A forgotten antecedent of career adaptability: A study on the predictive role of within-person variability in personality

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\textbf{ABSTRACT}

Several studies have focused on stable personality traits as antecedents of career adaptability, but few have investigated more dynamic aspects of personality in relation to career adaptability. Recent theories on personality such as Whole Trait Theory (Fleeson, 2015) recognize that traits are often aroused in one situation but not in another (Allport, 1937), and that individuals are more or less flexible in responding to different situations. This flexibility is defined as within-person variability in personality. In the present paper we integrate Whole Trait Theory and Career Construction Theory (CCT, Savickas, 2005) – the latter stating that flexibility is a key antecedent of career adaptability – and hypothesize that career adaptability can be predicted by within-person variability in personality descriptions (Lang et al., 2019). In a sample of business administration students (N = 452) we found that, over and beyond effects of average trait levels, within-person variability in personality descriptions positively predicted career adaptability. Our findings have important theoretical and practical implications.

1. Introduction

Contemporary career challenges require a high level of adaptation from individuals (Savickas, 2005; Savickas & Porfeli, 2012). It is therefore not surprising that the career adaptability construct (Savickas, 2005) has gained in popularity in the recent vocational psychology literature (Rudolph, Lavigne & Zacher, 2017). Several studies have focused on personality as an antecedent of career adaptability and have uncovered links between dimensions of the five-factor model (McCrae, 2009) and career adaptability (Rudolph et al., 2017). However, it is noteworthy that almost all of these studies adopted a non-dynamic approach to personality, overlooking individual differences in within-person variability in personality. In what follows, we argue that taking into account within-person variability in personality as an antecedent of career adaptability is in line with Career Construction Theory (CCT, Savickas, 2005). Indeed, the latter states that flexibility is a key underlying characteristic of individuals with high career adaptability. We then present an empirical study testing the link between within-person variability in personality and career adaptability.

1.1. Personality and career adaptability

Career adaptability as a concept is defined as a psychological resource for managing career challenges. It is one of the cornerstones of Career Construction Theory (CCT, Savickas, 2005). CCT describes four central resources of an individual’s career adaptability. First, control is the extent to which one feels he/she has an impact on his/her career. Concern refers to the motivation to tackle career challenges. Curiosity is defined as the tendency to explore and find relevant career-related information. Finally, confidence refers to the feeling of being able to overcome career-related challenges. These resources have been shown to be important antecedents of career success (Rudolph et al., 2017).

CCT posits that underlying career adaptability are traits that reflect a willingness and flexibility to adapt to various contextual demands and constraints – referred to as adaptivity by Savickas (2005). The idea is that specific behavioral tendencies like self-discipline, need for achievement, curiosity, or persistence can enhance individuals’ adaptivity with regard to career challenges, and can facilitate the career adaptation process (Zacher, 2014). As indicators of these behavioral tendencies, many researchers have turned to the five-factor model of personality (Rudolph et al., 2017). Their findings have confirmed that

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all five personality traits underlie adaptivity (Rudolph et al., 2017). Especially, conscientiousness and openness have been found to have the strongest positive correlations with career adaptability (Zacher, 2014, 2016). One way to interpret this is that the challenges that individuals face in managing their career typically require behaviors associated with conscientiousness and openness, such as respectively persistence exploration (Zacher, 2014). Therefore, individuals scoring higher on these traits than other individuals adapt and cope better with career challenges.

However, in the current literature, an important but overlooked aspect of career adaptation is that individuals should also be able to distinguish the specificity of situational demands and adapt their behavioral response accordingly. For example, in terms of conscientiousness, while previous research implies that adopting overall a more conscientious attitude is beneficial, CCT suggests that being selectively conscientious could be an additional advantage. In line with CCT that ascribes a crucial role to individual flexibility, we argue that viewing personality as a dynamic system is essential to understanding and deepening the career adaptation process and thus deserves systematic investigation. In the current paper we aim to fill this gap in the literature.

1.2. Within-person variability in personality

Previous research suggests that having flexible rather than rigid behavioral tendencies is generally adaptive. For example, displaying openness-related behaviors can be adaptive or maladaptive depending on the context. Curiosity, for example, has been linked to adaptive behaviors such as innovative behaviors at work, but also to maladaptive behaviors such as substance abuse (Celik, Storme, Davila & Myszkowski, 2016). This suggests that beyond the average level of openness, flexibility in openness could be an even better indicator of adaptive behaviors. In line with this reasoning Lievens et al. (2018) have shown that flexibility in extraversion, agreeableness, and conscientiousness is positively associated with job performance. Likewise, research on emotional reactions to negative feedback at work suggests that flexibility in emotional reactions to the feedback aids in making a positive impression on managers (Celik, Storme & Myszkowski, 2016).

Flexibility in personality is a relatively old idea that can be traced back to the observation of patients who had symptoms that were more variable than those of other patients, or participants in experiments who were more responsive to manipulations than other participants (Lang, Lievens, De Fruyt, Zettler & Tackett, 2019). Personality theorists have long pointed out that a trait implies a certain consistency of behavior between situations, but that perfect consistency is not possible because behaviors are also influenced by characteristics of situations (Allport, 1937). Hence, some personality theorists have started to consider that the degree of behavioral consistency of an individual across situations could be a personality trait in itself, and thus independent of average trait levels. This idea culminates in the Whole Trait Theory (Fleeson & Jayawickreme, 2015), which suggests that personality should no longer be considered only as a set of stable and invariant traits across situations, but as a set of dynamic traits that can be expressed differently depending on the characteristics of situations (Fleeson & Jayawickreme, 2015). An individual can be characterized by both consistent cross-situational behavioral tendencies (e.g., John is more extraverted than most people across different contexts) and a stable tendency to vary his or her behaviors across situations (e.g., John’s level of extraversion depends on the context more than for most people).

Taken together, in Whole Trait Theory, within-person variability in personality is not considered a mere internal consistency issue, but is seen as a new personality trait in its own right (Lang et al., 2019). In the literature several methods have been reported to capture this trait. One way is to ask individuals to report their personality states at several randomly chosen time points in their daily routines (Sosnowska, Kuppens, De Fruyt & Hofmans, 2019). This method makes it likely that individuals are in different situations when they report their personality states (Lang et al., 2019). Variability in personality states can then be seen as an indication of the extent to which the expression of the personality of an individual is influenced by contextual factors. However, this method is time consuming. Another, slightly less time consuming way is to use situational judgment tests (Lievens et al., 2018). However, a disadvantage of this method is that it requires tailored tests depending on the area of interest. A third and final method, is to derive within-person variability scores from one-shot self-reports on items of traditional personality questionnaires as introduced recently by Lang et al. (2019). The researchers demonstrated that this method provides estimates that are correlated with variability scores obtained with more time consuming methods. Therefore, in the current paper we also rely on this method.

1.3. Career adaptability and within-person variability in personality

Career adaptability, being a form of adaptive functioning in the career management domain, could be expected to correlate with within-person variability in each one of the five traits of the five-factor model. The career adaptation process typically involves various activities (Savickas, 2005) – for example, exploring information about career paths, making career decisions, dealing with career failures, etc.. This means that individuals face qualitatively different situations that are very likely to require specifically adapted behavioral responses, and the behavioral tendencies associated with a given personality trait that are adaptive in one situation, may not be adaptive in another situation. Therefore, an individual who has flexible behavioral tendencies – that is, an individual whose behavior changes depending on the situation – could be expected to handle better the career adaptation process than an individual with rigid behavioral tendencies.

We know from meta-analyses that average trait levels of extraversion, agreeableness, conscientiousness, emotional stability, and openness are all positively correlated to career adaptability (Rudolph et al., 2017). This suggests that most activities involved in the career adaptation process require the behavioral tendencies associated to these five traits. In some situations, however, the same behavioral tendencies could become a handicap. For example, previous research suggests that extraverts are less able to focus their attention and can be more easily distracted than introverts (Blumenthal, 2001). This could be a handicap during for example career exploration days, where the behavioral tendencies of extraversion – that is, chatting, flirting – could distract the individual from taking in important information and instead focus efforts on irrelevant issues, such as entertaining other participants with stories about one’s latest vacation. In the same vein, while high levels of agreeableness and conscientiousness are positively related to overall levels of career adaptability, they are also known to sometimes hinder creativity (Feist, 1998; Reiter-Palmon, Illies & Kobe-Cross, 2009). Creativity being an important ingredient of career adaptation (Peiperl, Arthur, Goffee & Anand, 2002), behaviors associated with agreeableness or conscientiousness could be detrimental to career adaptability in situations requiring creative thinking. Regarding emotional stability, research suggests that there might be career relevant situations in which not high emotional stability, but low(er) emotional stability is adaptive. Notably, research has shown that, while in a negative mood, cognitive processing is actually improved by lower levels of emotional stability, due to congruency effects (Tamir & Robinson, 2004). Thus in situations in which individuals feel bad – for example after a recent rejection for a job – allowing some level of neuroticism might be beneficial to persisting in looking for alternatives, even though lower average trait levels of neuroticism are usually more efficient. Finally, openness has been shown to be associated with tendencies to engage in unethical behaviors at work (Bolton, Becker & Barber, 2010), which can be detrimental to the career adaptation process. In situations in which behaving unethically is tempting, such as
overly exaggerating one's professional experiences, toning down tendencies towards openness could be more beneficial to career adaptability.

Altogether, average trait levels of extraversion, agreeableness, conscientiousness, emotional stability, and openness can all be expected to be positively correlated to career adaptability, because in most situations, these five traits are associated with behavioral tendencies that facilitate career adaptation. In addition, within-person variability in these traits can be expected to be positively associated with career adaptability as well. This is because some situations could call for different behavioral tendencies than the ones that are usually adaptive.

1.4. Study aims and hypotheses

In this research, we aim to investigate the relationship between career adaptability and within-person variability in personality. We hypothesize that career adaptability is positively predicted by within-person variability in personality, over and beyond average trait levels. In our study, within-person variability in personality is operationalized as the intra-individual variability across personality descriptions in a traditional personality questionnaire. Within-person variability in personality descriptions can be estimated with the Trait Variability Tree Model (TVTM, Lang et al., 2019). This model has been introduced to overcome a number of psychometric challenges (see Lang et al. for a comprehensive review of these challenges) and has been successfully applied to personality self-reports to model within-person variability in personality descriptions.

In the present study, we also consider the possibility that career adaptability might be more strongly linked to within-person variability in particular traits, such as conscientiousness or openness, seeing that previous literature has shown that these two traits are more strongly associated with career adaptability than the other personality traits (Zacher, 2014, 2016). Therefore, as a preamble, we investigate the internal structure of IRT variability score to the predictor variables.

2. Method

2.1. Participants

We recruited 452 third year French (from Paris area) business administration undergraduate students (M_{age} = 20.71, SD_{age} = 0.97, ranging from 18 to 25 years; 57.30% of the participants were female). Business administration students are an interesting population because they have professional experience, notably because of the internships that are part of their education. These students tend to be concerned about their career development, and they are likely to have jobs in which career adaptability plays an important role (Tolentino, Sedoglavich, Lu, Garcia & Restubog, 2014). The respondents participated on a voluntary basis. All responses were collected on computer.

2.2. Measures

2.2.1. Big Five Inventory (BFI, John & Srivastava, 1999)

We used the French version of the 44-item Big Five Inventory (BFI, O. P. John & Srivastava, 1999; Plaisant, Courtois, Réveillère, Mendelsohn & John, 2010) to measure personality. We used 5-point Likert scale ranging from 1 (Totally disagree) to 5 (Totally agree). The BFI exhibited acceptable scale-score reliability: Cronbach’s α ranged between 0.70 and 0.84.

2.2.2. Career adaptability (CAAS, Savickas & Porfeli, 2012)

To measure career adaptability, we relied on the French version of the 24-item Career Adapt-Abilities Scale (Johnston et al., 2013; CAAS, Savickas & Porfeli, 2012). The scale assesses four dimensions of career adaptability: Concern, control, curiosity, and confidence – as previously defined in the introduction section. We used 5-point Likert scales ranging from 1 (Not strong) to 5 (Very strong). Cronbach’s α ranged between 0.79 and 0.84, indicating satisfactory internal consistency.

2.3. Procedure

In an attempt to reduce common method bias (P. M. Podsakoff, MacKenzie, Lee & Podsakoff, 2003), we collected the data in two phases separated by 2 weeks. Participants filled in the BFI in a first session, and the CAAS in a second session. Participants who did not fill in one of the questionnaires were removed from the analyses (the drop-out rate was 3.21%).

2.4. Statistical analyses

To estimate average trait levels and within-person variability in personality (referred to as “IRT variability” from here on) we relied on the trait variability tree model (TVTM, Lang et al., 2019). As indicators of the average Big Five trait levels we used the direction estimates as measured by the person estimates of Pseudoitem II. Person estimates for Pseudoitems I and III were used to measure within-person variability. Two models were fitted: One in which IRT variability scores are estimated for each personality content domain, and one in which a single IRT variability score across personality content domains is estimated. To assess the internal consistency of the IRT variability estimate, we relied on the split-half approach to reliability (Lang et al., 2019). See the article of Lang et al. (2019) for more information on the TVTM. The correlation matrix of the estimates of the first model were then subjected to an Exploratory Factor Analysis (EFA) in order to investigate the factor structure of within-person variability in personality.

For the main analyses we used bivariate correlations, as well as a series of hierarchical multiple linear regressions to test our main hypothesis regarding the relationship between within-person variability in personality and career adaptability. To test whether within-person variability in personality has incremental predictive power over and beyond average trait levels when predicting career adaptability, we relied on hierarchical regressions. More specifically, we regressed in a first step each one of the career adaptability scores on the five personality traits (direction), and, in a second step, we added the IRT variability score to the predictor variables.

3. Results

3.1. Internal structure of IRT variability

Correlations between all measures are reported in Table 1. We found that IRT variability scores across personality dimensions were highly correlated (ranging between 0.44 and 0.66), which is in line with previous empirical studies (Lang et al., 2019; Lievens et al., 2018). We then ran an Exploratory Factor Analyses (EFA) to investigate more thoroughly the factor structure of within-person variability in
personality. The scree plot is reported in Fig. 1. Both the Kaiser criterion and a parallel analysis indicated that one factor should be retained. Our findings suggest that within-person variability in personality is independent of personality dimensions. Consequently, in line with previous literature (Lang et al., 2019; Lievens et al., 2018) we estimated an overall IRT variability score. Finally, regarding the internal consistency of IRT variability, we found that the correlation between the IRT variability estimated on the first half of the BFI was strongly correlated with the IRT variability estimated on the second half of the BFI \(r = 0.70\), suggesting satisfactory reliability of the measure.

### 3.2. Main analyses

Because we found a single factor structure for the IRT variability scores, all analyses were conducted with the overall IRT variability scores as predictors of career adaptability. Bivariate correlation analyses showed that overall career adaptability scores were positively correlated with IRT variability, with correlation coefficients ranging between 0.16 and 0.34. Furthermore, each of the four dimensions of career adaptability were also positively correlated with IRT variability, with correlation coefficients ranging between 0.21 and 0.34. The magnitudes of correlations with career adaptability were overall similar to those of the average trait levels (see Table 1).

### Table 1

<table>
<thead>
<tr>
<th>Correlation matrix.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1. Extraversion</td>
</tr>
<tr>
<td>2. Agreeableness</td>
</tr>
<tr>
<td>3. Conscientiousness</td>
</tr>
<tr>
<td>4. Emotional stability</td>
</tr>
<tr>
<td>5. Openness</td>
</tr>
<tr>
<td>6. IRT variability – extraversion</td>
</tr>
<tr>
<td>7. IRT variability – agreeableness</td>
</tr>
<tr>
<td>8. IRT variability – conscientiousness</td>
</tr>
<tr>
<td>9. IRT variability – emotional stability</td>
</tr>
<tr>
<td>10. IRT variability – openness</td>
</tr>
<tr>
<td>11. IRT variability – overall</td>
</tr>
<tr>
<td>12. Concern</td>
</tr>
<tr>
<td>13. Control</td>
</tr>
<tr>
<td>14. Curiosity</td>
</tr>
<tr>
<td>15. Confidence</td>
</tr>
<tr>
<td>16. Career adaptability – Total</td>
</tr>
</tbody>
</table>

Note. \(N = 452\). IRT Variability: Meaningful within-person variability in personality (Pseudoitems I and III).

* \(p < 0.10\); † \(p < 0.05\).

** \(p < 0.01\).

![Fig. 1. Scree plot for the exploration of the factor structure of within-person variability in personality. The solid line at \(y = 1\) represents the Kaiser criterion and the dashed curve shows the parallel analysis reference eigenvalues.](image-url)
4.1. Implications

We then conducted 5 separate hierarchical regressions, to test whether IRT variability has incremental predictive power over and beyond average trait levels when predicting the four dimensions career adaptability, and the overall level of career adaptability. The results of the 5 hierarchical regressions are reported in Table 2. We found that IRT variability has increased predictive value for concern, F(1, 445) = 8.39, p < 0.01, control, F(1, 445) = 13.14, p < 0.01, curiosity, F(1, 445) = 14.69, p < 0.01, and confidence, F(1, 445) = 31.50, p < 0.01, and also for overall levels of career adaptability, F(1, 445) = 24.21, p < 0.01, over and beyond average trait levels.

4. Discussion

Our aim with the present work was to explore the relationship between career adaptability and meaningful within-person variability in personality descriptions. Our findings not only replicated findings of previous studies – that is, that all five personality dimensions predict career adaptability, with conscientiousness as one of the main predictors (Rudolph et al., 2017) –, we also found that individuals with higher levels of within-person variability in personality descriptions tend to report higher levels of career adaptability. Consistent with our expectations, we found positive correlations between within-person variability in personality in each personality trait and overall levels of career adaptability. We also found that all four career adaptability dimensions were positively predicted by overall within-person variability in personality descriptions. Importantly, this was true over and beyond average trait levels. These results enrich Career Construction Theory (Savickas, 2005) by providing evidence for the predictive role of meaningful within-person variability in personality descriptions.

4.1. Implications

Our findings suggest that not only average trait levels contribute to adaptability, but also flexibility in the expression of these traits. Our study thus confirms Savickas’ intuition that the flexibility aspect of career adaptivity is an important antecedent of career adaptability. These findings open a new research agenda for the investigation of the contribution of personality to career adaptability. The fact that behavioral flexibility is associated with career adaptability invites us to think about the process of career adaptation in a more complex way. Indeed, our results imply that the career adaptation process encompasses different types of situations that require different kinds of behavior. We therefore invite researchers to take a closer look at the different types of situations in the process of career adaptation – for example, exploring, making decisions, or dealing with negative feedback. Researchers could analyze more finely the contribution of personality to the career adaptation process, by trying to better understand in which situations a trait is an asset and in which situations it is a liability.

Furthermore, our study also proposes a new tool – the Trait Variability Tree Model (TVTM, Lang et al., 2019) – to advance the resolution of a practical problem, namely predicting career adaptability. Indeed, an important practical implication of our research is that career counsellors can extract – in addition to the classical personality traits of the five-factor model – a sixth trait capturing within-person variability in personality. This trait has incremental predictive power over and beyond the five personality traits. In fact, this additional trait was even a better predictor than most of the traits of the five-factor model of personality for each of the four facets of career adaptability. Our research shows that career counsellors who use personality measures can access a new source of information without adding new questionnaires to their protocols.

Finally, our study also advances the field of personality research by providing new evidence for the predictive validity of within-person variability in personality. It should invite future researchers to investigate this promising new construct in other domains.

4.2. Limitations and future research

Our study has limitations. First, our results do not allow conclusions to be drawn in terms of causality. In our model, we have implied that within-person variability causes career adaptability. However, it is also possible to imagine a reciprocal causality between within-person variability in personality and career adaptability. Behavioral flexibility could strengthen the confidence in one’s ability to manage career challenges, which in turn could strengthen behavioral flexibility. In future research, it might be interesting to conduct a cross-lagged panel analysis on longitudinal data to determine the direction of the causality in order to understand more precisely the nature of the relationship between within-person variability in personality and career adaptability.

Our study found a relationship between within-person variability in personality and career adaptability, but does not provide empirical evidence on the “how” nor on the boundary conditions of this relationship. As shortly mentioned before, one way to study the mechanisms underlying this relationship, would be to break down the career adaptation process into activities (or situations) and then examine the extent to which each personality trait can contribute to success in each activity (or situation). Because previous research

### Table 2

Hierarchical regressions.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Concern</th>
<th>Control</th>
<th>Curiosity</th>
<th>Confidence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Extraversion</td>
<td>.14</td>
<td>.16***</td>
<td>.12**</td>
<td>.20***</td>
<td>.19***</td>
</tr>
<tr>
<td></td>
<td>Agreeableness</td>
<td>–.03</td>
<td>-.07</td>
<td>-.07</td>
<td>-.08</td>
<td>–.01</td>
</tr>
<tr>
<td></td>
<td>Conscientiousness</td>
<td>.22***</td>
<td>.18***</td>
<td>.09</td>
<td>.23***</td>
<td>.22***</td>
</tr>
<tr>
<td></td>
<td>Emotional stability</td>
<td>.11†</td>
<td>.23**</td>
<td>.02</td>
<td>.05</td>
<td>.13†</td>
</tr>
<tr>
<td></td>
<td>Openness</td>
<td>.02</td>
<td>.05</td>
<td>.06</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Step 2</td>
<td>Extraversion</td>
<td>.09</td>
<td>.10</td>
<td>.05</td>
<td>.13*</td>
<td>.11*</td>
</tr>
<tr>
<td></td>
<td>Agreeableness</td>
<td>-.09</td>
<td>-.14†</td>
<td>-.03</td>
<td>-.12†</td>
<td>–.11†</td>
</tr>
<tr>
<td></td>
<td>Conscientiousness</td>
<td>.23**</td>
<td>.19**</td>
<td>.11†</td>
<td>.25**</td>
<td>.23**</td>
</tr>
<tr>
<td></td>
<td>Emotional stability</td>
<td>.14*</td>
<td>.26**</td>
<td>.06</td>
<td>.11</td>
<td>.17**</td>
</tr>
<tr>
<td></td>
<td>Openness</td>
<td>.03</td>
<td>.06</td>
<td>.07</td>
<td>.06</td>
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</tr>
</tbody>
</table>

Note. N = 452. IRT Variability: Meaningful within-person variability in personality (Pseudoitems I and III).

* † p < 0.05.

** † p < 0.01.
suggests that within-person variability in personality is linked to functional flexibility (Lievens et al., 2018), we predict that it will be associated with adaptive behaviors in the different activities of the career adaptation process.

With respect to moderators, it would be interesting to investigate whether the particular method used to measure within-person variability in personality could have an impact on the magnitude of the relationship between within-person variability in personality and career adaptability. As mentioned in the introduction there are alternative approaches to measuring within-person variability in personality (Lang et al., 2019; Lievens et al., 2018; Sosnowska et al., 2019), but in our study we only used one of them. Potential differences in the predictive power of these instruments would have important implications for theory as well as practice, that our current work does not address. Nonetheless, our study makes an important first step in bringing together the most recent personality theories and Career Construction Theory.

References
