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Can Becoming a Leader Change Your Personality? An Investigation with Two Longitudinal Studies From a Role-Based Perspective

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Abstract

Organizational research has predominantly adopted the classic dispositional perspective to understand the importance of personality traits in shaping work outcomes. However, the burgeoning literature in personality psychology has documented that personality traits, although relatively stable, are able to develop throughout one's whole adulthood. A crucial force driving adult personality development is transition into novel work roles. In this article, we introduce a dynamic, role-based perspective on the adaptive nature of personality during the transition from the role of employee to that of leader (i.e., leadership emergence). We argue that during such role transitions, individuals will experience increases in job role demands, a crucial manifestation of role expectations, which in turn may foster growth in conscientiousness and emotional stability. We tested these hypotheses in two 3-wave longitudinal studies using a quasi-experimental design. We compared the personality development of 2 groups of individuals (1 group promoted from employees into leadership roles and the other remaining as employees over time), matched via the propensity score matching approach. The convergent results of latent growth curve modeling from the 2 studies support our hypotheses regarding the relationship between becoming a leader and subsequent small, but substantial increases in conscientiousness over time and the mediating role of job role demands. The relationship between becoming a leader and change of emotional stability was not significant. This research showcases the prominence of examining and cultivating personality development for organizational research and practice.

Keywords: personality change/development, leadership, job role demands, role transition

It's not who you are underneath; it's what you do that defines you. —

(Nolan, 2005, 1:11:09)

Personality traits, defined as relatively stable patterns of behaviors, thoughts, and feelings (Donnellan, Hill, & Roberts, 2015; Johnson, 1997), have been featured prominently in organizational research. Theory and research have demonstrated that personality traits are able to predict a wide spectrum of work behaviors and attitudes (e.g., Barrick & Mount, 1991; Berry, Ones, & Sackett, 2007; Chiaburu, Oh, Berry, Li, & Gardner, 2011; Colbert, Barrick, & Bradley, 2014; House, Shane, & Herold, 1996; Ilies, Scott, & Judge, 2006; Judge, Bono, Ilies, & Gerhardt, 2002; Oh & Berry, 2009; Ones, Dilchert, Viswesvaran, & Judge, 2007; Sackett, Lievens, Van Iddekinge, & Kuncel, 2017; Schneider, 1987; Staw, 2004; Tett & Burnett, 2003).

The majority of the organizational personality literature has assumed the position that personality traits cause work behaviors and attitudes, not vice versa (Tasselli, Kilduff, & Landis, 2018). An important reason lies perhaps in that this line of research has been dominated by the classic dispositional perspective on personality (McCrae & Costa Jr, 1999; McCrae et al., 2000). This perspective postulates that the direction of causality travels only from personality to life experiences, because personality traits are "endogenous dispositions that follow intrinsic paths of development essentially independent of environmental influences" (McCrae et al., 2000, p. 173).

However, recent research in personality psychology has documented that personality traits, although relatively stable, are able to develop in adulthood as one adopts new life roles (for reviews, see Bleidorn, Hopwood, & Lucas, 2018; Caspi, Roberts, & Shiner, 2005; Donnellan et al., 2015). Meta-analytic research has reported significant mean-level changes of personality traits in middle and old age, with a standardized mean difference, d, ranging from .06 to .41 (Roberts, Walton, & Viechtbauer, 2006). More recent meta-analyses found

substantial within-person variance in personality in ESM research (N. P. Podsakoff, Spoelma, Chawla, & Gabriel, 2019). The rapid development of this dynamic perspective has spawned a further reconceptualization of personality traits as density distributions of relevant states (Fleeson, 2001) and a recognition that both traits and states are needed for a more comprehensive understanding of personality traits (Fleeson, 2004; Jayawickreme, Zachry, & Fleeson, 2019). Nevertheless, organizational personality research has lagged behind. With the firm establishment of the importance of personality, the time seems ripe to revisit the possibility that personality traits, though relatively stable, may develop as people adapt to novel work roles (Tasselli et al., 2018).

In this research, we adopt a role-based perspective and investigate whether and how transitioning from an employee into a supervisory role,[1] that is, leadership emergence (Barling, Christie, & Hoption, 2010), may shape one's personality development. Assuming a leadership role in which one supervises subordinates is important and meaningful to both the employee and the organization. For an employee, taking up a leadership role represents a milestone in one's career development (Hill, 2007; Wang & Wanberg, 2017) and has been regarded as the first step in the leadership process (Bass & Bass, 2008). For organizations, promoting an employee to a leadership position is a crucial step in planning leadership succession (Kesner & Sebora, 1994).

When transitioning from employees to leadership roles, we expect individuals to increase their conscientiousness and emotional stability, two of the Big Five personality traits (Goldberg, 1990). Chiefly, as they shoulder broader responsibilities and play more important roles in organizations (Fleishman et al., 1991; Mintzberg, 1971; Yukl, 2012), novice leaders are expected to be more conscientious than when they were employees—more efficient, organized, vigilant, achievement-oriented, and dependable to subordinates. Fulfilling the expectations and responsibilities mandated by leadership roles also requires

leaders to deal effectively with uncertainties and changes. Therefore, leaders need to be able to remain calm, and handle negative emotions in responses to stress, which are characteristics of emotional stability. Over time, such behavioral changes may consolidate and habituate, leading to changes in personality traits (Caspi & Moffitt, 1993; Roberts, Wood, & Caspi, 2008).

We do not formulate directional hypotheses on changes of agreeableness, extraversion, and openness. Agreeableness has been shown to have a weak correlation with leadership emergence (Judge et al., 2002). Key subdimensions of extraversion—social dominance and social vitality—may exhibit distinctive patterns of change (Roberts et al., 2006). Although taking a supervisory position may increase social dominance through enhancing confidence and sense of power (Bandura, 1997; Keltner, Gruenfeld, & Anderson, 2003), it may not strengthen social vitality. In fact, being promoted into more powerful leadership roles may decrease social vitality because novel leaders, after assuming more power, may not think and feel from others' perspectives (Keltner et al., 2003). The extant literature points to conflicting predictions on change of openness as well. Assuming a leadership role may enhance openness because such a transition necessitates creatively dealing with novel work tasks (Shalley, Gilson, & Blum, 2000). Yet, new leaders may experience declines in openness because they need to adhere to rules and routines to maintain stability and consistency (Yukl, 2012). The conflicting mechanisms prevent us from formulating directional hypotheses on changes of the three personality traits.

We further examine a key underlying mechanism for the change of personality traits—increases in job demands after adopting the role of leaders. Job demands refer to the amount of various forms of responsibilities associated with meeting the expectations of a work role (Karasek, 1979). According to the theoretical work of personality development by Caspi and Moffitt (1993), the unique job demands embedded in leadership roles provide a strong reward

structure and social control mechanism for nascent leaders to behave adaptively. As such, the novice leaders may modify their behaviors, thoughts, and feelings to meet the new expectations. These changes may habituate and generalize over time. Personality changes may then ensue.

Using two national longitudinal studies with a quasi-experimental design, this research makes three contributions. First, it sheds light on what and how personality traits change over time after one assumes a supervisory role. Given the debate on whether personality traits are able to change in adulthood (e.g., Costa & McCrae, 2006), this investigation serves as a direct test of the predictions from the classic dispositional perspective and those based on the role-based theory of personality development by Caspi and Moffitt (1993). Our findings provide insight into which theory is more accurate in accounting for personality change or the lack thereof.

Second, this research unravels why personality traits develop after one transits from an employee into supervisory role through the mediating role of increases of job demands. The literature on personality development has been in its infancy in personality psychology, and thus muss less is known about the mechanisms of personality change (Roberts & Nickel, 2017). By examining the mediation through changes of job role demands, our research paves the way for future research to examine personality change as the "one of the most vital outcomes of organizational experience" (Tasselli et al., 2018, p. 483).

Third, by examining whether becoming a leader is related to personality development over time, this research offers an alternative perspective on the causal explanation of the relationship between personality and leadership emergence. Previous research has typically assumed that personality traits affect leadership emergence only (Derue, Nahrgang, Wellman, &Humphrey,2011; Judgeetal.,2002). The current research challenges and complements this assumption by showcasing that leadership emergence over time may also shape personality adaptation. Coupled with previous research, the current research may inspire future work to

integrate the two seemingly conflicting views and examine possible reciprocal relationships between personality and leadership (Bandura, 1997; Frese, 1982; Kohn & Schooler, 1978).

Theoretical Background and Hypotheses

Theory and Research on Personality Development

Two major theoretical perspectives have emerged in the literature on personality development (Costa Jr, McCrae, & Löckenhoff, 2019; Specht et al., 2011). According to the classic trait perspective, environmental factors cannot change adult personality traits because personality traits are endogenous and are only under the control of biological maturation (McCrae & Costa Jr, 1999; McCrae et al., 2000). Recently, a novel approach, the transactional perspective, underscores the transactions between personality and the environment (e.g., Caspi & Moffitt, 1993;Roberts, Caspi, &Moffitt,2003; Roberts et al., 2008). The transactional perspective postulates that the environment can influence adult personality development, although rarely dramatically; it also recognizes the role of personality traits in shaping the environment. Empirical evidence from organizational research (Tasselli et al., 2018; Woods, Wille, Wu, Lievens, & De Fruyt, 2019) and the literature on personality psychology (Bleidorn et al., 2018; Caspi et al., 2005; Donnellan et al., 2015) mostly supports this middle-ground approach. The theoretical work on personality development by Caspi and Moffitt (1993) represents such a transactional perspective.

Caspi and Moffitt (1993) highlighted the importance of role transitions in fostering personality development, because transitions to novel roles "require persons to organize their activities around new tasks" (p. 249). This theory predicts that personality change occurs "when there is a strong press to behave" and "clear information is provided about how to behave adaptively" (e.g., after assuming a leadership role; Caspi & Moffitt, 1993, p. 248). Changes in behaviors, thoughts, and feelings may occur in response to structured new expectations. Over time, it may promote changes in patterns of behaviors,

thoughts, and feelings, that is, changes of personality traits (Donnellan et al., 2015; Johnson, 1997).

Role expectations and demands have been proposed as one major form of such "strong pressure to behave" and inform "how to behave" (Caspi & Moffitt, 1993, p. 248). Role theory suggests that a role encompasses a variety of expectations set forth by others and oneself regarding what is appropriate and what is not (Biddle, 1979; Katz & Kahn, 1978). Role expectations serve as a reward structure and a social control mechanism, such that appropriate behaviors are reinforced and inappropriate behaviors are punished. Thus, when people assume new social roles, such as leadership roles, the new set of role expectations requires them to behave differently (Ilgen & Hollenbeck, 1991). Over time, appropriate behaviors will be reinforced, consolidated, and generalized, leading to personality change in a bottom-up fashion (Caspi & Moffitt, 1993).

An emerging body of evidence offers support for this theory of personality development. For example, transitioning into one's first job was related to increases in conscientiousness (Specht, Egloff, & Schmukle, 2011). Unemployment (Boyce, Wood, Daly, & Sedikides, 2015) and retirement (Specht et al., 2011) were related to decrease in conscientiousness.

Becoming a Leader and Changes in Conscientiousness and Emotional Stability

A role-based perspective on personality development suggests that transitioning from the role of employee into that of leader enhances two key personality traits: conscientiousness and emotional stability. Conscientiousness represents the tendency to be dependable, efficient, organized, and achievement motivated. Emotional stability, the opposite of neuroticism, refers to the tendency to remain calm and poised, and experience functional emotional adjustment, especially under stressful situations. In brief, as we elucidate in more detail below, a leadership role entails taking responsibilities and fulfilling obligations to ensure

adequate performance of oneself, the direct subordinates, the work group, and the organization (Bass & Bass, 2008; Hogan, Curphy, & Hogan, 1994; Yukl, 2013). Such demands may include various forms of work ranging from daily routines to novel and risky tasks (Fleishman et al., 1991; Mintzberg, 1971; Yukl, 2012). Furthermore, leaders need to form committed, meaningful bonds with a large number of stakeholders at work, including subordinates, upper management, and those outside organizations (e.g., Floyd & Wooldridge, 1992; Reitzig & Maciejovsky, 2015). Requirements of such leadership roles motivate new leaders to behave accordingly, with adequate behaviors reinforced and inappropriate ones punished (Ilgen & Hollenbeck, 1991). To successfully meet these novel role expectations, novice leaders need to be more efficient, dependable, organized, and behave conscientiously; they also need to be able to embrace greater challenges, better control and manage emotions, and remain more poised and worry less in stressful situations. Over time, those behavioral changes will consolidate and generalize, leading to increases in conscientiousness and emotional stability (Caspi & Moffitt, 1993).

Research on implicit theories of leadership provides further support for the expectation that leadership roles necessitate individual attributes pertaining to high levels of conscientiousness and emotional stability. This line of research focuses on a central question: What characteristics does a typical/effective leader have (Lord, Foti, & De Vader, 1984). It demonstrates that when describing a typical leader, lay people often use such individual characteristics as dedicated, disciplined, hardworking, strong, excellence oriented, and nonirritable (Den Hartog et al., 1999; Offermann, Kennedy, & Wirtz, 1994). Such individual attributes map well onto definitions of conscientiousness and emotional stability. Taken in concert, we propose that:

Hypothesis 1: Being promoted to leadership positions is positively related to increases in conscientiousness over time.

Hypothesis 2: Being promoted to leadership positions is positively related to increases in emotional stability over time.

Assuming a Leadership Role and Increases in Job Role Demands

Assuming a supervisory role tends to impose on nascent leaders a large number of tasks and responsibilities (Ilgen & Hollenbeck, 1991). Our prediction on the relationship between assuming a leadership role and increases in job role demands is derived mainly from the literature on the nature of leadership roles and supervisory work (Fleishman et al., 1991; Mintzberg, 1971; Yukl, 2012). Given the prominence of leadership positions to the effectiveness of employees, teams, and organizations, the obligations inherently embedded in leadership role are of great significance to multiple stakeholders (Bass & Bass, 2008; Yukl, 2013). In his seminal work on analyzing daily activities of chief executives, Mintzberg (1971) reported three major sets of roles associated with supervisory work: information processing roles (e.g., serving as a central point of collecting and disseminating information), interpersonal roles (e.g., interacting with people inside and outside organizations), and decision-making roles (e.g., decision making in face of uncertainty, such as on initiating changes and allocating resources). Mintzberg (1971) concluded that leaders tend to "perform a great quantity of work at an unrelenting pace" (p. B-99). Fleishman et al. (1991) summarized previous research on effective leadership behaviors and conclude that there exist four major dimensions of leadership behaviors that resemble Mintzberg's work: information search and structuring, information use in problem solving, managing personnel resources, and managing material resources. Yukl (2012) reviewed more recent research on effective leadership behaviors and puts forth four major categories of leadership behaviors: task-oriented, relationship-oriented, change-oriented, and external.

Taken together, this line of research suggests that assuming leadership roles requires job incumbents to take on a larger amount of leadership responsibilities, often of greater

significance to organizations, than when they were employees. Indeed, this notion has been echoed by theoretical work and findings of research showing that supervisory jobs are inherently characterized by high levels of job demands (e.g., heavy workloads and long working hours; e.g., Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Ganster, 2005; Hambrick, Finkelstein, & Mooney, 2005; Lee &Ashforth, 1991; Li, Schaubroeck, Xie, & Keller, 2018). Thus, we predict that:

Hypothesis 3: Being promoted to leadership positions is positively related to increases in job demands over time.

Increases in Job Role Demands as a Mediating Mechanism

As we explained earlier, the theoretical work by Caspi and Moffitt (1993) predicted that during role transitions, novel role demands and expectations bring about ambiguity and unpredictability. Given that individuals are motivated to restore a sense of predictability and clarity, when clear and structured information is provided, they tend to change their behaviors to adapt to the novel expectations. Accumulation of behavioral changes over time may facilitate personality development. Stated differently, changes in role demands and expectations serve an important underlying mechanism for the influences of role transitions on personality change.

In the context of this research, new leadership roles likely provide a strong situation (Davis-Blake & Pfeffer, 1989) for novice leaders to behave accordingly to cope with various demands and responsibilities mandated by leadership obligations. Such new demands and expectations generate strong pressure and motivation for nascent leaders to adapt after their transitioning into leadership roles. Thus, nascent leaders need to work diligently and efficiently, be organized, challenge themselves, be dependable to subordinates and other stakeholders, manage their emotions in face of stressful situations, and be able to deal with uncertain and unpredictable situations, probably at greater levels than when they were employees. Such

behaviors map well onto the behavioral manifestations of conscientiousness and emotional stability (Goldberg, 1990). Over time, as novice leaders successfully enact new leadership roles, such behaviors may consolidate and habituate, fostering enhanced conscientiousness and emotional stability (Roberts et al., 2008). Providing indirect support to this prediction, research has shown that high job demands may serve as challenges to spur high well-being, and superb performance (LePine, Podsakoff, & LePine, 2005; N. P. Podsakoff, LePine, & LePine, 2007).

Hypothesis 4: Increases in job demands mediate the relationship between being promoted to leadership positions and increases in conscientiousness (H4a) and emotional stability (H4b).

An Overview of the Current Research

We tested our hypotheses in two three-wave longitudinal studies with data from National Survey of Midlife in the United States (MIDUS) and the Household, Income and Labor Dynamics in Australia (HILDA) Survey. We capitalized on the advantages of quasi-experimental designs (Cook, Campbell, & Peracchio, 1990; Grant & Wall, 2009) by comparing the personality development of two groups of participants (see Figure 1). A treatment group (i.e., becoming leaders group) was composed of participants who were employees at Time 1, promoted into leadership positions by Time 2 (the transition occurred between Time 1 and Time 2), and remained as leaders at Time 3. We then adopted a propensity score matching approach (Austin, 2011; Haviland, Nagin, & Rosenbaum, 2007) to generate an equivalent control group (i.e., the nonleaders/always-employees group) comprising participants who were employees throughout the three waves. The longitudinal quasi-experimental design "mimics some of the particular characteristics of a randomized controlled trial" (Austin, 2011, p. 399), is able to "rule out many alternative explanations for development, such as historical effects … and age-graded development*"*(Schwaba & Bleidorn, 2019, p. 654) and thus allows

us to "strengthen causal inferences" (Grant & Wall, 2009, p. 655) for the relationship between becoming a leader and subsequent personality development in a rigorous manner.

Time Lag in the Current Research and the Literature on Personality Development

Theory and research on time and temporal issues suggest that the identification of optimal time lags should be informed by theoretical rationale, research evidence, and pragmatic concerns in data collection (Dormann & Griffin, 2015; Mitchell & James, 2001; Ployhart & Vandenberg, 2010; Shipp & Cole, 2015). Theoretically, time lags should be sufficient to allow an effect to arise so that researchers can capture meaningful changes of a construct of interest. The selection of time lags should also be in alignment with prior research that have observed significant development of the construct, or the lack thereof. Pragmatically, collecting longitudinal data too frequently may cause participants' fatigue and boredom and thus compromise data quality. Thus, identifying the optimal time lags requires researchers to balance all the above concerns to develop an appropriate and feasible design to tackle their research questions. In practice, however, because of the dearth of theories on time and temporal issues in most areas of organizational research (Dalal, Alaybek, & Lievens, 2020; Mitchell & James, 2001; N. P. Podsakoff et al., 2019; Shipp & Cole, 2015), researchers tend to give greater weight to prior research findings and feasibility of data collection in their decision.

In this research, we followed the above principles to seek longitudinal data of appropriate time intervals to test our research questions. Our selection of time intervals was informed by previous research on personality development (Roberts et al., 2006) and recent work in longitudinal research (Dormann & Griffin, 2015; Mitchell & James, 2001). Theoretically, the effect of life events on personality change may take years to consolidate and materialize, before it reaches its peak and decays (Donnellan et al., 2015; Mitchell & James, 2001). A meta analytic study (Roberts et al., 2006) has shown a positive correlation

between the magnitude of personality change and time interval, ranging from 1 year to 43 years. Thus, we rely on the above evidence and guidance to identify the time frames in studying personality change.

In Study 1, we examined the direct relationship between becoming a leader and subsequent changes in personality traits (Hypotheses 1 and 2) with a time lag of 10 years. We then conducted Study 2, to further investigate the mediating role of change in job role demands (Hypotheses 3 and 4) with a time lag of 4 years. Convergent findings from the two studies with different contexts and time intervals indicate the robustness of our conclusions.

Study 1

Method

Participants and procedure. Our research was approved by the Survey and Behavioral Research Ethics Committee of the Chinese University of Hong Kong ("Influences of becoming a leader on personality change: A longitudinal investigation", reference No. SBRE-19–509 and "Influences of becoming a leader on personality change: A validation study of personality scales", reference No. SBRE-19-749). We used data from the three-wave MIDUS study in the United States in Study 1. MIDUS is a longitudinal interdisciplinary research project on human well-being and aging, which has been sponsored by MacArthur Foundation Research Network and National Institute of Aging (P01-AG020166 and U19-AG051426). The first wave of the MIDUS data was collected from 1995 to 1996 from a national representative sample of the U.S. The same participants were contacted in the second and third waves, which took place approximately 10 years and 20 years later, respectively. In each of the three waves, personality variables were collected through self-administered questionnaires and leadership information phone interviews.

No research on a similar topic using MIDUS data has been published. In this research, we included working individuals who provided complete data on gender, age, education level,

and supervisor roles across the three waves and at least one wave data on personality variables. With complete information on leadership roles across time, we were able to generate two groups of participants. The becoming leaders group comprised those who were employees at Time 1 but were promoted into supervisory positions by Time 2 and remained supervisors at Time 3. We used a propensity score matching method (Austin, 2011; Haviland et al., 2007) to form a nonleaders group with employees across the three waves.

As suggested previously (Bliese & Ployhart, 2002; Little & Rubin, 2002; McArdle, 2009; Newman, 2009), we used all available data with maximum likelihood (ML; also known as full information maximum likelihood [FIML]) estimation in Mplus. Newman (2014) pointed out that using "all the available data" is the first principle of missing data analysis (p. 384). In total, 90 participants were included in the becoming leaders group (61 provided complete data) and 161 in the nonleaders group (128 provided complete data). Information on demographic variables, income and personality variables at Time 1 for the two groups are reported in Table 1.

Measures.

Becoming a leader. Whether an employee became a leader (i.e., leadership emergence) during the period of this research was assessed with information on one's leadership role occupancy at the three measurement occasions. Prior leadership research has assessed leadership role occupancy by asking participants whether they held or had held supervisory roles (Day, Sin, & Chen, 2004; Judge et al., 2002; Li, Arvey, & Song, 2011). In Sherman et al.'s (2012) study, which provided the most useful point of reference for the present research, leadership role occupancy was assessed with the question, "Are you responsible for managing others?".

Accordingly, leadership role occupancy was assessed using responses to a question in the three waves of MIDUS survey: "Do you supervise anyone on your main job?" Responses to the question were converted into a variable indicating leadership roles (i.e., 0 = nonleaders,

1 = leaders) at each time point. Such information was further used to generate the variable of becoming a leader. An individual was treated as becoming a leader if s/he was an employee at Time 1, was promoted into leadership positions by Time 2, and remained as supervisors at Time 3. These 90 individuals formed the becoming leaders group, which was used as the treatment group in our analyses (Cook et al., 1990; Grant & Wall, 2009).

We then adopted the propensity score matching approach (Austin, 2011; Haviland et al., 2007) to create an equivalent control group (i.e., the nonleaders group). In total, 313 participants were employees throughout the three waves. From these participants, the control group was created using propensity score matching to approximate the effect of randomization by matching values of confounding factors between the treatment and the control group (Austin, 2011). Specifically, R package MatchIt was used to create propensity scores through a logistic regression where participants' leadership status was predicted by the nine individual difference variables (Ho, Imai, King, & Stuart, 2011), including age, gender, education level, income, and the Big Five personality traits at Time 1. We used two-to-one matching in this study. For each participant in the treatment group, the algorithm searched for up to two participants from the control group who provided most similar propensity scores based on the nine variables. Previous Monte Carlo studies have shown that two-to-one matching was more optimal than other matching methods in terms of avoiding sampling bias (Austin, 2010). Further, following previous recommendations (Austin, 2010, 2011), the search was conducted with a caliper of width equal to 0.2 SD of the logit of the propensity score for the treatment group participants. In other words, the difference in the logit of the propensity score between the two groups in the propensity-score-matched set was required to be less than 0.2 SD of the treatment group participants. In the final analyses, 90 participants were included in the treatment group and 161 in the generated equivalent control group.[2] The

method has recently been used in research on personality change (e.g., Schwaba & Bleidorn, 2019).

Conscientiousness and emotional stability. MIDUS researchers assessed participants' Big Five personality traits three times with the Midlife Development Inventory (Lachman & Weaver, 1997). This inventory included personality items from previous research (Goldberg, 1990) and has been used in previous research (Human et al., 2013; Kornadt, 2016; Mu, Luo, Nickel, & Roberts, 2016; Turiano et al., 2012). Participants indicated the extent to which they agreed or disagreed to the items on a four-point response scale ranging from 1 (a lot) to 4 (not at all). Their responses were coded such that higher scores reflect higher personality traits. Previous research on the factor structures of the personality scales found significant cross-loadings for some items and used different versions of the personality scales (Iveniuk, Laumann, Waite, McClintock, & Tiedt, 2014; Zimprich, Allemand, & Lachman, 2012). Based on these studies and research on measurement invariance of the MIDUS personality scales (South, Jarnecke, & Vize, 2018) and personality scales in general (Dong & Dumas, 2020), conscientiousness and emotional stability were evaluated in this study by four and three items respectively. Sample items were "organized" (conscientiousness), and "moody" (emotional stability, negatively worded). Internal consistency coefficients (Cronbach's alpha) for conscientiousness were .56, .48, and .63, respectively for the three waves (the coefficients were relatively low due to the use of a negatively worded item). The emotional stability scale also demonstrated appreciable internal consistency reliabilities (α = .81, .73, and .69). All items are displayed in the Appendix.

We conducted a validity study using an independent sample via Amazon's Mechanical Turk (MTurk, Buhrmester, Kwang, & Gosling, 2011) to demonstrate the convergent validities and test-retest reliabilities of the personality measures used in this study. We invited 230

participants to complete online surveys twice with an interval of one week. In total, 150 participants (average age was 35.81; 58.7% were male) completed both questionnaires with usable data. Each questionnaire included measures of the Big Five personality traits used in Study 1 (and also in Study 2), 44 personality items from the Big Five Inventory (John, Naumann, & Soto, 2008), and the one hundred-item version of the Big Five personality instrument from the International Personality Item Pool (Goldberg et al., 2006). Results (see Table 2) show that personality measures used in the first (and the second) study correlated highly (ranging from .82 to .93) with corresponding measures with Big Five Inventory and International Personality Item Pool. Test–retest reliability coefficients ranged from .81 to .90. The results suggest the personality measures used in this research have sound psychometric properties.

Control variables. Gender, age, and education have been found to be related to leadership emergence (Bass & Bass, 2008) and personality development (Caspi et al., 2005; Donnellan et al., 2015; Roberts & DelVecchio, 2000; Roberts et al., 2006). Although propensity score matching generated in principle equal mean levels of those variables across the two groups, their variance may not necessarily be the same. In keeping with previous research (e.g., Specht et al., 2011), we thus controlled for these variables to rule out their influences more completely.

Analytical strategy. We adopted the latent growth curve modeling approach (Chan, 1998; Ployhart & Vandenberg, 2010; Preacher, Briggs, Wichman, & MacCallum, 2008) to test our hypotheses. Univariate latent growth curve modeling was used to model two parameters: intercept (i.e., starting point) and slope (i.e., change). As shown in the right-hand side of Figure 2, a personality variable is modeled with an intercept and a slope (the same for job role demands).

We first performed univariate latent growth curve analyses. We used a dummy leadership variable (i.e., 0 = the nonleaders group,1 = the becoming leaders group) to predict the change parameters (i.e., slopes). Significant coefficients of the leadership variable provide direct support for the influences of becoming a leader on personality change (Hypotheses 1 and 2). Consistent with previous research (e.g., Chawla, MacGowan, Gabriel, & Podsakoff, 2020; Newton, LePine, Kim, Wellman, & Bush, 2020; Sherf & Morrison, 2020), we used the following indices to assess model fit: comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR).

Results

Scale independence and measurement equivalence. As suggested in previous research (McArdle, 2009; Ployhart & Vandenberg, 2010; Preacher et al., 2008), we performed confirmatory factor analyses to demonstrate the independence of research variables at each wave and measurement invariance tests of each variable across time. Results show satisfactory model fit indices for a two-factor model with conscientiousness and emotional stability (see Table 3). Thus, the personality variables were independent from each other.

We then compared model fit indices among three types of measurement invariance, configural (i.e., form), metric (i.e., factor loading), and scalar (i.e., intercept) equivalence (Vandenberg & Lance, 2000) across the three time points. We followed Finkel (1995) and correlated error terms of the same item across time. The results (see Table 3) demonstrated sufficient measurement equivalence for the measures used in Study 1, which is consistent with previous research (e.g., Schwaba & Bleidorn, 2018).

Tests of hypotheses. The means, standard deviations, and correlations among study variables are presented in Table 4. We compared the means of each of the study

variables across the three waves as a preliminary examination of their changes and the rank-order stability for the study variables (see Table 5). The results show significant increases in emotional stability from Time 1 to Time 2 and Time 3 for both the becoming leaders group and the nonleaders group. The becoming leaders group also experienced significant increases in conscientiousness after Time 2, whereas the nonleaders group seemed to experience reduced conscientiousness from Time 2 to Time 3. We also calculated the effect sizes of the differences using Cohen's d (1988) for repeated measures. The differences in personality change were further tested with latent growth curve modeling. Hypotheses 1 and 2 predicted that becoming leaders is related to significant subsequent increases in conscientiousness and emotional stability over time. Results (see Table 6) show that becoming a leader significantly correlated with increases in conscientiousness (coefficient = .08, $p < .05$, Model 1), but not with increases in emotional stability (coefficient = .04, $p > .10$, Model 2). We also calculated the effect size of the influence of becoming a leader on personality change using the approach by Feingold (2009, 2017). This approach produces an effect size index equivalent to Cohen's d (1988). The effect sizes were .37 and .10 for conscientiousness and emotional stability respectively. Thus Hypothesis 1 was supported but Hypothesis 2 was not.

We further plotted the development of conscientiousness for the two groups (Figure 3A) with the means of conscientiousness (i.e., raw scores) across time. The becoming leaders group experienced significant increases in conscientiousness (slope = .08, $p < .01$) across the three waves. However, the change in conscientiousness for the nonleaders group was not significant (slope = -.01, $p > .10$). This result provides further evidence for the relationship between becoming a leader and subsequent increases of conscientiousness over time.[3]

Supplementary analysis. We performed additional analyses with an alternative leadership measure to supplement our rudimentary measure of leadership role occupancy.

Specifically, we used an alternative leadership measure capturing span of control with an item asking participants to report "How many people do you supervise?", if they had supervised others on their main job. Results show that with this alternative measure, becoming a leader had a significant impact on both increases in conscientiousness and emotional stability. Thus, it seems that the alternative measure of span of control is more sensitive in generating significant findings.

Study 2

Method

Participants and procedure. In Study 2, we used three-wave longitudinal data from the HILDA Survey (Summerfield et al., 2017; Wooden, Freidin, & Watson, 2002). The major purpose of the HILDA study is to track economic conditions and health and well-being of Australians over time. The survey started with an initial sample of households that were representative of all Australian households in 2001 and have since then retained its cross-sectional representativeness over time (see Summerfield et al., 2017). Members of each household have been traced annually. We used data from the survey years of 2005, 2009, and 2013, when the Big Five personality traits were assessed. Thus, the time interval was 4 years. In these years, respondents also reported whether they held leadership positions and their job role characteristics.

In our analyses, we selected working participants who provided complete data on sex, age, education level, work status (e.g., full time vs. part time), and supervisory roles across the three waves and at least one wave of data on major study variables. As in Study 1, we included two groups (becoming leaders group and nonleaders group) of participants based on complete information on supervisory status in analyses and handled missing data with the ML estimation in Mplus. Information on age, gender, education level, pay and personality at Time 1 for the two groups after propensity score matching was provided in Table 7.

Measures.

Becoming a leader. As in Study 1, becoming a leader was assessed with information on leadership role occupancy across the three waves. Participants were asked a question: "As part of your job, do you normally supervise the work of other employees?" Responses to the question were coded (i.e., 0 = nonleaders, 1 = leaders) for each time point. Such information then was used to identify whether an employee at Time 1 became a leader by Time 2 and remained as a leader at Time 3. A total of 431 individuals (342 provided complete data) were identified and they formed the becoming leaders group.

Propensity score matching method was adopted to generate an equivalent control group, the nonleaders group with equivalent levels of age, gender, education level, pay, and personality traits at Time 1. After propensity score matching, the nonleader control group included 818 participants (675 provided complete data).

Conscientiousness and emotional stability. Big Five personality traits were assessed using descriptive adjectives from Saucier (1994), which are based on Goldberg's (1990) scale of Big Five personality traits. Participants were asked to indicate the extent to which they agreed or disagreed to the adjectives on a response scale ranging from 1 (strongly disagree) to 7 (strongly agree). Consistent with the approach adopted in Study 1 in constructing scales, conscientiousness and emotional stability were captured by three and four items, respectively. Sample items were "orderly" (conscientiousness), and "moody" (emotional stability, negatively worded). Internal consistency coefficients for conscientiousness were .73, .75, and .78, respectively for the three waves. The coefficients were also appreciable for emotional stability (α = .73, .74, and .72). The Appendix shows all the items.

Job role demands. Participants' work role related job demands were assessed using a scale of three questions (α = .72, .72, and .75, respectively) adapted from the Job Content Questionnaire (Karasek, 1979; Karasek et al., 1998) on a 7-point scale ranging from 1 (strongly

disagree) to 7 (strongly agree). The three items are "I have to work fast in my job," "I have to work very intensely in my job," and "I don't have enough time to do everything in my job." Job demands have been widely used in previous research to reflect the amount of various types of workloads and responsibilities associated with work roles in organizations (Ganster & Rosen, 2013; Hambrick et al., 2005; N. P. Podsakoff et al., 2007; Sonnentag & Frese, 2012).

Control variables. Participants' gender, age, education, and full-time work status (full time vs. part time) may be related to both leadership emergence (Bass & Bass, 2008), job role demands (Ganster & Rosen, 2013; Sonnentag & Frese, 2012), and personality development (Caspi et al., 2005; Donnellan et al., 2015; Roberts & DelVecchio, 2000; Roberts et al., 2006). In keeping with previous research (e.g., Specht et al., 2011), we thus included them in analyses to rule out their influences more completely because their variance may not be necessarily the same across the two groups. When testing the indirect effects of becoming a leader on personality change through increases in job role demands, we controlled the starting point (i.e., intercept) of job demands and the starting point of personality traits in predicting changes of conscientiousness (Bleidorn, 2012; Hudson, Roberts, & Lodi-Smith, 2012).

Analytical strategy. We used the latent growth curve modelling approach (Chan, 1998; Ployhart & Vandenberg, 2010; Preacher et al., 2008) in Study 2. Univariate latent growth curve models were estimated to test Hypotheses 1, 2, and 3. To test the mediation hypothesis (Hypothesis 4), we performed bivariate (with a personality trait and job role demands, see Figure 2) latent growth curve modeling with a binary leadership variable indicating becoming leader or nonleaders group (i.e., 0 = the nonleaders group, 1 = the becoming leaders group). We also tested the indirect effect of becoming a leader on change of personality through change of job demand and calculated the confidence interval.

Results

Scale independence and measurement equivalence. We conducted confirmatory factor analyses to demonstrate the independence of study variables at each wave of data collection and measurement equivalence of each variable across time (McArdle, 2009; Ployhart & Vandenberg, 2010; Preacher et al., 2008). Results show that a three-factor model (conscientiousness, emotional stability, and job role demands) fit the data well at each wave (see Table 8). Thus, the variables in Study 2 were sufficiently distinct from each other.

Then we compared three types of measurement invariance, configural (i.e., form), metric (i.e., factor loading), and scalar (i.e., intercept) equivalence (Vandenberg & Lance, 2000) across the three measurement occasions. Results show appreciable measurement equivalence over time.

Tests of hypotheses. Table 9 displays the means, standard deviations, and correlations among Study 2 variables. We conducted a preliminary examination of changes in personality traits and job role demands by comparing their means across time (see Table 10). The results show significant increases of conscientiousness and job demands over time for both the leader and nonleaders group. The nonleaders group experienced significant increases in emotional stability.

We first examined Hypotheses 1 and 2 on the relationship between becoming a leader and subsequent changes of conscientiousness and emotional stability. Recall that we tested these relationships using leadership as a binary variable (i.e., 0 = nonleaders group and 1 = becoming leaders group). Results (Model 1, Table 11) reveal that becoming a leader was significantly related to increases in conscientiousness (coefficient = .07, $p < .05$), lending support to Hypothesis 1. The effect size (Feingold, 2009, 2017) was .12. The relationship between becoming a leader and change of emotional stability was not significant (coefficient = -.01, $p > .10$, Model 4; effect size = -.02). Thus Hypothesis 2 received no support.

We plotted the change of conscientiousness for the two groups with the means of conscientiousness across time (Figure 3B). Although the nonleaders group experienced significant increases in conscientiousness over time (slope = .08, $p < .001$), the becoming leaders group exhibited greater increases (slope = .16, $p < .001$).

Hypotheses 3 stated that after becoming leaders, individuals' job role demands increase. This hypothesis was supported by a significant relationship between the leadership variable and changes in job role demands (coefficient = .17, $p < .001$, Model 2 of Table 11; effect size = .27). This finding is corroborated by the result of plotting the change of job demands for the two groups over time (Figure 3C). The becoming leaders group experienced greater increases in job demands (slope = .22, $p < .001$) than the nonleaders group (slope = .06, $p < .05$).

Hypothesis 4 dealt with the mediating role of change in job role demands in the relationship between becoming a leader and personality changes. Because the relationship between becoming a leader and increases in emotional stability was not significant, the mediation hypothesis was tested only with conscientiousness. In the analyses, we used the leadership variable, the slope of job role demands, the intercept of job role demands, and the intercept of conscientiousness to predict the slope of conscientiousness. The influence of the leadership variable became nonsignificant (coefficient = -.01, $p > .10$, Model 3 of Table 11), whereas the influence of the slope of job role demands was still significant (coefficient = .52, $p < .05$). The indirect effect was .071 (95% confidence interval [.006, .192]). Thus, the results support the mediating role of changes of job demands in the relationship between becoming a leader and change in conscientiousness. Hypothesis 4 was partially supported.

General Discussion

Inspired by the burgeoning literatures on personality development, this study adopted a role-based perspective of personality development at work and examined what, how, and why personality traits may develop after one's adoption of novel leadership roles. In a recent review, Tasselli et al. (2018) pointed out that one important reason for the dearth of organizational research on personality change is that "researchers have tended to render such change impossible by definition" (p. 44). This may have to do with the influence by the Five Factor theory of personality. Personality psychology has gone through a similar period of development. But recently, examining personality development has gained momentum in personality psychology (for reviews, see Bleidorn et al., 2018; Caspi et al., 2005; Donnellan et al., 2015). Heeding a recent call (Tasselli et al., 2018), we investigated changes in conscientiousness and emotional stability during leadership emergence. We hope this research will stimulate more future research on personality development at work.

Implications for Theory and Research

Our opening quote from Batman Begins suggests that what people do may shape their personality traits. Consistently, results from both studies revealed that after becoming leaders, individuals enhanced their levels of conscientiousness, meaning that they became more dependable, organized, and efficient. To perform various job responsibilities and obligations embedded in leadership roles, nascent leaders appear to be dictated by the structured role expectations to behave more conscientiously (Caspi & Moffitt, 1993). Successful enactment of leadership roles over time may facilitate the conscientious behaviors to be habituated and generalized. The changes of behavior patterns essentially give rise to changes in conscientiousness.

Our finding that transitioning into leadership roles was related to subsequent increases in conscientiousness only, not other Big Five personality traits, is consistent with previous research. For example, Bleidorn (2012) reported that transitioning from school to work

resulted in increases only in conscientiousness of the Big Five personality trait. Specht et al. (2011) found that among the Big Five, only conscientiousness increased (decreased) when people started the first jobs (retired). Our finding is also consistent with research showing that conscientiousness is the best predictor of job performance (Barrick & Mount, 1991) as well as one of the best predictors of leadership (Derue et al., 2011; Judge et al., 2002; Oh & Berry, 2009).

It is important to note that our findings were obtained with a quasi-experimental design (Cook et al., 1990; Grant & Wall, 2009) by comparing personality development of two groups of individuals, one becoming leaders group and one nonleaders group. The propensity score matching method (Austin, 2011; Haviland et al., 2007) was adopted to ensure that participants in the two groups were in principle equal in terms of age, gender, education level, income, and the Big Five personality traits at Time 1. Thus, using this method allowed us to rule out alternative explanations that the pretreatment differences between the two groups may drive the difference in personality change. The strengths of design and analyses ensure the robustness of our findings.

The findings that assuming leadership roles was related to subsequent increases in one's conscientiousness also speak to the leadership literature. Leadership research (Derue et al., 2011; Judge et al., 2002) has primarily assumed that the causal interpretation of the relationships between personality and leadership emergence is that personality predicts leadership emergence. In this vein, our findings challenge and complement the dominant view by providing an alternative explanation that becoming leaders may also shape personality traits. We reckon that our findings do not necessarily suggest that the previous dominant assumption on the causality of the relationship between personality traits and leadership, which is based on the five factor model, is incorrect. We encourage future work to integrate

the two different perspectives and examine the possibility of reciprocal relationships between personality traits and leadership (Kohn & Schooler, 1978; Li, Li, Fay, & Frese, 2019).

We did not observe significant findings on changes in emotional stability. Roberts et al. (2006) found that emotional stability plateaus between about age 40 and 50. This finding appears to be what we found for in Study 1: Emotional stability did not change significantly from Time 2 to Time 3. The average age of participants in Study 1 ranged from about 40 to 50. In Study 2, the leader group exhibited no significant change in emotional stability. Their average age was also roughly within the range of 40 to 50. Future research could examine the reasons for the specific patterns of change in emotional stability during this period more closely and may also look into individual difference in the pattern of change in personality.

We found that changes of job role demands mediated the relationship between becoming a leader and change of conscientiousness. The literature on personality development has been in its infancy in examining mechanisms for personality change (Roberts & Nickel, 2017). So far, past research has examined influences of major life events, such as having the first job, marriage, and unemployment on personality development (Bleidorn et al., 2018). Among the limited research on personality development at work, researchers have looked into influences of job satisfaction, job characteristics, job insecurity, income, and occupational status (e.g., Li, Fay, Frese, Harms, & Gao, 2014; Li et al., 2019; Roberts et al., 2003; Sutin, Costa Jr, Miech, & Eaton, 2009; Sutin & Costa, 2010; Wu & Griffin, 2012; Wu, Wang, Parker, & Griffin, 2020). Recent macro organizational research has shown increases in CEO cognitive complexity with increases in CEO job tenure (Graf-Vlachy, Bundy, & Hambrick, 2020). Our study extends this line of research by probing personality development after occurrence of a nonnormative event, becoming a leader, and more importantly, revealing a key underlying mechanism through change in job role demands. Future research should examine how other types of work role transitions (e.g., assuming the first job, job

rotations, becoming self-employed) and work experiences (e.g., adoption of artificial intelligence technology and teleworking) engender personality adaptation.

The effect sizes observed in the current research for change of conscientiousness seem small according to the conventional rule of thumb. This suggests that becoming a leader might not change an unconscientious person into a highly conscientious one.[4] Yet, the small effect sizes are consistent with findings of previous research in both personality psychology (Roberts et al., 2006) and effect sizes observed in organizational research in general (Bosco, Aguinis, Singh, Field, & Pierce, 2015). As pointed out previously (Prentice & Miller, 1992; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007), small effect sizes do not necessarily mean that such research findings have no practical significance at all. This raises the question why we did not record more changes in conscientiousness. Personality traits are relatively stable, and also prone to change (Donnellan et al., 2015; Johnson, 1997). Personality changes are often not dramatic, because of other mechanisms that may promote personality stability. For example, people may actively avoid novel environments or simply do not make "social and emotional investment that would result in change" (Roberts et al., 2008, p. 390). Moreover, not all the people react to the same change in the same manner and what we discovered in this paper was a general trend. Future research can examine individual differences in the speed, timing, and magnitude of personality changes.

It should be noted that our research does not provide a definite answer to the question whether the classic dispositional perspective of personality traits or a role-based transactional perspective of personality development is more accurate in accounting for personality development. In fact, there seems still an ongoing debate on the major determinants of personality trait development in the state-of-art of research in personality psychology (Costa Jr et al., 2019). We concur with personality psychologists (e.g., Bleidorn et al., 2019; Costa Jr et al., 2019; Nye & Roberts, 2019) and organizational scholars (e.g., Li et al., 2014;

Tasselli et al., 2018; Woods et al., 2019; Wu et al., 2020) that more research endeavors should be devoted to this intriguing and fruitful line of inquiry in organizational research.

Study Strengths, Limitations, and Directions for Future Research

Adopting a role-based perspective by integrating research from personality psychology and the literature on leadership, we tested our hypotheses with two three-wave longitudinal studies from two countries (Taylor, Li, Shi, & Borman, 2008) across approximately eight and 20 years. We also adopted a quasi-experimental design comparing two groups of individuals matched with their individual difference variables at Time 1. The strengths and convergent findings contribute to the robustness of our conclusions. Nevertheless, this study is also limited in several ways, which point to directions for future research. The first limitation is related to the abbreviated measure of the broad Big Five personality trait, although this practice has been widely adopted in research on personality change (Boyce et al., 2015; Lucas & Donnellan, 2011; Roberts & Nickel, 2017; Specht et al., 2014). The validation study demonstrated that our personality scales were valid and reliable. Prior research suggests that different subdimensions of the Big Five personality traits may show different patterns of change (Roberts et al., 2006). If feasible and when a fine-grained lower level model of personality is identified, future research should use longer scales to capture more delicate personality change such as changes of facets or nuances (Mõttus, Kandler, Bleidorn, Riemann, & McCrae, 2017).[5]

Second, using self-report measures of personality, although adopted as a dominant approach in personality research (Ones et al., 2007; Roberts et al., 2007), raises the possibility whether social desirability may potentially account for the significant findings (P. M. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Participants moving into leadership roles may think that they need to be more conscientious, rather than they actually become more conscientious.[6] However, if this is true, then those moving into leadership roles may also

think that they need to be more emotionally stable. However, results for changes on emotional stability were not significant. We urge future research to use other-report personality assessments if feasible (Connelly & Ones, 2010).

Third, conducting secondary analyses of public data limited our capability to test our theorization of the role-based perspective of personality change. Although we show that job role demands serve as an underlying mechanism for personality change during leadership emergence, assuming leadership roles may also change other aspects of work, such as job control (Li et al., 2018). We tested the moderating role of change in job control in Study 2 in the relationships between change of job demands and changes of conscientiousness and emotional stability, which might be suggested by the job demands-control model (Karasek, 1979). The results were not significant. Multiple possible mediators might also be a plausible reason for observing nonsignificant results for changes of emotional stability. Sound theories of personality development based on work experiences have yet to be developed in organizational research, which renders it difficult to examine multiple mediating mechanisms. We encourage future research to develop theories and explicitly examine other aspects of work that becoming a leader may change and integrate the role-based perspective and job demands-control model.

Fourth, following previous research (Day et al., 2004; Judge et al., 2002), we examined a crude form of leadership experiences, transitioning from the role of employees to that of leaders, on personality development. Leadership is multifaceted and may include various leadership styles. That said, our sensitivity analyses using an alternative measure of leadership, span of control, generated more visible and substantial results. In this vein, the analyses based on the crude leadership measure may present conservative tests of our hypotheses. Future research should investigate influences of

specific leadership behaviors at multiple organizational levels (e.g., first line leaders and CEOs) on changing individual characteristics in the long run (Day & Dragoni, 2015).

Fifth, time lag is a thorny issue in longitudinal research. Theory and research suggest that identifying optimal time lags should be informed by theoretical rationale, past research evidence, and the feasibility of data collection (Dormann & Griffin, 2015; Mitchell & James, 2001; Ployhart & Vandenberg, 2010; Shipp & Cole, 2015). Although our selection of time intervals was informed by theory and empirical research (Dormann & Griffin, 2015; Mitchell & James, 2001; Roberts et al., 2006), the selection of time lags might not be optimal. As pointed out by our anonymous reviewers, it is possible that during the 4- or 10-year time lag, many other important life events may occur, which then may dilute the influence of becoming a leader on personality change (Cohen, Cohen, West, & Aiken, 2003; Dormann & Griffin, 2015; Mitchell & James, 2001). However, if this is true, then our research likely represents a more conservative examination of the influence of becoming a leader. Thus, the significant relationships between becoming a leader and the associated change of conscientiousness afterwards suggest the robustness of the findings. Related, recent longitudinal research suggests collecting more waves of data to examine more nuanced changes in personality traits and other variables at work (Bleidorn et al., 2019; Donnellan et al., 2015; Ployhart & Vandenberg, 2010). Because investigation of personality change in organizational research is still in its infancy, and it is not always pragmatic to collect longitudinal data across years for organizational researchers, it seems not uncommon to find research using two waves or three waves of data. Although we believe that such two-wave or three-wave research is still valuable to advance this line of research, we encourage researchers to make their efforts to collect more waves of data in their investigations in the future if feasible. We concur with Podsakoff and colleagues (N. P. Podsakoff et al., 2019) that

researchers should conduct more comprehensive studies to examine the effect of time more explicitly in the future.

Sixth and related, because of ethical and feasibility concerns, we were not able to conduct a field experiment with random assignment and strong manipulation of our independent variable, becoming a leader, to draw more definitive causal inferences. Thus, we cannot draw causal inferences. As suggested by our anonymous reviewer, it seems possible that some events might have occurred between Time 1 and Time 2 for participants in the becoming leaders group, which caused their increases in conscientiousness and prompted them into leadership roles later on. We examined this possibility of reverse causality. We used available data in the two studies with participants who were employees at Time 1 and Time 2, but some were promoted into leadership positions by Time 3 and the rest remained as employees at Time 3. We adopted latent change score modeling (McArdle, 2001, 2009; Selig & Preacher, 2009) to model personality change from Time 1 to Time 2, and then used such a change variable to predict leadership status at Time 3. Findings from the two studies revealed that changes in conscientiousness from Time 1 to Time 2 did not significantly predict leadership emergence at Time 3. Although such analyses might not be ideal tests of reverse causality, the findings seem to suggest that reverse causality is not a serious problem.[7] Furthermore, using the propensity score matching approach "mimics some of the particular characteristics of a randomized controlled trial" (Austin, 2011, p. 399), to minimize alternative explanations caused by preexisting group differences and to "strengthen causal inferences" (Grant & Wall, 2009, p. 655). Schwaba and Bleidorn (2019) concluded that "Propensity-score matching can thus rule out many alternative explanations for development, such as historical effects (e.g., development because of the 2008 global recession), and age-graded development" (p. 654). We urge future research, if feasible, to adopt alternative designs and methods (e.g., the latent change score approach) to gauge the robustness of our findings.[8]

Practical Implications

Findings of this research provide important implications for both organizations and employees in better planning leadership succession and managing career development. Leadership succession has been deemed as a crucial issue for the sustainability of organizations (Kesner & Sebora, 1994). The finding that becoming a leader enhanced one's conscientiousness has important implications. Given the importance of conscientiousness for leadership (Judge et al., 2002), promoting an employee into a leadership position may have a potential to induce a virtuous cycle: Becoming a leader may enhance one's level of conscientiousness, which in turn may further enhance his or her leadership effectiveness. However, two caveats may surface. First, Judge, Piccolo, and Kosalka (2009) pointed out that highly conscientious employees may not be able to adapt to new environments well and may also fall short of creativity. Second, the relationship between conscientiousness and job performance may be curvilinear (Le et al., 2011), suggesting a diminishing marginal utility of the benefits of conscientiousness. Balancing the benefits and possible dark sides associated with increases of conscientiousness in leaders may be an important task for organizations. Organizations may implement special training for their leaders to better adapt to volatile environments and improve flexibility.

Our findings also have important implications for leadership development. Organizations may consider assigning employees with informal leadership roles as a form of stretch experiences to prod their employees to develop leadership capabilities. This may in the long run facilitate development of behaviors and traits related to conscientiousness and prepare the leader for the future tasks. The majority of the literature on leadership development has concentrated on leaders' skill and identity development via challenging work experiences (DeRue & Wellman, 2009; Dragoni, Oh, Vankatwyk, & Tesluk, 2011; Dragoni, Tesluk, Russell, & Oh, 2009; Lord, Day, Zaccaro, Avolio, & Eagly, 2017). We encourage

organizations to broaden the scope and content of leader development to include personality development and strive for "more holistic forms of leader development" (Day & Dragoni, 2015, p. 144).

Our findings also have important implications for employees in managing their careers. Given that becoming a leader represents a milestone for one's career development (Baruch & Bozionelos, 2010; Wang & Wanberg, 2017), assuming leadership roles seems a natural step for employees to climb up the corporate ladder. In this regard, our findings provide employees another perspective to consider and evaluate their career development decisions. We found becoming a leader was related to subsequent increases in conscientiousness over time. Although offering benefits on one's health (Bogg & Roberts, 2004), having a high level of conscientiousness may come at a cost of becoming less adaptable and less creative (Judge et al., 2009). Furthermore, increase in job role demands mediated the relationship between becoming a leader and increase in conscientiousness. Research on work stress has shown that job demands, although maybe perceived as challenges (N. P. Podsakoff et al., 2007), are resource-depleting and thus detrimental to well-being (Sonnentag & Frese, 2012). Being mindful of the benefits and costs may help employee to make more judicious decision to pursue careers as leaders.

Conclusion

The majority of extant organizational personality research has taken the position that personality traits influence work experiences, not vice versa. Although this view, which has been shaped by the Five Factor theory of personality, seems parsimonious, it cannot account for the accumulating empirical evidence that adults' personality traits continue to develop as people adapt to new life/work roles. We found that a role-based perspective of personality development helps explain the change in personality traits when people transition into leadership roles from employees. Work roles play a crucial

role in socializing individuals (Frese, 1982; Nicholson, 1984). We hope this study can stimulate more future research on the notion that "people are both producers and products of social systems" (Bandura, 1997, p. 6).

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Footnotes

1. Following Mintzberg (1971, 2009), we do not distinguish leaders from managers and supervisors here, although we acknowledge that in other cases doing so may be more useful.

2. As Austin (2010) noted, "Because of the imposition of the constraint that the logit of the propensity score of matched subjects could differ by, at most, a fixed amount, it is possible that insufficient numbers of untreated subjects will be available for matching to some treated subjects. Thus, when using M:1 matching (M > 1), it is conceivable that, although some matched sets will contain M untreated subjects, some matched sets will contain fewer than M untreated subjects" (p. 1094). This seems to be the case for our current propensity matching (161:90 = 1.79:1).

3. Results show that influences of becoming a leader on changes of agreeableness, openness, and extraversion were not significant. This was also the case for Study 2.

4. We thank our action editor for this comment.

5. We are indebted to our anonymous reviewer for pointing this out.

6. We thank our anonymous reviewer for this comment.

7. These results did not mean that conscientiousness cannot predict leadership emergence. Previous research on this issue uses a different design, which has been primarily cross-sectional in nature.

8. We thank our anonymous reviewer for this comment.

Appendix

Personality Items Adopted in the Current Research

Items Used in the Big Five Personality Measure in Study 1

Please indicate how well each of following descriptive adjectives describes you (1 = a lot, 4 = not at all)?

Conscientiousness: Organized, Responsible, Hardworking, and Careless (negatively worded)
Emotional stability: Moody (negatively worded), Worrying (negatively worded), and Nervous (negatively worded)
Agreeableness: Caring, Soft-hearted, and Sympathetic
Extraversion: Outgoing, Lively, Active, and Talkative
Openness: Creative, Imaginative, Intelligent, Curious, Sophisticated, and Adventurous

Items Used in the Big Five Personality Measure in Study 2

Please indicate how well each of the following describes you (1 = strongly disagree, 7 = strongly agree).

Conscientiousness: Orderly, Disorganized (negatively worded), and Efficient
Emotional stability: Moody (negatively worded), Envious (negatively worded), Touchy (negatively worded), and Tempera- mental (negatively worded)
Agreeableness: Sympathetic, Kind, Cooperative, and Warm
Extraversion: Shy (negatively worded), Quite (negatively worded), and Bashful (negatively worded)
Openness: Creative, Deep, Philosophical, and Intellectual

Table 1
Mean Individual Characteristics at Time 1 for the Two Groups After Propensity Score Matching (Study 1)

Matched individual characteristics	Becoming leaders group (n = 90)	Nonleaders group (n = 161)
Age	37.10	37.66
Gender (% of males)	57.8	55.9
Education	3.28	3.21
Log transformed annual income	10.26	10.26
Conscientiousness	3.43	3.42
Emotion stability	2.82	2.78
Agreeableness	3.43	3.40
Extraversion	3.34	3.27
Openness	3.10	3.05

Table 2
Correlations Between the Personality Measures in the Current Research and Corresponding Personality Variables from IPIP and BFI and Test-Retest Reliabilities in the Validation Study

	Conscientiousness		Extroversion		Agreeableness		Emotional stability		Openness	
Correlation	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
Correlation at Time 1										
IPIP	.86**	.86**	.87**	.91**	.92**	.90**	.92**	.85**	.85**	.86**
BFI	.90**	.81**	.91**	.92**	.82**	.82**	.92**	.78**	.84**	.85**
Correlation at Time 2										
IPIP	.89**	.87**	.87**	.88**	.91**	.88**	.92**	.84**	.86**	.83**
BFI	.92**	.86**	.92**	.93**	.83**	.79**	.93**	.78**	.85**	.85**
Test-retest reliability	.83**	.89**	.90**	.92**	.89**	.84**	.90**	.89**	.81**	.84**

Note. N = 150. IPIP = International Personality Item Pool; BFI = Big Five Inventory. **$p < .01$.

Table 3
Model Fit Indices for Testing Measurement Invariance and Variable Independence for Study 1

Model	$\chi^2(df)$	CFI	RMSEA	SRMR	ΔCFI	ΔRMSEA	ΔSRMR
Conscientiousness							
Configural invariance	72.25*** (47)	.965	.046	.063	—	—	—
Metric invariance	92.79*** (53)	.946	.055	.074	−.019	.009	.011
Scalar invariance	114.95*** (61)	.926	.059	.076	−.039	.013	.013
Emotional stability							
Configural invariance	39.10*** (21)	.981	.059	.036	—	—	—
Metric invariance	43.97*** (25)	.980	.055	.035	−.001	−.004	−.001
Scalar invariance	91.01*** (31)	.936	.088	.058	−.045	.029	.022
CFA							
Time 1	43.44*** (13)	.928	.097	.069	—	—	—
Time 2	35.93*** (13)	.902	.089	.069	—	—	—
Time 3	27.82*** (13)	.934	.068	.076	—	—	—

Note. N = 251. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFA = confirmatory factor analysis.
*** $p < .001$.

Table 4
Ms, SDs, and Correlations for Study 1 Variables

Variable	*M*	*SD*	1	2	3	4	5	6
1. Conscientiousness T1	3.42	.44	—					
2. Emotional stability T1	2.73	.79	.26	—				
3. Conscientiousness T2	3.48	.42	.58	.10	—			
4. Emotional stability T2	2.98	.70	.18	.59	.18	—		
5. Conscientiousness T3	3.48	.45	.60	.26	.59	.19	—	
6. Emotional stability T3	2.97	.67	.08	.58	.15	.70	.19	—
7. Becoming a leader[a]	1.36	.48	.01	.03	−.04	.00	.17	.08

Note. N = 189–251. Correlations ranging from .14 to .18 were significant at $p < .05$; correlations from .19 to .77 were significant at $p < .01$. T1 = Time 1; T2 =Time 2; T3 = Time 3. [a] 0 = nonleaders group, 1 = becoming leaders group.

Table 5
Means, Mean-Level Differences, and Rank-Order Stabilities for Personality Traits (Study 1)

Study variable	*M*/*SD*			Effect size (Cohen's *d*)			Rank-order stability		
	T1	T2	T3	d_{12}	d_{13}	d_{23}	r_{12}	r_{13}	r_{23}
Becoming leaders group									
Conscientiousness	3.43/.45	3.46/.42	3.59/.38	.05	.36*	.43**	.60**	.43**	.68**
Emotional stability	2.80/.68	3.03/.62	3.01/.59	.43***	.46***	.01	.52**	.55**	.67**
Nonleaders group									
Conscientiousness	3.45/.44	3.51/.40	3.44/.47	.13	.08	−.19	.56**	.68**	.58**
Emotional stability	2.81/.70	2.98/.62	2.92/.61	.33***	.24*	−.10	.63**	.59**	.71**

Note. N = 161 for the nonleaders group and 90 for the becoming leaders group. d-coefficients indicate standardized differences in mean level between measurement occasions: positive values signify mean-level increases and negative values mean-level decreases. r-coefficients indicate correlations of a variable between two measurement occasions. T1 = Time 1; T2 = Time 2; T3 = Time 3. *p < .05, ** p < .01, *** p < .001.

Table 6
Results of Latent Growth Curve Models: Study 1

Predictor	Slope of conscientiousness (Model 1), Coefficient (*SE*)	Slope of emotional stability (Model 2), Coefficient (*SE*)
Becoming a leader	.08* (.03)	.04 (.05)
Model fit indices		
$\chi^2(df)$	9.16 (6)	17.88* (5)
CFI	.986	.946
RMSEA	.046	.101
SRMR	.074	.024

Note. N = 251 (90 for the becoming leaders group and 161 for the non-leaders group). Becoming a leader: 0 = nonleaders group, 1 = becoming leaders group. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. Slopes indicate changes and intercepts indicate starting points. * $p < .05$.

Table 7
Mean Individual Characteristics at Time 1 for the Two Groups after Propensity Score Matching (Study 2)

Matched individual characteristics	Becoming leaders group (n = 431)	Nonleaders group (n = 818)
Age	34.01	34.82
Gender (% of males)	53.1	49.9
Education	5.57	5.68
Log transformed annual income	10.11	10.10
Conscientiousness	4.90	4.91
Emotion stability	4.85	4.87
Agreeableness	5.28	5.30
Extraversion	4.64	4.63
Openness	4.42	4.38

Table 8
Model Fit Indices for Testing Measurement Invariance and Variable Independence for Study 2

Model	χ^2 (*df*)	CFI	RMSEA	SRMR	ΔCFI	ΔRMSEA	ΔSRMR
Conscientiousness							
Configural invariance	26.25 (21)	.999	.014	.013	—	—	—
Metric invariance	28.79 (25)	.999	.011	.017	.000	−.003	.004
Scalar invariance	81.22 (31)	.988	.036	.031	−.011	.022	.018
Emotional stability							
Configural invariance	117.22*** (47)	.986	.035	.026	—	—	—
Metric invariance	129.18*** (53)	.985	.034	.033	−.001	−.001	.007
Scalar invariance	141.88*** (61)	.984	.033	.032	−.002	−.002	−.006
Job demands							
Configural invariance	55.43*** (21)	.991	.036	.024	—	—	—
Metric invariance	64.63*** (25)	.989	.036	.031	−.002	.000	.007
Scalar invariance	100.89*** (31)	.981	.043	.039	−.010	.007	.015
CFA							
Time 1	155.91*** (32)	.956	.058	.041	—	—	—
Time 2	155.16*** (32)	.956	.058	.041	—	—	—
Time 3	119.07*** (32)	.971	.049	.035	—	—	—

Note. N = 1,249. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual;
CFA = confirmatory factor analysis. *** $p < .001$.

Table 9
Ms, SDs, and Correlations for Study 2 Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Conscientiousness T1	4.92	1.14	—								
2. Emotional stability T1	4.88	1.11	.20	—							
3. Conscientiousness T2	5.03	1.11	.65	.18	—						
4. Emotional stability T2	4.93	1.10	.20	.61	.22	—					
5. Conscientiousness T3	5.15	1.14	.60	.17	.72	.15	—				
6. Emotional stability T3	4.96	1.09	.24	.57	.25	.64	.22	—			
7. Job demands T1	4.37	1.32	.02	−.07	.01	−.03	.04	−.06	—		
8. Job demands T2	4.45	1.32	−.01	−.05	.03	−.07	.05	−.06	.44	—	
9. Job demands T3	4.61	1.35	−.05	−.08	−.03	−.10	−.02	−.10	.39	.53	—
10. Becoming a leader[a]	1.35	.48	−.01	−.02	.06	−.03	.07	−.02	.05	.20	.18

Note. N _ 1,014 –1,249. Correlations ranging from .06 to .08 were significant at p _ .05; correlations from .09 to .72 were significant at p <.01.
T1 = Time 1; T2 =Time 2; T3 = Time 3.
[a] 0 = nonleaders group, 1 = becoming leaders group.

Table 10
Means, Mean-Level Differences, and Rank-Order Stabilities for Personality Traits and Job Role Demands (Study 2)

Study variable	*M*/*SD*			Effect size (Cohen's *d*)			Rank-order stability		
	T1	T2	T3	d_{12}	d_{13}	d_{23}	r_{12}	r_{13}	r_{23}
Becoming leaders group									
Conscientiousness	4.94/1.12	5.19/1.07	5.28/1.08	.25***	.31***	.10*	.61**	.53**	.67**
Emotional stability	4.85/1.09	4.91/1.05	4.94/1.07	.06	.09	.04	.64**	.56**	.62**
Job role demands	4.49/1.33	4.85/1.22	4.99/1.27	.24***	.33***	.12	.35**	.34**	.55**
Non-leaders group									
Conscientiousness	4.96/1.12	5.00/1.12	5.10/1.17	.05	.16***	.13***	.68**	.64**	.74**
Emotional stability	4.88/1.12	4.96/1.10	4.99/1.10	.07*	.09**	.02	.59**	.57**	.65**
Job role demands	4.31/1.37	4.24/1.32	4.47/1.33	−.05	.11*	.17***	.48**	.40**	.50**

Note. N = 431 for the becoming leaders group and 818 for the nonleaders group. d-coefficients indicate standardized differences in mean level between measurement occasions: positive values signify mean-level increases and negative values mean-level decreases. r-coefficients indicate correlations of a variable between two measurement occasions. T1 = Time 1; T2 =Time 2; T3 = Time 3. *p < .05, ** p < .01, *** p < .001.

Table 11
Results of Latent Growth Curve Models: Study 2

Predictor	Slope of conscientiousness (Model 1), Coefficient (*SE*)	Slope of job role demands (Model 2), Coefficient (*SE*)	Slope of conscientiousness (Model 3), Coefficient (*SE*)	Slope of emotional stability (Model 4), Coefficient (*SE*)
Becoming a leader	.07* (.03)	.17*** (.05)	−.01 (.06)	−.01 (.03)
Intercept of job demands	—	—	−.03 (.04)	—
Intercept of conscientiousness	—	—	−.03 (.04)	—
Slope of job demands	—	—	.52* (.21)	—
Model fit indices				
$\chi^2(df)$	5.33 (6)	40.29*** (6)	55.66*** (21)	2.10 (6)
CFI	1.00	.956	.985	1.00
RMSEA	.000	.068	.036	.000
SRMR	.008	.032	.025	.005

Note. N = 1,249 (431 for the becoming leaders group and 818 for the nonleaders group). Slopes indicate changes and intercepts indicate starting points. Becoming a leader: 0 = nonleaders group, 1 = becoming leaders group. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.
*p < .05, *** p < .001.

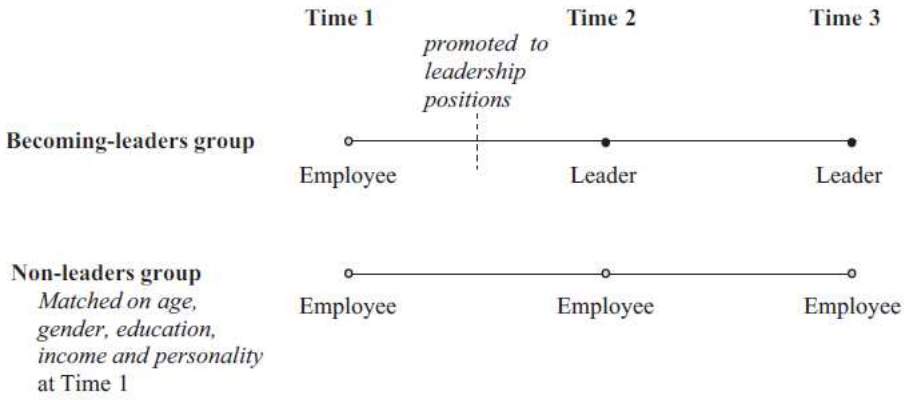

Figure 1. Change of leadership positions for the two groups of participants. Open dots denote a nonleader, employee position; closed dots denote a leadership position. Becoming leaders group and nonleaders group were matched via a propensity score matching on age, gender, education, in- come, and the Big Five personality traits at Time 1.

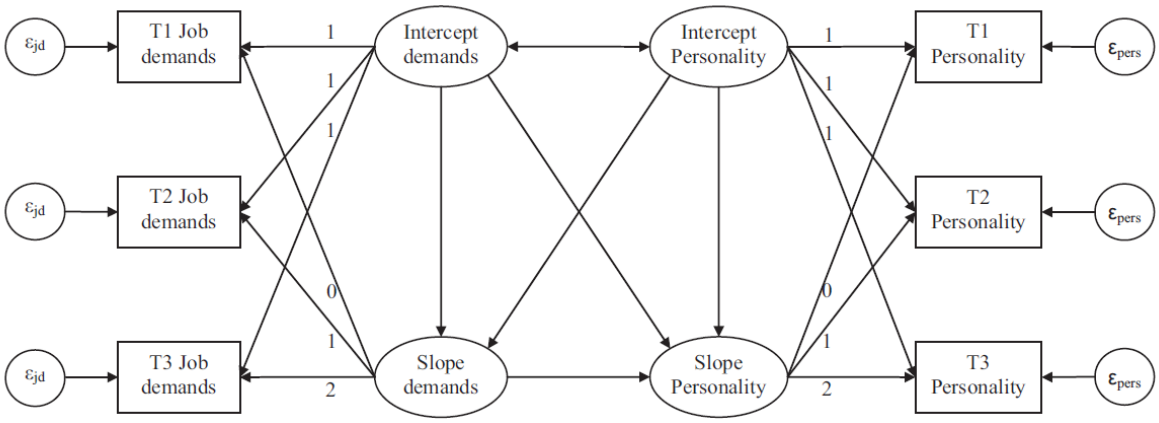

Figure 2. Bivariate latent growth curve model for personality and job role demands. ∑ = residual variance. jd = job demands; pers = personality; T1 = Time 1; T2 = Time 2; T3 =Time 3.

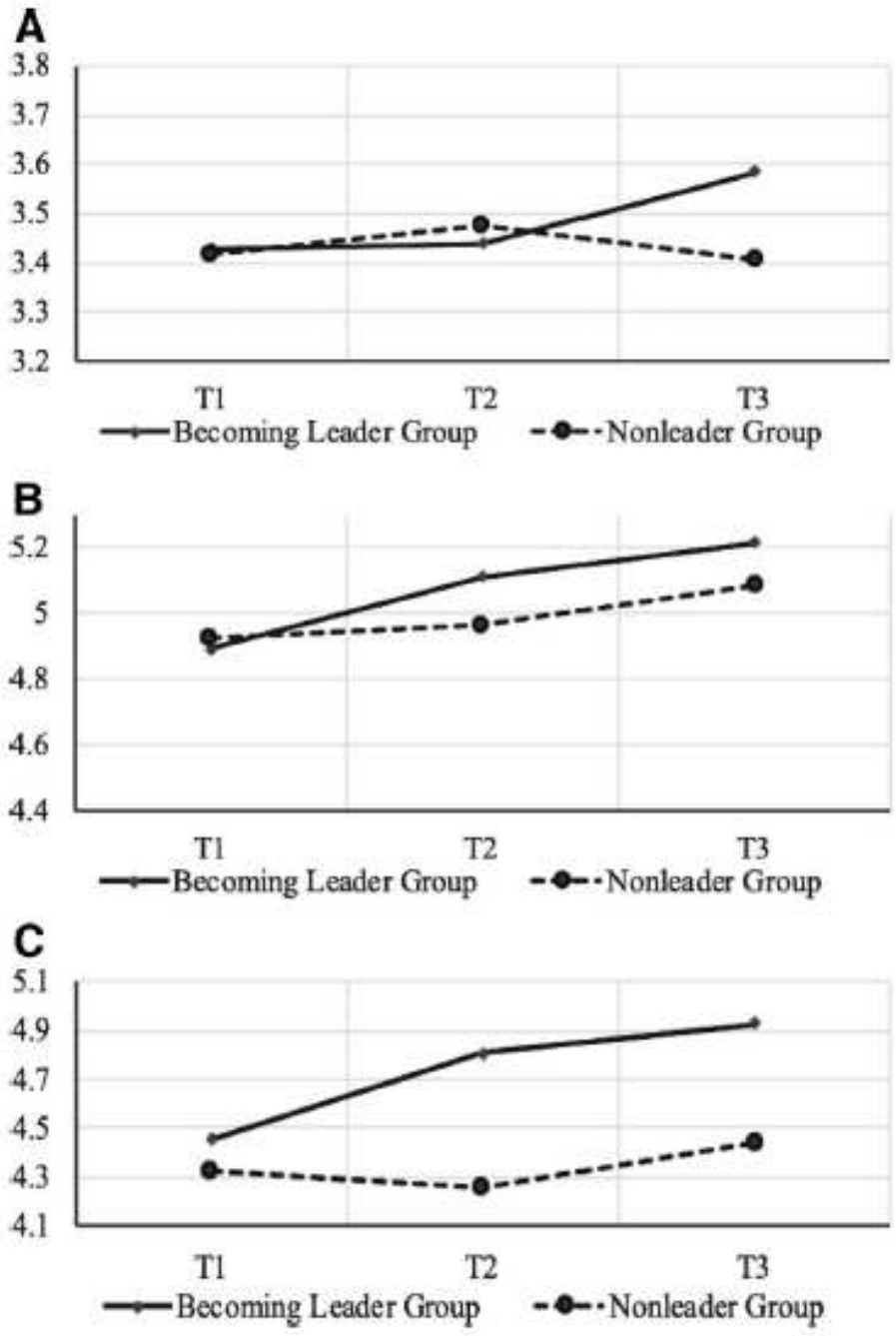

Figure 3. Mean trends for conscientiousness and job role demands (based on raw scores). (A) Mean trends for conscientiousness in Study 1. (B) Mean trends for conscientiousness in Study 2. (C) Mean trends for job role demands in Study 2.