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THE SEARCH FOR PERSON-CAREER FIT: DO COGNITIVE STYLES MATTER?

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ABSTRACT

Given the lack of unequivocal findings on person-career fit, this investigation aims to gain insight into the role of cognitive styles in understanding students' career preferences by two complementary studies. In study 1, we examined whether students (n = 84) with different cognitive styles differ in their entrepreneurial attitudes. Results showed a strong positive correlation between the creating style and the overall occupational status choice index, which implies a preference to become self-employed. No significant correlations were found between this index and the knowing and the planning style respectively. A more detailed look at the occupational status choice sub-indexes showed a positive correlation for the knowing style with the 'economic opportunity' index, for the planning style with 'security' and 'participation in the whole process', and for the creating style with 'career', 'challenge', 'economic opportunity', 'autonomy', 'authority', and 'self-realisation'. No significant differences in overall occupational status choice were found in terms of gender, degree option, or family background in entrepreneurship. Study 2 focused on the link between students' career anchors and their cognitive styles and personality profile (n = 275). We found for the knowing style a positive correlation with 'pure challenge', for the planning style a positive correlation with 'lifestyle' and 'security/stability' and a negative one with 'autonomy/independence', and for the creating style a positive correlation with 'entrepreneurial creativity' and 'pure challenge' and a negative one with 'security/stability'. Hierarchical regression analyses showed that cognitive styles and personality traits could predict people's career anchors to a certain extent. These findings are particularly relevant for career counselling services of higher education institutions and for selection and recruitment policies of organisations. Further cross-sectional as well as longitudinal research in diverse cultural settings is needed to cross-validate and strengthen the conclusions of this study.

Keywords: Cognitive styles, career preferences, career anchors, entrepreneurial attitudes and intentions, students

INTRODUCTION

Choosing a future career is a common challenge for students. Scholars and vocational practitioners both emphasise the importance of choosing a career that is consonant with one's profile, as this fit is assumed to lead to higher levels of job satisfaction, motivation, and job performance, and lower levels of turnover (Hoffman & Woehr, 2006; Kristof-Brown, Zimmerman, & Johnson, 2005; Ostroff & Judge, 2007). Using personality characteristics to explain or predict career preferences is a familiar approach within the domain of vocational psychology (Arthur, Bell, Villado, & Doverspike, 2006; Furnham, 2001; Sullivan & Hansen, 2004), but these studies did not produce unequivocal results (Furnham, 2008; Järlström, 2000). Moreover, the link between students' cognitive styles – defined as individual differences in perceiving and processing information – and their career preferences has been investigated rarely, as most studies on cognitive (mis)fit focused on employees and managers in existing functions (e.g., Chan, 1996; Chilton, Hardgrave, & Armstrong, 2005; Miron, Erez, & Naveh, 2004). In line with the recent attention for a cognitive perspective in the entrepreneurship field (Baron, 2004) and in the field of industrial, work and organisational psychology (Hodgkinson, 2003), this inquiry aims to gain further insight into the role of cognitive styles in understanding students' entrepreneurial attitudes and career preferences by two complementary studies. In study 1, we focus in particular on the link between cognitive styles and the general occupation status choice decision. The main question of this study is: to what extent do students' cognitive styles influence their attitude to become an entrepreneur or an employee? In addition to this general study, study 2 looks in more detail at the career orientations of students with diverse profiles, using the career anchor theory of Schein (1996). We focus first on the theoretical framework, methodology, and results of each of these studies and conclude with a general discussion of our findings and implications for theory and practice.

STUDY 1: COGNITIVE STYLES AND ENTREPRENEURIAL ATTITUDES

Theoretical background and hypotheses

A first issue to consider when deciding on one's future career implies the general employment status choice, which can be defined as "the vocational decision process in terms of the individual's decision to enter an occupation as a wage or salaried individual or a self-employed one" (Katz, 1992, p. 30). There has been some research within the entrepreneurship field on possible predictors of people's employment status choice, which mainly focused on factors such as role models, gender, or prior self-employment experience (Kolvereid, 1996a; Scherer, Brodzinski, & Wiebe, 1991). More recently, scholars have focused on the potential contribution of entrepreneurship programmes and business education to stimulate people's entrepreneurial drive (Florin, Karri, & Rossiter, 2007; Souitaris, Zerbinati, & Al-Laham, 2007). An interesting additional perspective, which fits the recent evolution towards a cognitive perspective in entrepreneurship research (Mitchell et al., 2004), might be to look at cognitive style differences as they provide an alternative means to conceptualise students' employment status choice.

A cognitive style influences how people prefer to look at their environment for information, how they organise and interpret this information, and how they use these interpretations for guiding their actions (Hayes & Allinson, 1998). Cognitive styles are considered to be fundamental factors in individual workplace actions and organisational systems, processes, and routines (Sadler-Smith & Badger, 1998). From the wide diversity of available cognitive style models and instruments, the Cognitive Style Indicator model (CoSI; Cools & Van den Broeck, 2007) was chosen for this study as previous research in diverse Western and non-Western samples (e.g., students, managers, employees, entrepreneurs) found strong support for the construct validity and predictive validity of this model (Cools, De Pauw, & Vanderheyden, 2009a; Cools & Van den Broeck, 2008a; 2008b; Cools, Van den Broeck, & Bouckenooghe, 2009b). This model distinguishes three cognitive styles: a knowing style, a planning style, and a creating style. People scoring high on the *knowing style* prefer a rational and impersonal way of information processing and have strong analytical skills. They search for accuracy and like to make informed decisions on the basis of a thorough analysis of facts and figures and logical arguments. People who score high on the *planning style* are attracted by structure and control and prefer a well-organised work environment. Planners like to make decisions in a structured way and are mostly concerned with the efficiency of the process.

People who score high on the *creating style* search for renewal and prefer dynamic environments. They like to work in a flexible way and have a preference for a creative and unconventional way of decision making.

According to Allinson, Chell, and Hayes (2000), cognitive styles are an alternative way of differentiating entrepreneurs from non-entrepreneurs. Kickul and Krueger (2004) also stated that cognitive styles play an important role in entrepreneurial thinking. In a recent study, Brigham, De Castro, and Shepherd (2007) found that entrepreneurs in a situation of cognitive misfit had lower levels of satisfaction with their work environment and higher levels of intention to exit and actual turnover. Looking at previous research on the cognitive profile of entrepreneurs, it can be concluded that most studies found a more innovative cognitive style for entrepreneurs than for non-entrepreneurs (e.g., Allinson et al., 2000; Stewart, Watson, Carland, & Carland, 1998). Cools and Van den Broeck (2008a) did not found a significant difference between entrepreneurs and non-entrepreneurs for the creating style, but these groups did differ on the knowing and the planning style (with a significantly higher score for the non-entrepreneurs on each of these styles). Based on these studies with existing entrepreneurs, we propose that:

> *Hypothesis 1: We expect a positive correlation between students' overall occupational status choice index (implying a preference for self-employment) and the creating style and a negative one with the knowing style and the planning style.*

Method

We collected the data for this study through a self-report questionnaire. Students completed the measures that were used in this study as part of a larger survey. It was clearly explained to the students that the survey was for research purposes only and that their participation was voluntary.

Sample. This sample consisted of 84 graduate students from a Belgian university who followed a Masters degree in Applied Economics. Twenty-six per cent of them specialised in marketing, 27.5 per cent in finance, and 46.5 per cent in accounting. The age of these students ranged from 21–34 years (M = 21.60 years, SD = 1.59). The sample consisted of 63 per cent women and 37 per cent men.

Measures. Cognitive styles were assessed with the 18-item Cognitive Style Indicator (CoSI; Cools & Van den Broeck, 2007), which measures individual differences with regard to how people perceive, process, and structure information. The CoSI uses a five-point Likert scale format and distinguishes a knowing style (4 items; $\alpha = 0.77$; e.g., 'I like to analyse problems'), a planning style (7 items; $\alpha = 0.80$; e.g., 'I prefer clear structures to do my job'), and a creating style (7 items; $\alpha = 0.87$; e.g., 'I like to extend the boundaries').

To measure the students' entrepreneurial attitudes, we used the 33-item Occupational Status Choice Attitude Indexes of Kolvereid (1996b), which includes five indexes that refer to reasons to become organisationally employed (security, workload, social environment, avoiding responsibility, and career) and six indexes referring to reasons in favour of self-employment (economic opportunity, challenge, autonomy, authority, self-realisation, and participation in the whole process). Respondents are asked to indicate on a seven-point Likert scale the degree to which they find a particular element important to consider in their future work career. Following Kolvereid's (1996b) instruction, an indicator of students' employment status choice attitude is calculated as the numerical difference between the average of the six index scores for the self-employment attitude and the average of the five index scores for the organisationally employment attitude. A high score indicates a favourable attitude towards self-employment. The overall Cronbach alpha of this scale was 0.78 in this study.

In addition to the occupational status choice attitudes, we also measured the students' occupational status choice intention. This fits in the theory of planned behaviour (Ajzen, 1991), which makes an important distinction between attitudes and intentions. We used a three-item measure proposed by Kolvereid (1996a), capturing the intention of an individual to start a business as opposed to pursuing a career employed in an organisation. This measure has a seven-point Likert scale format ($\alpha = 0.85$, e.g., 'How likely is it that you will pursue a career as self-employed?'), with a high score indicating a desire to become self-employed.

Similar to a study from Souitaris and colleagues (2007), we also assessed the students' family background in entrepreneurship. From these economics students, most parents were organisationally employed (mother: 71.5%; father: 57%), followed by self-employed parents (mother: 21.5%; father: 40.5%), and a small number of unemployed parents (mother: 7%; father: 2.5%).

Results and discussion

Table 1 shows the means, standard deviations, and correlations of the different subscales of study 1. Regarding the cognitive styles, a significant negative correlation was found between the planning style and the creating style ($r = -0.28$, $p < 0.05$), which is consistent with previous research with the CoSI (Cools & Van den Broeck, 2007). No significant differences were found between the three cognitive styles in terms of gender or degree option (i.e., marketing, accounting, finance).

Insert Table 1 About Here

We see a strong positive correlation between the overall occupational status choice index and the creating style ($r = 0.54$, $p < 0.001$), indicating a preference towards self-employment. As we found no significant correlation between this overall index and the knowing style ($r = 0.19$, $p = 0.10$) and the planning style ($r = -0.14$, $p = 0.20$) respectively, hypothesis 1 was only partially confirmed. No significant differences were found for the overall occupational status choice index in terms of gender, degree option, or family background in entrepreneurship with one exception. When looking at the overall attitude to become self-employed (i.e., the sum of the six sub-indexes referring to reasons to become self-employed), it seems that students who's mothers are self-employed have a significantly higher attitude ($t(73) = 2.14$, $p < 0.05$) to become self-employed themselves ($M = 107.5$, $SD = 11.7$, $n = 18$) than students who's mothers are organisationally employed ($M = 100.21$, $SD = 12.89$, $n = 57$).

Interestingly, when considering the occupational status choice intention (in contrary to the attitudes), we saw a small negative correlation with the planning style ($r = -0.19$, $p = 0.08$), which refers to a desire to become organisationally employed rather than self-employed and can be considered indirect support for hypothesis 1. No significant correlations were found for the knowing style ($r = 0.01$, $p = 0.94$) and the creating style ($r = 0.16$, $p = 0.15$) with entrepreneurial intention. Similar to findings of Kolvereid (1996b), men ($M = 3.37$, $SD = 1.43$, $n = 31$) scored significantly higher on the occupational status choice intention than women ($M = 2.44$, $SD = 1.31$, $n = 53$; $t(82) = 3.05$, $p < 0.01$).

A more detailed look at the occupational status choice sub-indexes gives some interesting additional information. The planning style showed a positive correlation with 'security' ($r = 0.30$, $p < 0.01$) and with 'participation in the whole process' ($r = 0.27$, $p < 0.05$), which is in line with previous research (e.g., Cools & Van den Broeck, 2007; 2008a; 2008b; Gardner & Martinko, 1996; Jacobson, 1993; Judge & Cable, 1997). Planners have been found to be habit-bound individuals, who search for certainty, show a low tolerance for ambiguity, and are rather closed to new ideas or experiences. For the creating style, a positive correlation was found with all sub-indexes that refer to reasons to become self-employed (economic opportunity: $r = 0.28$, $p < 0.05$; challenge: $r = 0.60$, $p < 0.001$; autonomy: $r = 0.26$, $p < 0.05$; authority: $r = 0.40$, $p < 0.001$; self-realisation: $r = 0.65$, $p < 0.001$) except for 'participation in the whole process' ($r = 0.07$, $p = 0.51$). Previous research also found that people with a creating style preferred to leave options open, had a proactive personality and a high tolerance for ambiguity, and showed high levels of intention to leave irrespective of the cognitive climate they are working in (Cools & Van den Broeck, 2008b; Cools et al., 2009b; Judge & Cable, 1997; Kickul & Krueger, 2004). We also found a positive correlation for the creating style with the organisational sub-index 'career' ($r = 0.30$, $p < 0.01$), which fits the ambition and drive of people with a high score on the creating style (Cools & Van den Broeck, 2008a). For the knowing style, only a significant positive correlation was found with the self-employment index 'economic opportunity' ($r = 0.30$, $p < 0.01$).

STUDY 2: COGNITIVE STYLES AND CAREER ANCHORS

Theoretical background and hypotheses

In addition to the general focus on students' occupational status choice, study 2 focused in more detail on the link between students' individual profiles and their career preferences. Given the large number of studies on personality and career preferences (e.g., Nordvik, 1996; Järlström, 2000; Tokar, Fischer, & Subich, 1998), our choice was to include personality traits in this second study as an additional variable next to cognitive style differences, which were the main focus of the study. An interesting framework to conceptualise people's career preferences is the career anchor theory of Schein (1978; 1990; 1996), as this theory has the potential to enhance the understanding of people's career motivations (Danziger, Rachman-Moore, & Valency, 2008; Feldman & Bolino, 2000).

Career anchors have been considered to derive from a person's abilities, motives, and values, being shaped by feedback and experiences in the work environment (Warr & Pearce, 2004). Schein (1978, p. 128) states that a career anchor can be viewed as "that concern or value which the person will not give up, if a choice has to be made". In a longitudinal study with 44 MBA alumni at the Massachusetts Institute of Technology (MIT), Schein (1978) found that, although there was no consistency in their job histories, there was a great deal of similarity in the reasons for their career decisions. The career anchors emerged as a way of describing these patterns. Based on extensive follow-up research with diverse populations, Schein (1990) distinguished eight career anchors: technical/functional competence (TF), general managerial competence (GM), autonomy/independence (AU), security/stability (SE), entrepreneurial creativity (EC), service/dedication to a cause (SV), pure challenge (CH), and lifestyle (LS).

The *technical and functional competence anchor* will lead people to career decisions based on the opportunity to apply and develop their competencies. People scoring high on this anchor strive to be the very best they can in their functional area(s) and are less likely to leave their field of expertise. Individuals scoring high on the *managerial competence anchor* tend to choose careers that carry high levels of responsibility in which they can be accountable for total results. In a sense, these people derive much of their own identity and feeling of success from the fortunes of their organisations. People who have made career decisions in search of independence are characterised by the *autonomy anchor*. Scoring high on this anchor means a strong willingness to have the opportunity to define your own work in your own way. Career decisions based on the *security or stability anchor* drive people to strive for employment security or tenure in a job or organisation. The main concern of people with this anchor is achieving a sense of having succeeded to be able to relax. People anchored in *entrepreneurial creativity* tend to make career decisions that lead to the creation of an own business. Their key motive is to build or create something that is entirely their own product. Individuals with the *service/dedication to a cause anchor* are primarily motivated to pursue work that achieves something of value and want to align their work activities with personal values about helping the society. People with a high score on the *challenge anchor* will pursue careers characterised by finding solutions to seemingly unsolvable problems, by winning over opponents, or overcoming difficult obstacles. Some people find such pure challenge in intellectual kinds of work, while others derive it from interpersonal competition. The last career anchor, *lifestyle*, stands for people who want careers that permit them to balance and integrate their personal needs, their family needs, and the requirements of their job.

They look for organisations that have strong pro-family values and that leave them enough flexibility to achieve such integration. Based on previous research on the link between career orientations and personality traits and types (e.g., Furnham, 2008; Järlström, 2000; Nordvik, 1996; Tokar et al., 1998), we hypothesise that:

Hypothesis 2: We expect a positive correlation between the knowing style and the technical/functional competence anchor and the pure challenge anchor.
Hypothesis 3: For the planning style, we expect a positive correlation with the security/stability anchor and the lifestyle anchor.

Hypothesis 4: A positive correlation is expected between the creating style and the general managerial competence anchor, the autonomy/independence anchor, the entrepreneurial creativity anchor, and the pure change anchor.

Hypothesis 5: We expect that cognitive styles and personality traits will explain a significant amount of variance in preferred career anchors.

Method

Similar to study 1, we collected the data for this study through a self-report questionnaire. Respondents participated on a voluntary basis. To avoid measurement effects, the respondents answered the three measures during two different classes. However, this had the drawback that only 125 out of the 275 respondents completed all questionnaires.

Sample. Respondents were 275 management students from a leading Belgian business school, who followed a one-year full time management education. This master after master programme is mainly attended by students without or with less than three years of working experience. Eleven per cent specialised in marketing management, 78 per cent in general management, and 11 per cent in financial management. Their age ranged from 21−30 years (M = 23.11 years, SD = 1.14), which is comparable to the students of sample 1. In contrary to study 1, 74 per cent were men and 26 per cent women. Thirty-two per cent had a previous university degree with a background in economics, 24 held an engineering degree, and 20 per cent studied law. The remaining quarter studied social sciences (8%), sciences (5%), arts (2%), or else (9%).

Measures. To measure students' cognitive styles, we also used the Cognitive Style Indicator (Cools & Van den Broeck, 2007). We found a Cronbach alpha of 0.82, 0.86, and 0.81 for the knowing, planning, and creating style respectively in this study.

The personality traits were measured with the Single-Item Measures of Personality (SIMP) of Woods and Hampson (2005). The SIMP is a recently developed personality questionnaire using five bipolar single items on a nine-point Likert scale. Each item consists of two opposing descriptions representing the poles of one of the Big Five factors. *Extraversion* refers to people's comfort level with relations. *Agreeableness* concerns people's ability to get along well with others. *Emotional stability* represents the extent to which people can cope with stress situations and experience positive emotional states. *Conscientiousness* refers to the extent to which people are organised, responsible, careful, and self-disciplined. *Openness to experience* represents people's openness to new experiences and broad interest and fascination for novelty.

Schein's Career Orientation Inventory (Schein, 1990) was used to assess students' career anchors. This inventory consists of 40 statements that use a six-point Likert scale format with answers varying from 1 ('never true for me') to 6 ('always true for me'). There are eight subscales (i.e., the eight career anchors explained earlier), with 5 statements representing each career anchor. Before scoring each subscale (by summing up the corresponding items and dividing by five), respondents are asked to give an additional four points to the three statements that are most true for them.

Results and discussion

Table 2 shows the correlations of the study variables. Also in the second study a significant negative correlation can be seen between the planning style and the creating style ($r = -0.30$, $p < 0.001$) as well as a positive one between the knowing style and the planning style ($r = 0.28$, $p < 0.001$), as found in earlier research (Cools & Van den Broeck, 2007). Confirming previous studies on the link between cognitive styles and personality (Cools et al., 2009a; Cools & Van den Broeck, 2007; 2008a), the planning style was positively correlated with conscientiousness ($r = 0.67$, $p < 0.001$) and negatively with openness ($r = -0.32$, $p < 0.001$). The creating style showed a negative correlation with conscientiousness ($r = -0.36$, $p < 0.001$) and a positive one with openness ($r = 0.53$, $p < 0.001$).

Insert Table 2 About Here

Looking at the relation between the cognitive styles and the career anchors, it is clear that hypothesis 2 was only partially confirmed. As expected, the knowing style correlated positively with pure challenge ($r = 0.19$, $p < 0.05$), confirming their preference for intellectually challenging tasks and jobs (Cools & Van den Broeck, 2008b). Contrary to our expectations, we did not find a significant correlation with the technical/functional competence anchor for the knowing style ($r = 0.03$, $p = 0.79$). Hypothesis 3 was confirmed, as the planning style correlated positively with security/stability ($r = 0.32$, $p < 0.001$) and with lifestyle ($r = 0.21$, $p < 0.05$). Nordvik (1996) also found that planning types (i.e., sensing types) preferred comfort, skill development, belongingness and helping others, whereas more intuitive, creating types liked self-direction and self-expression. In addition, we also found a negative correlation with autonomy/independence for the planning style ($r = -0.19$, $p < 0.05$). Cools and colleagues (2009b) found that people with a planning style showed the lowest levels of intention to leave and job search behaviour of all cognitive profiles. Gardner and Martinko (1996) found that planning types (i.e., sensing types in their study) had a stronger preference for structured tasks, routine, and detail-oriented activities than more creating, intuitive types. Hypothesis 4 was partially confirmed. No significant correlations were found between the creating style and autonomy/independence ($r = 0.14$, $p = 0.12$) and general managerial competence ($r = 0.05$, $p = 0.57$) respectively. However, the creating style did show a positive correlation with entrepreneurial creativity ($r = 0.24$, $p < 0.01$) and with pure challenge ($r = 0.26$, $p < 0.01$) and negative one with security/stability ($r = -0.20$, $p < 0.05$). Creating people have been found to prefer tasks and jobs that require creativity, action, flexibility, and own input (Cools & Van den Broeck, 2008b). Kirton (2003) also concluded that more analytical people (i.e., adaptors) preferred to work in well-defined and stable situations, whereas more creating people (i.e., innovators) were more comfortable working in unstructured and changing situations.

In terms of the correlations between the personality traits and the career anchors, we found a rather similar picture than the one above. Conscientiousness correlated positively with security/stability ($r = 0.17$, $p = 0.06$) and with lifestyle ($r = 0.16$, $p = 0.08$), and negatively with autonomy/independence ($r = -0.19$, $p < 0.05$). Openness showed a positive correlation with pure challenge ($r = 0.19$, $p < 0.05$). In addition, agreeableness had a positive correlation with service/dedication to a cause ($r = 0.27$, $p < 0.01$) and extraversion a negative one with pure challenge ($r = -0.19$, $p < 0.05$).

To examine the extent to which students' career anchors could be predicted by the personality traits and the cognitive styles, a series of hierarchical regression analyses were conducted. In each of the regression analyses, we entered the personality traits in step one (Model 1) and added the cognitive styles in step two (Model 2). This way, we could see whether cognitive styles might be an interesting additional perspective next to the more often studied personality traits in this kind of research. Importantly, we decided to exclude the personality traits conscientiousness and openness from these regression analyses to avoid problems of multicollinearity (given the strong correlations of these traits with the planning style and the creating style, see Table 2). Hypothesis 5 was only partially confirmed, as the personality traits and cognitive styles turned out not to be significant predictors for five of the eight career anchors (technical/functional competence, general managerial competence, autonomy/independence, entrepreneurial creativity, lifestyle). As Table 3 shows, personality traits and cognitive styles together (Model 2) predicted in a significant way the preference for the career anchor security/stability ($F(6,113) = 5.01$, $p < 0.001$). The results indicated that people who scored higher on this career anchor also had a higher score on the planning style ($\beta = 0.38$, $p < 0.001$). The personality traits (Model 1: $F(3,116) = 6.09$, $p < 0.01$) accounted for a significant proportion of variance in the choice for the career anchor service/dedication to a cause (see Table 4). People scoring higher on agreeableness ($\beta = 0.32$, $p < 0.001$) and lower on emotional stability ($\beta = -0.19$, $p < 0.05$) have a preference in their career for service/dedication to a cause. The cognitive styles (Model 2) were a significant predictor of the career anchor pure challenge ($F(6,113) = 2.72$, $p < 0.05$) (see Table 5). Both the knowing style ($\beta = 0.19$, $p < 0.05$) and the creating style ($\beta = 0.25$, $p < 0.05$) predicted the preference for pure challenge.

Insert Table 3, 4 & 5 About Here

CONCLUSION

The aim of this study was to examine the role of cognitive style differences in students' occupational status choice (study 1) and career preferences (study 2). We found partial evidence for our hypotheses in this research, indicating the cognitive style differences do matter in the context of career and occupational preferences. Study 1 showed a higher attitude to become self-employed for people with a creating style, but no significant correlations were found between the occupational status choice index and the knowing and the planning style respectively. Study 2 found some expected linkages between cognitive style profiles and Schein's career anchors. Hierarchical regression analyses also indicated that cognitive styles and personality traits could predict people's career orientation for three out of the eight career anchors. Overall, our findings seem to be consistent with other studies that focused in general (i.e., not in particular in the context of person-environment fit research) on the profile of people with diverse cognitive styles (e.g., Cools & Van den Broeck, 2007; 2008a; 2008b; Cools et al., 2009b; Gardner & Martinko, 1996; Jacobson, 1993; Kirton, 2003). Summarising our results, people who score high on the knowing style seem to value 'economic opportunity', which is one of the reasons to become self-employed, referring to a preference to receive compensation based on merit and to keep a large proportion of the result. The knowing style also predicted a preference for the career anchor 'pure challenge', which is consistent with their search for intellectual challenges. For the planning style, we found evidence for a drive towards security and stability, control over the whole work process, and a balance between work and private life in both studies. People with a creating style came across as entrepreneurial types, who search for challenges, autonomy, authority, and self-realisation and who dislike security and stability.

Together, these results give us some further insights into the career aspirations of students with diverse cognitive profiles, which might complement earlier person-environment fit studies that focused rather on employees and managers in existing organisations (Ehrhart & Ziegert, 2005). From a practical perspective, our findings are particularly relevant for career counselling services of higher education institutions and for selection and recruitment policies of organisations. Making career decisions is all about choosing among the many occupational alternatives, which is not an easy task for students. Armed and empowered with information and knowledge about their own individual profile and their career preferences, students can learn how to satisfy their needs and follow a career development path leading to long-term job satisfaction.

Career service departments of higher institutions have an important task in facilitation this process. Organisations on the other hand can use vocational studies like this one to be better able to attract and attain employees that fit their organisational culture, vision and strategy.

Several limitations of our research should also be noted. First, the focus of study 1 was on students' occupational choice attitudes and intention, and not on actual behaviour. It was outside the scope of this study to investigate the actual occupation decision of these students after they graduated, which is an important limitation. The theory of planned behaviour (Ajzen, 1991) states that behaviour can be predicted from people's intention, which is in turn influenced by people's attitudes, subjective norms, and perceived behavioural control. Further research on each of these aspects, taking a longitudinal perspective, will contribute to a more in-depth understanding of the link between people's attitudes, intention, and actual behaviour.

Second, the data for this study were collected in a cross-sectional way, but an important unanswered question is: to what extent are people's entrepreneurial attitudes or career anchors stable constructs? It is, for instance, possible that the current worldwide economic crisis has an influence on people's preference and intention to become self-employed versus organisationally employed. With regard to the career anchors, Schein (1990) stated they are long-term in nature, and, although their relative priority might shift somewhat, essentially they maintain their steady state irrespective of the changes that occur over the course of a career. But again, what is the influence of external factors on these career orientations? Further cross-sectional as well as longitudinal research in diverse cultural and economic settings is needed to cross-validate and strengthen the conclusions of this study.

Third, gaining a clear understanding of person-career fit is a challenge as diverse aspects play a role. It is clear from this study that cognitive styles and personality do impact on students' career preferences, but only to a certain extent. People differ in many other ways and it is important to take a whole range of individual and environmental factors into account when investigating fit. Scholars recently conceptualised person-environment fit as a multidimensional construct that evolves over time and that is composed of fit with the vocation, organisation, job, group, and other people (Jansen & Kristof-Brown, 2006; Westerman & Cyr, 2004). According to Jansen and Kristof-Brown (2006), increasing our understanding of single dimensions of fit, in isolation of time and context, is no longer sufficient.

Moreover, the changing nature of work (e.g., boundaryless careers) and the changing psychological contracts (i.e., from the exchange of loyalty for job security to the exchange of performance for continuous learning and marketability) affect the relationships between potential employees and their work organisation (Ehrhart & Ziegert, 2005; Patterson, 2001). Hence, future person-career fit studies should take a broader range of individual and environmental factors into account.

Finally, the particular data collection approach and subsequent data analyses in this research had some limitations that were not foreseen in the initial research design. In study 1, the sample size was rather small, which implicated that we could not perform regression analysis. In study 2, the strong significant correlations between particular cognitive styles and personality traits could lead to multicollinearity issues in the performed hierarchical regression analyses. By discarding two personality traits (i.e., openness and conscientiousness) from these analyses we could not fully study the complementary impact of cognitive styles and personality traits on students' career anchors. To deal with these issues, we will consider other statistical techniques, such as cluster analysis, in subsequent analyses. Church and Waclawski (1998) already successfully used this technique to identify particular leadership types on the basis of cognitive and personality characteristics. Cluster analysis is also a valuable tool for fit research, as these techniques aim to identify different types or patterns in the data based on similarities on a range of variables (Mumford & Espejo, 2007).

To conclude, we are convinced that an investigation of students' vocational choices and preferences from a cognitive style perspective might lead to further insights in the context of person-environment fit models. Moreover, a joint focus on personality traits and cognitive styles in combination with a focus on the general occupational choice question and a more detailed look at preferred career orientations might contribute to a more integrated perspective in vocational research. By taking into account the aforementioned limitations in follow-up research, we hope to stimulate further insights into the individual factors that play a role in people's career preferences.

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REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behaviour and Human Decision Processes, 55,* 1-63.

Allinson, C.W., Chell, E., & Hayes, J. (2000). Intuition and entrepreneurial behavior. *European Journal of Work and Organizational Psychology, 9,* 31-43.

Arthur, W., Jr., Bell, S.T., Villado, A.J., & Doverspike, D. (2006). The use of person-organization fit in employment decision making: an assessment of its criterion-related validity. *Journal of Applied Psychology, 91,* 786-801.

Baron, R.A. (2004). The cognitive perspective: a valuable tool answering entrepreneurship's basic "why" questions. *Journal of Business Venturing, 19,* 221-239.

Brigham, K.H., De Castro, J.O., & Shepherd, D.A. (2007). A person-organization fit model of owner-managers' cognitive style and organizational demands. *Entrepreneurship Theory and Practice, 31,* 29-51.

Chan, D. (1996). Cognitive misfit of problem-solving style at work: a facet of person-organization fit. *Organizational Behavior and Human Decision Processes, 68,* 194-207.

Chilton, M.A., Hardgrave, B.C., & Armstrong, D.J. (2005). Person-job cognitive style fit for software developers: the effect on strain and performance. *Journal of Management Information Systems, 22,* 193-226.

Church, A.H., & Waclawski, J. (1998). The relationship between individual personality orientation and executive leadership behaviour. *Journal of Occupational and Organizational Psychology, 71,* 99-125.

Cools, E., De Pauw, A., & Vanderheyden, K. (2009a). *Cognitive styles in an international perspective: cross-validation of the Cognitive Style Indicator.* Vlerick Leuven Gent Management School, Working Paper Series 2009/11.

Cools, E., & Van den Broeck, H. (2007). Development and validation of the Cognitive Style Indicator. *The Journal of Psychology, 141,* 359-387.

Cools, E., & Van den Broeck, H. (2008a). The hunt for the Heffalump continues: can trait and cognitive characteristics predict entrepreneurial orientation? *Journal of Small Business Strategy, 18,* 23-41.

Cools, E., & Van den Broeck, H. (2008b). Cognitive styles and managerial behaviour: a qualitative study. *Education and Training, 50,* 103-114.

Cools, E., Van den Broeck, H., & Bouckenooghe, D. (2009b). Cognitive styles and person-environment fit: investigating the consequences of cognitive (mis)fit. *European Journal of Work and Organizational Psychology, 18,* 167-198.

Danziger, N., Rachman-Moore, D., & Valency, R. (2008). The construct validity of Schein's career anchors orientation inventory. *Career Development International, 13,* 7-19.

Ehrhart, K.H., & Ziegert, J.C. (2005). Why are individuals attracted to organizations? *Journal of Management, 31,* 901-919.

Feldman, D.C. & Bolino, M.C. (2000). Career patterns of the self-employed: career motivations and career outcomes. *Journal of Small Business Management, 38,* 53-67.

Florin, J., Karri, R., & Rossiter, N. (2007). Fostering entrepreneurial drive in business education: An attitudinal approach. *Journal of Management Education, 31,* 17-42.

Furnham, A. (2001). Vocational preference and P-O fit: reflections on Holland's theory of vocational choice. *Applied Psychology: An International Review, 50,* 5-29.

Furnham, A. (2008). *Personality and intelligence at work: Exploring and explaining individual differences at work.* New York: Routledge.

Gardner, W.L. & Martinko, M.J. (1996). Using the Myers–Briggs Type Indicator to study managers: A literature review and research agenda. *Journal of Management, 22,* 45-83.

Hayes, J., & Allinson, C.W. (1998). Cognitive style and the theory and practice of individual and collective learning in organizations. *Human Relations, 51,* 847-871.

Hodgkinson, G.P. (2003). The interface of cognitive and industrial, work and organizational psychology. *Journal of Occupational and Organizational Psychology, 76,* 1-25.

Hoffman, B.J., & Woehr, D.J. (2006). A quantitative review of the relationship between person-organization fit and behavioral outcomes. *Journal of Vocational Behavior, 68,* 389-399.

Jacobson, C.M. (1993). Cognitive styles of creativity: relations of scores on the Kirton Adaption-Innovation Inventory and the Myers-Briggs Type Indicator among managers in the USA. *Psychological Reports, 72,* 1131-1138.

Jansen, K.J. & Kristof-Brown, A. (2006). Toward a multidimensional theory of person-environment fit. *Journal of Managerial Issues, XVIII,* 193-212.

Järlström, M. (2000). Personality preferences and career expectations of Finnish business students. *Career Development International, 5,* 144-154.

Judge, T.A., & Cable, D.M. (1997). Applicant personality, organizational culture, and organizational attraction. *Personnel Psychology, 50,* 359-394.

Katz, J.A. (1992). A psychological cognitive model of employment status choice. *Entrepreneurship Theory and Practice, 17,* 29-37.

Kickul, J., & Krueger, N. (2004). A cognitive processing model of entrepreneurial self-efficacy and intentionality. In S.A. Zahra *et al.* (Eds.), *Frontiers of entrepreneurship research* (pp. 607-619). Wellesley, MA: Babson College, Center for Entrepreneurial Studies.

Kirton, M.J. (2003). *Adaption-innovation in the context of diversity and change.* London: Routledge.

Kolvereid, L. (1996a). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice, 21,* 47-57.

Kolvereid, L. (1996b). Organizational employment versus self-employment: reasons for career choice intentions. *Entrepreneurship Theory and Practice, 20,* 23-31.

Kristof-Brown, A.L., Zimmerman, R.D., & Johnson, E.C. (2005). Consequences of individuals' fit at work: a meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology, 58,* 281-342.

Miron, E., Erez, M., & Naveh, E. (2004). Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other? *Journal of Organizational Behavior, 25,* 175-199.

Mitchell, R.K., Busenitz, L., Lant, T., McDougall, P.P., Morse, E.A., & Smith, H.B. (2004). The distinctive and inclusive domain of entrepreneurial cognition research. *Entrepreneurship Theory and Practice, 28,* 505-518.

Mumford, M.D. & Espejo, J. (2007). Methodological and analytical techniques in fit research: 11.5 Cluster analysis. In: C. Ostroff & T.A. Judge (Eds.). *Perspectives on organizational fit* (pp. 377-387). New York: Lawrence Erlbaum.

Nordvik, H. (1996). Relationship between Holland's vocational typology, Schein's career anchors and Myers-Briggs' types. *Journal of Occupational and Organizational Psychology, 69,* 263-275.

Ostroff, C., & Judge, T.A. (2007) (Eds.). Perspectives on organizational fit. New York: Lawrence Erlbaum.

Patterson, F. (2001). Developments in work psychology: emerging issues and future trends. *Journal of Occupational and Organizational Psychology, 74,* 381-390.

Sadler-Smith, E., & Badger, B. (1998). Cognitive style, learning and innovation. *Technology Analysis and Strategic Management, 10,* 247-265.

Schein, E.H. (1978). *Career dynamics: matching individual and organization needs*. Reading, MA: Addison-Wesley.

Schein, E.H. (1990). *Career anchors: discovering your real values.* San Diego, CA: Pfeiffer & Company.

Schein, E.H. (1996). Career anchors revisited: implications for career development in the 21st century. *Academy of Management Executive,* 10, 80-88.

Scherer, R.F., Brodzinski, J.D., & Wiebe, F.A. (1991). Examining the relationship between personality and enrepreneurial career preference. *Entrepreneurship & Regional Development, 3,* 195-206.

Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing, 22,* 566-591.

Stewart, W.H., Jr., Watson, W.E., Carland, J.C., & Carland, J.W. (1998). A proclivity for entrepreneurship: a comparison of entrepreneurs, small business owners, and corporate managers. *Journal of Business Venturing, 14,* 189-214.

Sullivan, B.A. & Hansen, J.I.C. (2004). Mapping associations between interests and personality: toward a conceptual understanding of individual differences in vocational behavior. *Journal of Counseling Psychology, 51,* 287-298.

Tokar, D.M., Fischer, A.R., & Subich, L.M. (1998). Personality and vocational behavior: a selective review of the literature, 1993-1997. *Journal of Vocational Behavior, 53,* 115-153.

Warr, P. & Pearce, A. (2004). Preferences for careers and organisational cultures as function of logically related personality traits. *Applied Psychology: An International Review, 53,* 423-435.

Westerman, J.W. & Cyr, L.A. (2004). An integrative analysis of person-organization fit theories. *International Journal of Selection and Assessment, 12,* 252-261.

Woods, S. A., & Hampson, S. E. (2005). Measuring the big five with single items using a bipolar response scale. *European Journal of Personality, 19,* 373-390.

TABLE 1

Pearson Product-Moment Correlations of Cognitive Style Indicator subscales, Occupational Status Choice Attitude Indexes, and Occupation Status Choice Intention (Study 1, *n* = 84)

	M [a]	*SD*	Knowing style	Planning style	Creating style
Knowing style	3.61	0.66			
Planning style	3.75	0.60	0.09		
Creating style	3.57	0.68	−0.10	−0.28*	
Overall occupational status choice attitude	4.82	0.44	0.19	−0.14	0.54***
Security [b]	5.30	1.16	−0.02	0.30**	−0.08
Workload	3.52	1.10	−0.06	0.18	−0.16
Social environment	5.26	1.11	−0.01	−0.13	0.10
Avoid responsibility	2.06	0.99	0.04	0.21†	−0.43***
Career	5.90	0.98	0.07	−0.13	0.30**
Economic opportunity [c]	5.39	0.94	0.30**	0.06	0.28*
Challenge	6.04	0.80	0.04	−0.20†	0.60***
Autonomy	4.99	0.99	0.21†	−0.10	0.26*
Authority	5.16	1.17	0.13	−0.08	0.40***
Self-realisation	5.52	0.97	0.11	−0.09	0.65***
Participate in the whole process	4.75	1.23	0.04	0.27*	0.07
Occupational status choice intention	2.78	1.24	0.01	−0.19†	0.16

Note. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a] The CoSI uses a five-point Likert-scale and the Occupational Status Choice Attitude Indexes and the occupational status choice intention measure a seven-point Likert scale. [b] Security, workload, social environment, avoid responsibility, and career represent the five indexes referring to a preference to become organisationally employed. [c] Economic opportunity, challenge, autonomy, self-realisation, and participate in the whole process are the six indexes referring to a preference for self-employment.

TABLE 2

Pearson Product-Moment Correlations of Cognitive Style Indicator subscales, Single-Item Measures of Personality subscales, Career Orientation Inventory subscales (Study 2, *n* = 275 [a])

	M [b]	*SD*	Knowing style	Planning style	Creating style
Knowing style	3.65	0.72			
Planning style	3.53	0.70	0.28***		
Creating style	3.90	0.56	−0.02	−0.30***	
Extraversion	5.12	2.09	−0.01	0.09	−0.02
Agreeableness	5.25	1.69	0.01	0.000	0.05
Emotional stability	4.83	1.84	0.05	−0.13†	0.06
Conscientiousness	4.90	2.09	0.12†	0.67***	−0.36***
Openness	5.83	1.71	−0.02	−0.32***	0.53***
Technical/functional competence	3.95	1.13	0.03	0.15	−0.08
General managerial competence	4.13	1.26	−0.14	0.01	0.05
Autonomy/independence	4.48	1.38	−0.07	−0.19*	0.14
Security/stability	2.87	1.04	−0.02	0.32***	−0.20*
Entrepreneurial creativity	4.39	1.81	−0.10	−0.07	0.24**
Service/dedication to a cause	3.54	1.38	0.03	0.01	0.16
Pure challenge	4.52	1.06	0.19*	−0.05	0.26**
Lifestyle	4.39	1.47	0.05	0.21*	−0.13

Note. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a] Only 125 of the 275 respondents completed all three measures. [b] The CoSI uses a five-point Likert-scale, the SIMP a nine-point Likert scale, and the Career Anchor Inventory a six-point Likert scale.

TABLE 3

Hierarchical regression of personality traits and cognitive styles on security/stability

	Model 1				Model 2			
Variables	*B*	*SE*	*β*	*p*	*B*	*SE*	*β*	*p*
Extraversion	0.01	0.04	0.02	0.79	0.01	0.04	0.03	0.69
Agreeableness	0.08	0.05	0.14	0.14	0.08	0.05	0.14	0.11
Emotional stability	−0.02	0.05	−0.04	0.66	0.01	0.04	0.02	0.86
Knowing style					−0.08	0.10	−0.07	0.45
Planning style					0.52	0.12	0.38	0.00
Creating style					−0.23	0.14	−0.15	0.11
R^2	0.021				0.210			
ΔR^2					0.190***			

Note. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE 4

Hierarchical regression of personality traits and cognitive styles on service/dedication to a cause

	Model 1				Model 2			
Variables	*B*	*SE*	*β*	*p*	*B*	*SE*	*β*	*p*
Extraversion	−0.04	0.05	−0.06	0.47	−0.03	0.05	−0.05	0.58
Agreeableness	0.24	0.07	0.32	0.00	0.22	0.07	0.29	0.001
Emotional stability	−0.13	0.06	−0.19	0.03	−0.13	0.06	−0.19	0.03
Knowing style					0.08	0.14	0.05	0.58
Planning style					0.06	0.17	0.03	0.72
Creating style					0.41	0.20	0.19	0.04
R^2	0.136**				0.170			
ΔR^2					0.034			

Note. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE 5

Hierarchical regression of personality traits and cognitive styles on pure challenge

	Model 1				Model 2			
Variables	*B*	*SE*	*β*	*p*	*B*	*SE*	*β*	*p*
Extraversion	−0.08	0.04	−0.16	0.08	−0.06	0.04	−0.13	0.15
Agreeableness	0.06	0.06	0.09	0.36	0.04	0.06	0.05	0.55
Emotional stability	0.003	0.06	0.01	0.95	0.002	0.05	0.003	0.97
Knowing style					0.26	0.13	0.19	0.04
Planning style					−0.01	0.15	−0.01	0.96
Creating style					0.46	0.18	0.25	0.01
R^2	0.036				0.126*			
ΔR^2					0.090*			

Note. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$