, 12, 1123-1128. doi: 10.1177/1745691617708630
- Soeters, J. (2018). Organizational cultures in the military. In G. Caforio & M. Nuciari (Eds.), *Handbook of the sociology of the military* (2nd ed., pp. 251-272). Cham, Switzerland: Springer International.
- Specht, J. (2018). *Personality development across the lifespan*. San Diego, CA: Elsevier.
- Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the Big Five. *Journal of Personality and Social Psychology*, 101, 862-882. doi: 10.1037/a0024950.
- Tajfel, H. & Turner, J. C. (1986) The Social Identity Theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of Intergroup Relation* (pp. 7-24). Chicago, IL: Hall Publications.
- Van Aken, M. A., Denissen, J. J., Branje, S. J., Dubas, J. S., & Goossens, L. (2006). Midlife concerns and short-term personality change in middle adulthood. *European Journal of Personality*, 20, 497-513. doi: 10.1002/per.603
- van Dick, R., Christ, O., Stellmacher, J., Wagner, U., Ahlswede, O., Grubba, C., ... Tissington, P. A. (2004). Should I stay or should I go? Explaining turnover intentions with organizational identification and

job satisfaction. *British Journal of Management*, 15, 351-360. doi: 10.1111/j.1467-8551.2004.00424.x

Wiggins, J. S., & Broughton, R. (1985). The interpersonal circle: A structural model for the integration of personality research. In R. Hogan & W. H. Jones (Eds.), *Perspectives in personality* (Vol. 1., pp. 1-47). Greenwich, CT: JAI Press.

Wille, B., Beyers, W., & De Fruyt, F. (2012). A transactional approach to person-environment fit: Reciprocal relations between personality development and career role growth across young to middle adulthood. *Journal of Vocational Behavior*, 81, 307-321. doi: 10.1016/j.jvb.2012.06

Wrzus, C., & Roberts, B. W. (2017). Processes of personality development in adulthood: The TESSERA framework. *Personality and Social Psychology Review*, 21, 253-277. doi: 10.1177/108886831665227

Table 1

Measurement Invariance Analyses

Variable	Invariance	$\chi^2(df)$	p	CFI	TLI	RMSEA	$\Delta\chi^2$	Δdf	p	ΔCFI
Extraversion	configural	62.129(39)	.011	.989	.982	.038				
	metric	72.654(45)	.006	.987	.982	.038	10.525	6	.104	.002
	scalar	100.365(51)	<.001	.977	.971	.048	27.711	6	<.001	.010
Openness	configural	131.415(39)	<.001	.972	.953	.075				
	metric	149.297(45)	<.001	.969	.954	.075	17.882	6	.007	.003
	scalar	161.861(51)	<.001	.967	.957	.072	12.564	6	.051	.002
Agreeableness	configural	67.455(39)	.003	.989	.982	.042				
	metric	76.646(45)	.002	.988	.983	.041	9.191	6	.163	.001
	scalar	100.911(51)	<.001	.982	.976	.049	24.265	6	<.001	.006
Conscientiousness	configural	113.085(39)	<.001	.960	.933	.068				
	metric	127.170(45)	<.001	.956	.935	.066	14.085	6	.029	.004
	scalar	194.107(51)	<.001	.923	.901	.082	66.937	6	<.001	.033
	partial scalar	147.111(50)	<.001	.948	.931	.068	19.941	5	.001	.008
Neuroticism	configural	88.629(39)	<.001	.986	.976	.055				
	metric	95.690(45)	<.001	.986	.979	.052	7.061	6	.315	.000
	scalar	110.953(51)	<.001	.983	.978	.053	15.263	6	.018	.003
Org Socialization	configural	12.761(5)	.026	.995	.986	.062				
	metric	16.791(7)	.019	.994	.987	.059	4.030	2	.133	.001
Org Identification	configural	4.600(5)	.467	1.00	1.001	.000				

metric	4.858(7)	.677	1.00	1.003	.000	.258	2	.879	.000
---------------	-----------------	-------------	-------------	--------------	-------------	-------------	----------	-------------	-------------

Note. Org = Organizational; χ^2 = Chi-square statistic; *df* = degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; $\Delta\chi^2$ = Chi-square difference; Δdf = difference in degrees of freedom; ΔCFI = difference in CFI.
Best models are in bold.

Table 2

Univariate Latent Difference Score Models: Indices of Fit for Extraversion (E), Openness (O), Agreeableness (A), Conscientiousness (C), and Neuroticism (N)

Trait	Model	χ^2	df	CFI	TLI	RMSEA	AIC	Δ AIC
E	1. No-change	148.03	54	.957	.948	.065	7772.95	40.28
	2. Proportional change (PC)	105.09	52	.976	.969	.050	7734.01	1.34
	3. PC constant rate	105.75	53	.976	.970	.049	7732.67	0
	4. Linear change			<i>Not identified</i>				
	5. Dual Change			<i>Not identified</i>				
O	1. No-change	265.15	54	.936	.922	.097	7766.67	98.19
	2. Proportional change (PC)	182.63	52	.961	.950	.078	7688.15	19.67
	3 PC constant rate	182.76	53	.961	.951	.077	7686.28	17.8
	4. Linear change			<i>Not identified</i>				
	5. Dual Change	162.96	52	.967	.958	.072	7668.48	0
A	1. No-change	156.23	54	.962	.954	.067	5557.51	51.29
	2. Proportional change (PC)	103.18	52	.981	.976	.049	5508.46	2.237
	3 PC constant rate	103.23	53	.981	.977	.048	5506.51	.29
	4. Linear change			<i>Not identified</i>				
	5. Dual Change	100.94	52	.982	.977	.048	5506.22	0
C	1. No-change	175.76	53	.934	.918	.075	7970.55	24.89
	2. Proportional change (PC)	148.84	51	.948	.932	.068	7947.62	1.96
	3 PC constant rate	148.88	52	.948	.934	.067	7945.66	0
	4. Linear change			<i>Not identified</i>				
	5. Dual Change	147.14	51	0.948	0.933	0.067	7945.92	0.26
N	1. No-change	208.85	54	.956	.946	.083	5355.80	93.81
	2. Proportional	116.06	52	.982	.977	.054	5267.0	5.02

change (PC)							1	
3 PC constant rate	116.47	53	.982	.978	.054	5265.4	2	3.43
4. Linear change			<i>Not identified</i>					
5. Dual Change	111.04	5	.983	.979	.052	5261.99		0

Note. χ^2 = Chi-square statistic; *df* = degrees of freedom; CFI =

Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean

Square Error of Approximation; AIC = Akaike's Information Criterion; Δ AIC

= difference in AIC (the best model is marked by 0).

Table 3

Goodness Fit Indices from Multivariate Models and Estimated Parameters

Fit Indices from Multivariate Models							
Model	NF P	χ^2	df	p	CFI	TLI	RMSEA
E	90	422.98	258	< .001	.971	.966	.039
O	92	664.69	256	< .001	.940	.929	.062
A	92	585.65	304	< .001	.956	.950	.047
C	90	568.11	234	< .001	.939	.928	.059
N	91	537.08	257	< .001	.961	.954	.051
Estimated Parameters from Multivariate Models							
Path			E	O	A	C	N
Δ_1P	→	Ol _{W2}	.57**	.18**	.47**	.67**	-.30**
P_{W1}	→	"	.46**	.25**	.64**	.64**	-.38**
Δ_1P	→	OS _{W2}	.56**	.16*	.62**	.69**	-.61**
P_{W1}	→	"	.54**	.15**	.72**	.53**	-.62**
Ol _{W2}	→	Ol _{W3}	.56**	.59**	.57**	.58**	.60**
OS _{W2}	→	"	.15*	.22**	.04 ^{n.s.}	.11 ^{n.s.}	.22**
Δ_2P	→	"	.28**	.17**	.25**	.29**	-.24**
P_{W2}	→	"	.17**	.11*	.22**	.14 ⁺	-.04 ^{n.s.}
Ol _{W2}	→	OS _{W3}	.09 ^{n.s.}	.11*	.05 ^{n.s.}	.09 ^{n.s.}	.08 ^{n.s.}
OS _{W2}	→	"	.76**	.75**	.59**	.70**	.66**
Δ_2P	→	"	.33**	.15**	.28**	.28**	-.36**
P_{W2}	→	"	.04 ^{n.s.}	-.01 ^{n.s.}	.21**	.03 ^{n.s.}	-.23**
Ol _{W2}	→	Δ_2P	-.04 ^{n.s.}	-.03 ^{n.s.}	-.10 ^{n.s.}	-.16 ^{n.s.}	.02 ^{n.s.}
OS _{W2}	→	"	.02 ^{n.s.}	.12 ⁺	.23**	.19 ⁺	-.03 ^{n.s.}

Note. E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; N = Neuroticism; NFP = Number of Free Parameters; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation. Δ_1P and Δ_2P = latent change score W1-W2 and W2-W3, respectively; P_{Wn} = Personality trait level at Wave n ;

OI_{Wn} = Organizational Identification at Wave n ; OS_{Wn} = Organizational Socialization at Wave n . ^{n.s.} $p > .10$, ⁺ $p < .10$, ^{*} $p < .05$, ^{**} $p < .01$.

Parameters are reported in standardized form.