

# Understanding the role of personality in explaining L2 learners' DMC disposition

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## The Challenge

The learner characteristics that induce individual-level variability in directed motivational currents (DMCs) have yet to be explored. In particular, the role of personality in explaining individual likelihood of experiencing a DMC remains empirically unresolved. This study addresses this gap by exploring to what extent the five-factor model (FFM) personality traits help explain variations in the DMC disposition.

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## Abstract

Recent years have seen a growing research interest in the notion of directed motivational currents (DMCs) that defines highly intense motivational surges oriented to a much-desired goal of personal significance. However, the learner characteristics that induce individual-level variability in DMCs have yet to be explored. In particular, the role of personality in explaining variations in the DMC disposition remains empirically unresolved. The current study addresses this gap by looking at whether the five-factor model (FFM) personality traits help explain variations in the DMC disposition among 172 Turkish undergraduate students majoring in teaching English as a foreign language (EFL) at a state university in Turkey. Data were gathered using the 50-item version of International Personality Item Pool (IPIP) and the 12-item DMC Disposition Scale. Multiple linear regression analysis showed that personality traits significantly predicted variability in the DMC disposition, together accounting for 42% of the variance. Conscientiousness

and extraversion appeared as the strongest predictors. The findings in general bring preliminary insights into the learner characteristics that underlie individual-level variability in DMCs, as well as having implications in particular for facilitating individual-level DMC practices in the context of second/foreign language (L2) learning.

#### KEYWORDS

directed motivational currents, motivation, personality, vision

## 1 | INTRODUCTION

Multiple studies on second/foreign language (L2) learning have established that individual differences (IDs) are critical in determining the extent and effectiveness of learning an L2 (e.g., Dörnyei, 2009; Ellis, 2012; Nitta & Baba, 2015). A large number of ID dimensions have thus received a great deal of worldwide interest over decades (for an overview, see Dörnyei & Ryan, 2015). Of all the dimensions in focus, L2 motivation is distinguished as being one of the most widely studied one (Dewaele, 2009; Dörnyei, 2005; Ushioda, 2008). Interestingly though, such a robust body of literature largely failed to address and resolve the question of how to sustain L2 motivation over time. In spite of this long-standing lacuna, there is now an emerging consensus that research on “directed motivational currents (DMCs)” may help overcome the challenges associated with sustainable learning motivation in L2, inasmuch as DMCs represent “the *optimal form of engagement* with an extended project” (Dörnyei et al., 2016, p. 33, original emphasis). The significance of DMC research lies in the premise that the basic components and characteristics underlying DMCs can be used as a basis for creating motivational interventions in the classroom to facilitate long-term learning (Dörnyei et al., 2016). Accordingly, the outcomes from DMC research can offer valuable insights into how we can better manage L2 learning processes in ways that ensure a high level of concentration and commitment.

However, notwithstanding its potential significance, DMCs represent a state-of-the-art model being discussed only recently and thus there remain gaps in our knowledge that seem prominent. One crucial domain of study that remains untapped in this regard is the learner characteristics that provoke individual-level variability in DMCs. The lack of attention on this line of research is unfortunate because DMCs stand out as “a personal journey that is central to the sense of self” (Dörnyei et al., 2015, p. 101) and “the motivational surges of energy characteristic of DMCs are uniquely constituted and follow highly individual trajectories” (Henry et al., 2015, p. 342). These arguments conspicuously indicate that a DMC is not a monolithic but a multifaceted motivational phenomenon operating in different ways at personal level, therefore justifying the need to scrutinize which personal factors may underlie such variability in the DMC experiences. Research into this area may serve to unveil the personal factors that may hinder or promote the efficacy of the DMC experiences, which in turn can provide implications for how to facilitate the pedagogical use of DMC-type motivation in general.

Motivated by the above considerations and to help contribute to the knowledge base on DMCs, this study took the initiative in exploring the learner characteristics that underlie

individual-level variability in DMCs, with a particular focus on examining to what extent variations among L2 learners in relation to their DMC disposition could be explained by their personality traits based on the five-factor model (FFM) of personality. There are considerations that certain personality traits can explain readiness for the DMC experiences. However, as will be elaborated later, such discussions lack direct empirical evidence from the DMC populations. This study has therefore the potential to shed some light on whether individuals with certain personalities are better candidates to experience DMCs than others. Understanding such variations may also offer novel avenues of how we can promote the efficacy of individual-level DMCs based on the personality-informed suggestions. It is worth noting that this study is the first to bring insights into DMCs through the lens of personality psychology.

## 2 | BACKGROUND LITERATURE

### 2.1 | Underlying features of DMCs

The DMC as a novel theory of learner motivation has been proposed to account for intense and enduring motivational surges galvanized “when a variety of time and context-related factors come together in an individual to prompt a firm decision to pursue a goal/vision which is considered personally significant, highly relevant to one’s desired identity and emotionally satisfying” (Dörnyei et al., 2014, p. 27). There exist a core set of features that are indispensable to all DMC experiences: (a) goal/vision-orientedness, (b) a salient facilitative pathway, and (c) positive emotionality.

The DMC construct was generated as “a direct extension of the vision concept” (Muir, 2016, p. 26) based on the theory of L2 Motivational Self System (Dörnyei, 2005). Vision calls for building a clear mental image related to the achievement of a personally significant goal (Dörnyei, 2020). The motivational value of a vision lies in its capacity to help learners show perseverance in pursuing their objectives and some studies (e.g., Mackay, 2014; Magid, 2014; Sampson, 2012) proved that vision-informed pedagogies serve a useful purpose in improving L2 learners’ motivational disposition in general (for a fuller discussion on mental imagery and visualization, see Dörnyei & Kubanyiova, 2014). Accordingly, the directedness of a DMC points out the presence of a well-defined visionary goal that those captured by a DMC seek to achieve with an exclusive type of dedication. Thus, *goal/vision-orientedness* is a vital precondition for a DMC to take hold. The initial motivational energy that activates DMCs is maintained only if combined with a concrete facilitative structure. In this regard, the second hallmark of DMCs is the deployment of a *salient facilitative pathway*, which is made up of three main components: (a) an identifiable start/end point, (b) regular progress checks through proximal subgoals, and (c) recurring behavioral routines (Dörnyei et al., 2016).

Rather than arising by chance, a DMC embarks on its journey with the exploitation of a triggering stimulus at a particular time when a set of cognitive and contextual factors coexist (Henry et al., 2015). The initial motivational surge is subsequently sustained through the activation of a set of proximal subgoals, the successful completion of which not only provides further motivational power to proceed toward an end-purpose, but also functions as a regular progress check. The individuals caught up in a motivational current also commence to engage in new behavioral routines. Following its launch, a DMC can quickly take the form of a “motivational autopilot” in which newly-formed routine practices turn into an inherent

element of the DMC construct and are therefore performed without any volitional control (Dörnyei et al., 2014, p. 14). In sum, the operation of a salient facilitative pathway has a central role in preventing the intensity of DMCs from petering out.

The third major component to be introduced, alongside goal/vision-orientedness and a facilitative structure, is *positive emotionality*. As mentioned above, the achievement of a distal purpose entails first the completion of smaller tasks adapted on the way. However, these proximal subgoals are not pursued for the sake of their intrinsic value; but conversely, all the tasks, no matter how boring and challenging they might be, are always carried out with satisfaction since “they transport an individual toward a highly valued end-goal” (Dörnyei et al., 2016, p. 18). Muir and Dörnyei (2013) underlined the importance of positive emotionality by noting that it “allows mundane activities related to each subgoal to take on increased levels of significance, and for the strength of the overall vision to permeate throughout the entirety of the DMC” (pp. 365–366). In brief, DMCs are intense and goal/vision-driven motivational experiences during which a facilitative pathway is inaugurated within a positive emotional atmosphere that energizes the ensuing motivational progression.

## 2.2 | Previous studies on DMCs

Subsequent to preliminary conceptual works produced by Dörnyei and his colleagues (Dörnyei et al., 2015; Muir & Dörnyei, 2013), an emerging array of publications with different foci have begun to offer further insights into this unique type of motivational phenomenon. Albeit as yet limited in number, it seems plausible to examine the previous studies on DMCs under four main strands of research. While some researchers aimed at validating the above-mentioned tripartite structure of the model (Henry et al., 2015; Ibrahim, 2016a; Safdari & Maftoon, 2017; Zarrinabadi & Tavakoli, 2017), some others were concerned with more specific themes such as the affective properties that characterize DMCs (Ibrahim, 2016b, 2020), parameters for triggering DMCs (Ibrahim, 2017), patterns of change in the motivational and affective states in DMCs (Sak, 2020; Selçuk & Erten, 2017), and the context-related factors that influence the operation of DMCs in L2 classrooms (Sak, 2019). Besides, another set of studies discussed the relation of DMC-type motivation with sociodemographic features (Ghanizadeh & Jahedizadeh, 2017; Muir, 2016). It is worth noting here that although the DMC model is popularized with its potential to inform motivational sustainability in L2, only a handful of studies directly considered the practical application of the model. In relation to this point, we can cite only two published accounts, one of which set out to explore the conditions facilitative of DMC group projects (Ibrahim & Al-Hoorie, 2019), and the other one examined the feasibility of a specifically tailored curriculum to activate DMC states (Watkins, 2016). In addition to these four lines of inquiry, Zarrinabadi et al. (2019) set the stage for a new research agenda by scrutinizing the effects of the DMC experiences on a number of psychological variables including learners’ self-concept, self-confidence, autonomy, and willingness to communicate.

What emerges from the above review is that despite the growing diversity of studies, research on DMCs is still in its infancy and there is still room for future contributions. In this regard, one crucial domain of study that remains largely unexplored concerns the individual-level variability in DMCs. In a recent paper, Peng and Phakiti (2020) argued that the possibility whether individuals may experience different levels of DMCs while engaging in the same language task remains open to know. Similarly, Sak (2019) concluded that examining the role

of IDs in shaping one's DMC experience is a promising area of research and has the potential to unveil the parameters that induce individual-level variability in DMCs. In the same vein, Safdari and Maftoon (2017) suggested looking for possible “*varieties of DMCs in different individuals, contexts, and communities*” (p. 52, emphasis added). In spite of such growing concerns that point out the need for a greater focus on the individual-level variability in DMCs and the source of such variability, there exists no such attempt reported up to now. This oversight, in turn, has left one question hanging in the air: In what ways and to what extent do personal factors cause variability in the DMC experiences? This so-called variation can occur either as regards the intensity and duration of DMCs, or in terms of predisposition to experience such motivational surges. Given that the parameters differing individuals are manifold, variability in DMCs could be induced by a complex array of reasons, one of which could be personality characteristics. Based on the findings of previous “flow” research, Dörnyei et al. (2016) argued that certain personality characteristics may account for variations in the DMC disposition, which is elaborated below.

### 2.3 | Personality and peak motivational experiences

Early examples of research into peak motivational experiences trace back to Csikszentmihalyi's (1988, 1990) flow theory. Flow, as Dörnyei and Ushioda (2011) put it succinctly, denotes “the optimal task experience” (p. 94). Flow and DMCs are literally polar opposites in terms of their durations and source of pleasure, the former being of relatively short-term and its emergence being taking place only if the task involved is intrinsically rewarding. Despite such variations, both phenomena are characterized by a heightened state of engagement in activities. A widely held view is that “autotelic personality” plays an instrumental role in allowing individuals to get into a state of flow. Autotelic personality embodies a number of metaskills and competencies that are exemplified by “a general curiosity and interest in life, persistence, and low self-centeredness, which result in the ability to be motivated by intrinsic rewards” (Nakamura & Csikszentmihalyi, 2002, p. 93). However, research into autotelic personality has started only recently and thus there is not much research confirming the role of this personality type in increasing the flow disposition, with only a few exceptions (e.g., Baumann, 2012; Ross & Keiser, 2014; Teng, 2011).

Such scrutiny on the personality correlates of the flow disposition has recently provoked discussions on how motivational currents may relate to the personality characteristics. Notably, there seems to be a growing consensus that personality traits identified as the correlates of the flow disposition could also be of relevance in the context of DMCs (see Muir, 2020; Muir & Gümüş, 2020). Based on the findings documented by flow research, Dörnyei et al. (2016) put forward that involving in a project with a focused, positive, and self-disciplined attitude might serve as a signal of readiness to experience DMCs. The authors thereby indicated potential parallels between the flow and DMC constructs in relation to their links with the personality variables. However, the argument that flow is identified by an ephemeral and narrow-scoped motivational engagement in comparison with DMCs (Dörnyei et al., 2016) seems to suggest that to ascertain the personality correlates of the DMC disposition, a direct empirical analysis with the DMC populations is needed. In light of the research basis specified below, Big-Five personality traits seem promising to bring illuminative insights on this empirically unresolved issue that suffers from a lack of clarity.

## 2.4 | The FFM of personality

The FFM classifies personality according to five broad measures, the initial letters of which make up the word “OCEAN.” Openness to experience refers to being curious, adventurous, and imaginative. Conscientiousness is characterized by being success-oriented, persistent, and diligent. Extraversion relates to the extent to which an individual is outgoing and social. Agreeableness describes those who are prone to be kind and friendly toward others. Finally, neuroticism implies a tendency to feel anxious, depressed, and shy. A rich body of empirical work assessed the feasibility of the model (for an overview, see John et al., 2008), and provided strong confirmation that it captures well the basic facets of personality. As mentioned by Dörnyei and Ryan (2015), however, there is a dearth of personality studies within the domain of L2 research. Then the question arises: What empirical evidence does indicate the potential of the Big-Five model to explain variations in the DMC disposition? Earlier studies outlined below that used this personality construct in motivation research, albeit not necessarily in the L2 motivation context, appear to suggest some promising possibilities for the current study.

Referring to trait variables in the Big-Five model, De Raad and Schouwenburg (1996) postulated that extraversion, conscientiousness, and openness to experience are of greater pedagogical value. Endorsing this remark, a review of the literature identified a set of studies documenting evidence of links between the aforementioned traits and various motivational orientations. Busato et al. (2000), for instance, reported that achievement motivation has a positive correlation with extraversion, conscientiousness, and openness to experience. In the same vein, De Guzmán et al. (2003) disclosed that conscientiousness and extraversion are positively related to achievement motivation. Besides, Komarraju and Karau (2005) found evidence of an inverse correlation of avoidance motivation with conscientiousness and openness to experience. Similarly, conscientiousness and openness to experience were reported to correlate positively with intrinsic motivation (Kaufman et al., 2008; Komarraju et al., 2009), which implies that those who tend to be more disciplined and display intellectual curiosity are likely to chase inherent satisfaction. In addition, conscientiousness and extraversion were found to be positively related to extrinsic and intrinsic motivation (Clark & Schroth, 2010). Arguably, extraverted and conscientious behaviors seem to have the potential to contribute to the motivational gains in general and this may also be the case for the DMC experiences. Overall, the available literature suggests some potential influences of personality on diverse motivational orientations and prior research yielded limited but encouraging proof to posit that openness to experience, extraversion, and conscientiousness could be ideal to predict variability in the DMC disposition. Nevertheless, this study involved the totality of the Big-Five personality traits in the data set in the hope of providing a much wider picture of the issue under scrutiny.

## 3 | THE STUDY

The evidence reviewed thus far indicates that whether personality traits can explain variations in the DMC disposition still constitutes an unexplored research terrain and what we know about this intriguing question is limited. With this in mind, the present study is meant to fill a gap in our knowledge by exploring the extent to which Big-Five personality traits can explain

variations in the DMC disposition among Turkish EFL learners. The following two research questions were addressed in the study:

1. Is there a relationship between learners' DMC disposition and their personality traits based on the FFM of personality?
2. To what extent can the variability in learners' DMC disposition be predicted by dimensions in the FFM of personality?

Note that although the central purpose of this study was to consider the predictive role of personality on the DMC disposition for which running a regression analysis is methodologically sufficient (RQ2), the researcher opted for conducting a priori correlational analysis (RQ1) following the suggestion of Plonsky and Ghanbar (2018). In doing so, the aim was to gain a priori knowledge of the relationships under investigation.

## 4 | METHOD

### 4.1 | Setting and participants

Participants, ranging in age from 19 to 23 years ( $M = 20.60$ ;  $SD = 1.38$ ), were a total of 172 Turkish undergraduate students (Female: 102, 59.3%; male: 70, 40.7%) enrolled in an English as a foreign language (EFL) teacher education program at a large state university in Turkey. The sample was a synthesis of freshmen (17.4%,  $n = 30$ ), sophomores (40.2%,  $n = 69$ ), juniors (17.4%,  $n = 30$ ), and seniors (25.0%,  $n = 43$ ). The survey size was deemed sufficient given the number of the independent variables ( $n = 5$ ) involved in the analysis (Tabachnick & Fidell, 2013). The participants were getting trained to become professionally qualified EFL teachers and they had long been committed to mastering English. At the time of the data collection, 22.1% of the participants ( $n = 38$ ) reported that they have been studying English for 3–5 years, 62.8% ( $n = 108$ ) for 6–8 years, and 15.1% ( $n = 26$ ) for 9–11 years. All participants self-reported having a DMC experience in their language learning history.

The selection of the participants involved two steps (see Appendix A). First, 468 participants (female: 287, 61.3%; male: 181, 38.7%) were given a brief description of DMCs and they were asked to indicate with YES or NO if they have experienced (or currently experiencing) this type of motivation to a similar intensity in their language learning history. This initial step made it possible to distinguish potential DMC cases. In the second step, 172 subjects who self-reported having a DMC experience were retained for the following analytical procedures. Such a step-wise approach was guided by Muir (2016) who isolated first a particular DMC group to explore their DMC disposition. Muir (2016) noted that:

The step of isolating participants who had experienced this type of motivation to a similar level of intensity was a key to distilling true DMC experiences, and participants who self-selected as to a similar level of intensity were earmarked for inclusion in the DMC group (p. 137).

Following the same reasoning, the current study identified first a potential DMC group in the data set and the research data came from this particular sample.

## 4.2 | Instruments

“DMC Disposition Scale” developed by Muir (2016) was used to measure the participants’ DMC disposition. The scale consists of 12 items based on a 5-point Likert type response format, from “strongly agree” to “strongly disagree.” Each item is descriptive of a particular facet of the DMC model. The scale was originally devised to understand individuals’ DMC disposition in general rather than being specifically designed to assess the DMC disposition in the language learning context. In order for results to bear relevant insights applicable to L2 pedagogy, the participants were initially familiarized with the identifying features of DMCs through an archetypical example that shows how DMC-type motivation manifests itself in the language learning context. The participants were then instructed to respond to the items on the basis of such descriptive information.

Each of the five personality dimensions was gauged using “International Personality Item Pool” (IPIP; Goldberg, 2001). This well-established personality inventory consists of 50 items addressing typical behaviors and reactions answered on the basis of a 5-point Likert scale, ranging from “very accurate of me” to “very inaccurate of me” (see Appendix B). Measured via Cronbach’s coefficient alpha (Cronbach, 1951), the reliability estimates of both the Big-Five questionnaire and the DMC disposition scale are given below in Table 1. The instruments were found to yield a strong internal consistency based on the 0.70 cut-off point for Cronbach’s alpha (Hair et al., 2010), except for that of the neuroticism subscale. All data collection instruments used in the present study can be freely downloaded on the IRIS Database; [iris-database.org](http://iris-database.org).

## 4.3 | Data collection and analysis

Upon receiving ethical approval, the data were collected during the spring semester of 2018–2019 academic year with a quantitative survey methodology using a convenience sampling. Paper-and-pencil-based questionnaires were administered by the course instructors during regular class hours, the completion of which lasted up to 20 min on average. Data obtained from the responses were analyzed descriptively by means of IBM SPSS 21. Descriptive statistics were used to characterize the DMC disposition, personality traits, and demographic variables. After the assumptions of linearity, normality, and absence of outliers were satisfied in the data set, Pearson’s correlation coefficients were computed to discover the possible relationships among the variables under scrutiny. Finally, multiple linear regression analysis was

TABLE 1 Reliability estimates for the Big-Five questionnaire and the DMC disposition scale

Instruments and sub-scales	Number of items	Mean	Standard deviation	Cronbach’s $\alpha$
Big-five total	50	157.6337	18.0192	0.78
Extraversion	10	33.0254	9.6310	0.89
Openness	10	30.8361	10.1483	0.93
Conscientiousness	10	32.5756	6.3848	0.75
Neuroticism	10	29.4775	5.8624	0.69
Agreeableness	10	31.7191	9.2032	0.91
DMC Disposition	12	35.0094	11.5882	0.94

Abbreviation: DMC, directed motivational current.

run to see if personality traits could predict the DMC disposition. The underlying assumptions of multiple linear regression analysis were fully checked with an eye toward making valid inferences from the sample. The assumptions of linearity, normality, independence, and homoscedasticity of residuals were all held true for the regression model. Besides, no multicollinearity was identified in the data and there was no multivariate outlier biasing the model.

## 5 | RESULTS

The analysis of Pearson's correlation coefficients, as shown below in Table 2, revealed that personality traits, except for agreeableness, correlated positively with the DMC disposition. Among the components, the DMC disposition had the strongest positive correlation with conscientiousness,  $r = .516, p < .001$ , while extraversion was found to show a moderately strong positive correlation,  $r = .475, p < .001$ . In addition, the DMC disposition showed weak positive correlations with openness to experience and neuroticism, but these correlations failed to reach significance ( $r = .016, p > 0.01$  and  $r = .088, p > .01$ , respectively). Results also indicated a weak inverse nonsignificant correlation between the DMC disposition and agreeableness,  $r = -.120, p > .01$ . Based on the novel domain-specific (L2) threshold criteria formulated by Plonsky and Oswald (2014, p. 889), the correlation cut-off values were set as follows: Coefficients close to 0.25 (weak), 0.40 (moderate), 0.60 (strong).

The multiple linear regression analysis was conducted to find out whether personality traits could predict variability in the participants' DMC disposition. The results indicated that the full model accounted for 42% of the variance in the DMC disposition scores ( $R^2 = .42$ , adjusted  $R^2 = .40$ ), with conscientiousness as being the strongest predictor ( $\beta = .47, t = 6.28, p < .001$ ), followed by extraversion as the second strongest predictor ( $\beta = .42, t = 6.43, p < .001$ ). The scrutiny of ANOVA model as a whole, which includes predictor variables and nonsignificant factors as well, was also significant,  $F(5, 16) = 23.61, p = .001$ . The individual predictors were examined further and indicated that neuroticism was a significant negative predictor in the model ( $\beta = -.19, t = -2.87, p < .005$ ). Furthermore, the findings revealed that openness to experience did not contribute significantly to the regression model ( $\beta = .10, t = 1.53, p = ns$ ), neither did agreeableness ( $\beta = .10, t = 1.33, p = ns$ ) (Table 3).

TABLE 2 Correlations between the Big-Five personality traits and the DMC disposition

Variables	1	2	3	4	5	6
Openness	1					
Conscientiousness	-0.092	1				
Neuroticism	0.207*	0.302**	1			
Agreeableness	0.484**	-0.225*	-0.308**	1		
Extraversion	-0.292**	0.392**	0.435**	-0.497**	1	
DMC disposition	0.016	0.516**	0.088	-0.120	0.475**	1

Abbreviation: DMC, directed motivational current.

\*Significant at  $p < .01$ .

\*\*Significant at  $p < .001$ .

## 6 | DISCUSSION

The present study investigated the role of personality in explaining variations in the DMC disposition among 172 Turkish EFL learners. The ensuing paragraphs discuss the results in relation to our current knowledge, with reference to what we have learned from personality psychology and flow research. This practice is essential given the lack of a direct empirical basis in the DMC literature with which to inform the discussion. Note that the correlation results are discussed more briefly compared with those of regression, as the central focus of this study is on the latter.

As regards the first research question, correlation analysis revealed that extraversion and conscientiousness are positively and significantly related to the DMC disposition. This finding was expected not only in light of the past literature on the link of these two personality traits with motivational orientations (e.g., Busato et al., 2000; Clark & Schroth, 2010; De Guzmán et al., 2003), but also considering the basic constituents of DMCs. As detailed before, goal-orientation and a pervading sense of well-being are essential principles in the architecture of DMCs. Such a description is in perfect line with the properties of extraversion and conscientiousness in the sense that positive affect has been consistently reported as a central pillar in extraverted behavior (e.g., Giluk, 2009; Lucas & Fujita, 2000) and goal-directed thinking has come to be identified as one of the salient features of conscientiousness (e.g., Boyce et al., 2010; Dewaele, 2012a). It was not therefore surprising to see extraversion and conscientiousness correlating strongly with the DMC disposition. The weak nonsignificant correlation between neuroticism and the DMC disposition was another anticipated result. The possible reason for this poor correlation may rest on the common view that individuals high in neuroticism are least likely to activate novel learning avenues due to their chronic failure to use coping strategies (Major et al., 2006). DMCs go beyond usual motivational practices with their exclusive goal-driven nature that entails going after a personally valuable goal in a highly focused manner. This search for achievement calls for maintaining learning progress over time by continuously exploiting and extending opportunities to maximize achievement outcomes, which is something neurotic learners may not afford with ease.

The nonsignificant correlation between openness and the DMC disposition run contrary to expectation. While we may argue that openness to experience is not necessary for anyone to experience a DMC given its not-so-frequent nature, the tenuous link here might also be attributed to the fact that openness is commonly acknowledged as the most multifaceted personality trait generating largely inconsistent and inconclusive results across study contexts, as

TABLE 3 Multiple linear regression analysis and coefficients

Model	Coefficients				
	Variables	<i>B</i>	$\beta$	<i>t</i>	Sig.
	Conscientiousness	0.65	0.47	6.28	0.001
	Extraversion	0.57	0.42	6.43	0.001
DMCs	Neuroticism	-0.38	-0.19	-2.87	0.005
	Openness	0.11	0.10	1.53	0.128
	Agreeableness	0.12	0.10	1.33	0.183

Abbreviation: DMC, directed motivational current.

repeatedly stressed in the literature (e.g., De Raad & Van Heck, 1994; Somer & Goldberg, 1999). Accordingly, the surprising result concerning openness could be partly explained by reference to past conclusions that are somewhat equivocal. Finally, the analysis found a nonsignificant negative correlation between agreeableness and the DMC disposition, tentatively suggesting that higher agreeableness scores might be indicative of a nollition to engage in the DMC practices. Taken together, bearing in mind the caveat that “correlation does not equal causation,” it is misguided to suggest definite causality among the variables under scrutiny, yet the overall correlation results seem to suggest that conscientiousness and extraversion are likely to emerge from the regression model as the prime predictors of the DMC disposition.

The findings from the second research question revealed that the regression model with all predictors accounted for a significant proportion of the variance in the DMC disposition scores (42%). Conscientiousness and extraversion were identified as the most potent predictors, the former receiving the greatest weight in the model. This finding is conceivable because DMCs represent goal-directed motivated actions necessarily leading learners toward being achievement-oriented. Therefore, displaying ambitious, persistent, and disciplined behavior with a success-oriented mindset, namely being conscientious, is innate within the goal-driven nature of DMCs. Besides, the strong relationship found here between conscientiousness and the DMC disposition resonates well with the previous flow research where conscientiousness (Ross & Keiser, 2014; Ullén et al., 2012), the need for achievement (Baumann, 2012), and persistence (Teng, 2011) were found to be positively related to flow disposition. What this tells us is that despite having some distinctive features, flow and DMC phenomena show a remarkable similarity in terms of being suited for populations high in conscientiousness. This finding implies as well that limited conscientiousness is likely to bring adverse consequences in initiating and sustaining such peak motivational behaviors. A low level of conscientiousness may arguably lead to procrastination, indetermination, and neglect, which altogether may pose constraints in getting learning benefit from the DMC practices. Learners with low levels of conscientiousness may thus suffer from behavioral inhibition and a lack of motivational investment when involved in the DMC practices.

Extraversion emerged as the second most explanatory variable of the DMC disposition, suggesting that action-oriented learners who seek out opportunities for enjoyment and social interaction, as well as those who love variety and novelty are in a good position to excel in the DMC practices. It seems that one perspective can best explain this association. The close link between extraverted behavior and positive mood (Stafford et al., 2010) implicates that extraversion fits well with the affective component of DMCs. It is not unwarranted, therefore, to qualify extraverts as innately more predisposed than others to retain and amplify radiated positive emotional atmosphere in DMCs. This may further imply that even in case the progress toward DMC-related objective is slow or insufficient for any reason, extraverts' general positive look on life may still promote the sense of well-being in the face of challenges and help mitigate the risk of a decline in the motivational intensity of their DMCs. Besides, as was the case with conscientiousness, the predictive strength of extraversion on the DMC disposition aligns with evidence from flow research. Personality psychology often reports enthusiasm (Batey & Hughes, 2017), and novelty-seeking (Poropat, 2015) as closely related to extraversion. Prior research found novelty-seeking as one of the correlates of flow disposition (Teng, 2011), and similarly, Dewaele (2015) argued that high levels of enthusiasm predispose learners as being more susceptible to the flow experiences. These accounts allow for the conclusion that extraversion holds much promise for predicting the DMC and flow disposition.

The regression analysis found neuroticism as a negative predictor, implying that negative neuroticism scores might be suggestive of higher DMC disposition. This line of reasoning makes sense from a DMC perspective as certain properties of low neuroticism seem to be a necessary precursor for a durable DMC experience. Given that behavioral manifestations of low neuroticism typically include emotional stability, tranquility, and gladness (Dewaele, 2012b), individuals low in neuroticism presumably better navigate life challenges and show a decisive commitment to withstand subversive feelings. This is where the finding proves meaningful as such abilities help lessen hardships that may appear during the DMC processes. What is meant by “hardships” is occasional motivational fluctuations that may arise in DMCs when, for example, insufficient feedback on the current level of progress toward an end-purpose undermines the sense of improvement or when ill-conceived proximal tasks unable to contribute much to the motivational progression. This said, the above given qualities of being low in neuroticism seem well-suited for facilitating efforts to overcome such temporary setbacks in the DMC states. Particularly notable is that while correlational data showed a positive but non-significant effect for neuroticism, it turned out to be a significant negative predictor in the regression equation. The same was also true for agreeableness results. This suggests that neuroticism and agreeableness might affect the DMC disposition through the other Big-Five components. Such disparity across analyses regarding the direction and magnitude of the relationships is most likely due to a suppression effect which occurs in linear combinations. However, as regression analysis fails to define suppressor variables (Ozdemir, 2015), perplexing results concerning neuroticism and agreeableness could be clarified by complementary statistical tests, such as commonality analysis (Seibold & McPhee, 1979). This issue goes beyond the scope of the current study.

Openness and agreeableness did not prove significant for the prediction of the DMC disposition, both explaining only a negligible proportion of the total variance (10%). Given that openness is described, using Dewaele's (2012a) words, as a “proactive seeking and appreciation of experience for its own sake as well as a willingness to explore the unfamiliar” (p. 47), people high in openness are expected to have a general preference for novel stimuli, thus being more tolerant of ambiguity and uncertainty. This said, openness seems ideal to predict the propensity for complex, idiosyncratic practices such as DMCs, but evidence from the analyses failed to justify this premise. Three reasons may elucidate this unexpected result. The first may be that, as stated before while discussing correlation results, openness is rather notorious for its anomalous nature, which is evident from the conflicting results of the prior work. The intricate nature of openness may therefore give rise to elusive results at times, as occurred in the present study. As suggested by an anonymous reviewer, it may also be the case that the nature of openness being more on the personal level (i.e. seeking pleasure and self-satisfaction) may not fit in well with the goal-driven nature of DMCs, thus possibly explaining its low predictive value.

The third reason may have to do with the use of self-selection sampling, which may have reduced the representativeness of the sample and thus possibly generating some skewed findings that do not reflect the actual tendencies of the population. As for agreeableness, it seems that the motives underlying agreeable behavior impair mental and affective mechanisms that are essential for galvanizing motivational surges. Agreeableness is identified by an enduring struggle for seeking unity and integrity with others (Allen & DeYoung, 2017; Nettle & Liddle, 2008). This sense of altruism, however, seems to interfere with the highly personalized process of DMCs whose successful operation inherently builds upon one's own repertoire of

inner motivational resources and self-capacities. Thus, autonomous status of DMCs may explain why agreeableness did not become predictive of the DMC disposition.

Overall, the above analyses, which imply the supremacy of conscientiousness and extraversion to create a more conducive climate for retaining motivational momentum in the DMC practices, suggest that personality factors might either contribute to or hinder the efficacy of individual-level DMCs in the context of L2 learning. By extension, it seems fair to argue that all L2 learners, regardless of their personality characteristics, may achieve more motivational gains from the DMC experiences if guided to engage in practices reflecting conscientious and extraverted behavior, as discussed below.

## 6.1 | Implications for the individual-level DMCs

Detailed in the above discussion, the insights offered by the present study may serve pedagogical purposes to maximize learning benefits in the individual-level DMC practices in the context of L2 learning. DMC as an individual-level construct has subsequently been extended to encompass group-level motivational behavior. Dörnyei et al. (2016) argued that DMC-like experiences could be created in L2 classrooms at the collective level through intensive group projects involving the key features of the DMC construct, thus serving as a promising catalyst to motivate groups of learners. It is important to note that the implications drawn from the current study cannot be applied to the DMC group projects because individual and group-level DMCs are different constructs that involve fundamentally different psychological processes (see chapter 8 and 9 of Dörnyei et al., 2016, for details on the DMC group projects and their differences with the individual-level DMCs). Thus, the ensuing personality-informed suggestions may apply only to the individual-level DMCs.

First and foremost, the results underscore the importance of finding proactive ways in which the DMC-related activities raise conscientious behavior. Thus, it could be of benefit if learners are engaged in the DMC-related practices that demand time-management, daily-planning, punctuality, and attentiveness. More specifically, it seems viable to propose that learners would benefit from assigning specific duties for themselves with deadlines, as well as encouraging themselves to keep track of a to-do list and put a checkmark on items as completed. This set of strategies can potentially promote self-regulation, self-discipline, and a sense of fulfillment, which in turn may well aid in stimulating conscientious behavior. It would also be useful if learners self-reflect at regular intervals on the progress toward their DMC-related end-goal. This practice may help keep alive the sense of purpose, thereby encouraging conscientious behavior.

The results also convey some optimism that engaging in extraverted behaviors in the DMC practices might be an important precursor to optimizing motivational gains. As noted before, among the major motives underlying extraversion are the tendency for well-being and social interaction as well as seeking novelty and variety. The first basic recommendation in this regard is to be away from tension and recurring disruptions, and to look for avenues that will promote interactive skills during the DMC practices. Building greater self-confidence is another recipe to promote extraverted behaviors. Besides, for the sake of ensuring novelty and variety, it may work well to allow for diversity in the behavioral routines followed as part of the DMC processes.

It is also worth considering the wider potential implications for curriculum design, instruction, and assessment across various levels of L2 study including K-12 and postsecondary

settings. The findings point to the idea that deliberate personality-informed pedagogical decisions may serve a useful purpose in improving L2 learners' motivational disposition to go through intense, long-term, and goal-directed periods of engagement (namely DMCs). Models of L2 curriculum involving tasks that will foster conscientiousness and extraversion may arguably help learners keep their motivational progress on a positive trajectory. In particular, it may result in bolstering motivational outcomes if motivational techniques incorporated into L2 instruction are intentionally tailored to encourage behaviors underlying conscientiousness and extraversion. In addition, employing testing methods that stimulate conscientiousness (e.g., asking the submission of assignments in small parts as advised by Komarraju et al., 2011) and extraversion (e.g., using methods that allow for interaction among peers such as group/paired tasks) could prove useful from a motivational perspective.

## 7 | CONCLUSIONS, LIMITATIONS, AND FUTURE DIRECTIONS

The present study was motivated by the lack of research on the learner characteristics that induce individual-level variability in DMCs and made the first attempt in this direction by exploring to what extent variations in L2 learners' DMC disposition could be explained by their personality traits based on the Big-Five model. The findings documented evidence for the personality correlates of L2 learners' DMC disposition and supported the significant role of personality in explaining individual likelihood of experiencing a DMC. It was revealed that learners with certain personality traits (in particular conscientiousness and extraversion) may have a dispositional advantage to engage with individual-level DMC practices in the context of L2 learning.

In spite of the insights offered, the study is not without its limitations. First, this is a survey study based on the informants' self-reported responses, which could be influenced by potential sources of bias such as social desirability. Second, the findings may not be easily generalized to the other EFL settings because the nonrandom sample, consisting of volunteer participants from one particular Turkish university, may not be a perfect representative of the target population. Third, while the study explained 42% of the variance associated with the DMC disposition, more than half of the variability (58%) was still left unaccounted for. This is a clear indication that there are some other learner-internal and learner-external factors at work that mediate or contribute to the relationship between the variables under inquiry, which deserves further thought by future research. Besides, the results concerning neuroticism need to be interpreted with caution as the neuroticism subscale achieved a Cronbach  $\alpha$  of .69, which is slightly lower than the .70 accepted value (Hair et al., 2010). Furthermore, given that the link between personality and L2 learning is not direct but shaped by modifying parameters (Dörnyei, 2005), the role of contextual and environmental factors should also be considered in reporting on the implications of personality for L2 learning. Thus, the findings of this study fall short in making assertive claims about the extent to which personality-informed suggestions given thus far can per se multiply learning opportunities.

The Big-Five domains are broad in scope and encapsulate lower-level facets whose scores cannot be obtained in very brief personality inventories such as the one employed in the present study. Follow-up studies that use a more elaborate personality inventory sensitive to measuring facet-specific scores can help document a more fine-grained analysis of the personality correlates of the DMC disposition. Future work may in particular address how personality factors influence the DMC disposition through the mediation of other L2-related cognitive, emotional, and motivational variables. Given the most recent conceptualization of personality as a fluid, dynamic, and complex

construct (Dörnyei & Ryan, 2015), studies that will employ a dynamic personality framework (e.g., “New Big Five” by McAdams & Pals, 2006) could be particularly useful. Besides, whereas a DMC might happen as a result of a variety of personal and contextual factors, the question whether the sustainability of the motivational intensity of a DMC might partially depend on the personality type of an individual is another area worthy of further exploration. In closing, I hope the current study can lay the ground for initiating further discussions on the multifaceted nature of DMCs and accelerate the baby steps taken toward this largely uncharted territory. This promising line of research may not only shed light on the factors that support or impede DMCs, but also enrich our overall understanding of the complexity behind L2 motivational processes.

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## APPENDIX A

### DMC Disposition Scale

*Initial description.* There are specific times when people find themselves in a unique type of concentration and commitment while working on a project which keeps them extremely focused and fully engaged for weeks or longer. Such periods of highly intense motivation enable people to reach their full potential, increase their productivity, and allow them to achieve more than they expected. At that time, people spend a great deal of time and effort to achieve a desired outcome with an overall positive feeling without perceiving this process as challenging or boring. This type of intense motivational experiences may also show up in the language learning context. For example;

- A Chinese student who would like to major in English studies may feel a sudden surge of passion and enthusiasm to succeed while getting prepared for the university entrance exam. She/he starts devoting much time (in-class and after-class) practising grammar and vocabulary, becoming absorbed in textbooks, making translations, as well as attending courses with great pleasure, visiting school library on a regular basis, thinking day and night about the exam, and waking up happily with the thrill of doing further work on the exam. Thus, the desire to learn more about English language becomes a central part of his/her daily life.

Please indicate with YES or NO if you have experienced (or currently experiencing) this type of motivation to a similar level of intensity at any stage of your language learning process.

- NO  
 YES

If your answer is “NO,” please return the form to the person in charge. If your answer is “YES,” please complete the following questionnaire.

*Directions.* The statements below are representative of the characteristics of the intense motivation described above. Please indicate the extent to which you agree or disagree with these statements by considering how much they reflect the characteristics of such periods of intense motivation that you believe you have experienced (or currently experiencing) with a similar level of intensity at any stage of your language learning process. Please do not omit any of items.

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. When looking back now, I have very good memories of this time.	<input type="checkbox"/>				
2. During this time I was able to work more productively than I usually can.	<input type="checkbox"/>				
3. I surprised myself with how much I was able to do.	<input type="checkbox"/>				
4. Many times it felt like a real struggle to keep going.	<input type="checkbox"/>				
5. This experience helped me to achieve all I had wanted to and more.	<input type="checkbox"/>				

(Continues)

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6. I think something special happened to me during this experience - it was an amazing time.	<input type="checkbox"/>				
7. At the time, this project became a central part of my life.	<input type="checkbox"/>				
8. The people around me could see that I was experiencing something special.	<input type="checkbox"/>				
9. It didn't feel like hard work at the time - I was just caught up in the flow!	<input type="checkbox"/>				
10. I remember thinking about my goal all the time.	<input type="checkbox"/>				
11. I often imagined myself achieving my final goal.	<input type="checkbox"/>				
12. It was a really enjoyable experience.	<input type="checkbox"/>				

## APPENDIX B

### Personality questionnaire

*Directions.* The following questionnaire is composed of statements describing behaviors that people can display in their daily lives. Please read the items carefully and then tick the answer that you feel best represents yourself. Please do not omit any of items.

Statements	Very inaccurate	Moderately inaccurate	Neither accurate nor inaccurate	Moderately accurate	Very accurate
1. I am the life of the party.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel little concern for others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Continues)

<b>Statements</b>	<b>Very inaccurate</b>	<b>Moderately inaccurate</b>	<b>Neither accurate nor inaccurate</b>	<b>Moderately accurate</b>	<b>Very accurate</b>
3. I am always prepared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I get stressed out easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I have a rich vocabulary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I don't talk a lot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I am interested in people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I leave my belongings around.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am relaxed most of the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I have difficulty in understanding abstract ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel comfortable around people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I insult people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I pay attention to details.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I worry about things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I have a vivid imagination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I keep in the background.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I sympathize with others' feelings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I make a mess of things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I seldom feel blue.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I am not interested in abstract ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Continues)

<b>Statements</b>	<b>Very inaccurate</b>	<b>Moderately inaccurate</b>	<b>Neither accurate nor inaccurate</b>	<b>Moderately accurate</b>	<b>Very accurate</b>
21. I start conversations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I am not interested in other people's problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I get chores done right away.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I am easily disturbed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I have excellent ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I have little to say.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I have a soft heart.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. I often forget to put things back in their proper place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. I get upset easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I do not have a good imagination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I talk to a lot of different people at parties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I am not really interested in others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I like order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I change my mood a lot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I am quick to understand things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. I don't like to draw attention to myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Continues)

<b>Statements</b>	<b>Very inaccurate</b>	<b>Moderately inaccurate</b>	<b>Neither accurate nor inaccurate</b>	<b>Moderately accurate</b>	<b>Very accurate</b>
37. I take time out for others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I shirk my duties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I have frequent mood swings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I use difficult words.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. I don't mind being the center of attention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. I feel others' emotions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. I follow a schedule.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. I get irritated easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. I spend time reflecting on things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. I am quiet around strangers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. I make people feel at ease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. I am exacting in my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. I often feel blue.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. I am full of ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>