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Personality Type and Work-related Outcomes:

An exploratory application of the Enneagram model.

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Abstract

Despite the Enneagram Personality Typology growing in popularity within the workplace, little research has focused in it. The aims of this study were therefore twofold. First, to establish how the Enneagram Personality Typology relates to personality approaches that are more established within the research literature and second, to explore the relationship between Enneagram types and key workplace attitudes and cognitions. In doing so, the study is the first investigation into the validity and utility of the Enneagram model as a typology approach to personality in the workplace. 416 participants, the majority in full time employment, completed a questionnaire survey assessing personality (Enneagram type, Big Five traits, personal values, implicit motives) and work-related variables (job attitudes and cognitions and occupational demographics). Enneagram types were distinguished using a unique pattern of traits, values and implicit motives, demonstrating that the typology provides a way of describing the "whole person". In addition, each of the types had different relationships with the work variables, with the Enneagram model having predictive utility on a par with the personal values and implicit motives, and in one case higher predictive utility than the Big Five. With its focus on self-development and the identification of hidden potential, the Enneagram typology might provide a powerful tool for employee development and talent management. The integrative rather than reductionist approach to personality encourages a more realistic understanding of individual behaviour at work.

Keywords: personality types; job attitudes; Enneagram; traits; values; motives

1 Introduction

Type theories of personality are popular with managers, management consultants and researchers in the field, who recognise their utility when making decisions requiring the grouping of employees on the basis of personal characteristics (e.g. Childs, 2004; De Fruyt & Mervielde, 1997; Kirkcaldy, Shephard, & Furnham, 2002). The aim of typologies is to distinguish groups of people who share a similar intra-individual structure of experience and behaviours, and identify patterns of behaviour in groups while retaining the 'wholeness' of the person (Mandara, 2003). Although sometimes criticised for oversimplifying the similarities and differences between individuals, typologies have many practical advantages. They can be easily understood by the people with whom they are used and provide a straightforward means of explaining the relevance of often complex research findings. They also have the potential to capture the dynamic interaction between traits, values and motivations within the individual. Use of the Myers-Briggs Type Indicator (Myers, 1962), for example, has been widespread for decades as a basis for improving self-awareness and thus enabling employees to realise their full potential and increase effectiveness (Childs, 2004; Fitzgerald & Kirby, 1997). Types can capture some of the intra-individual organisation of personality by showing how groups of traits are commonly found together. This is demonstrated well by the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975), which yields a four-fold typology based on the introversion/extroversion and neuroticism/ stability dimensions and is well established in terms of its human resource and career counselling applications. As Asendorpf (2002) notes, the Type approach to personality is similar to completing a jigsaw puzzle: it is an attempt to bring together seemingly unrelated results from various constructs and methods to create a picture of the whole person.

Personality models can be particularly valuable in managerial personal development. As Lee (1999) notes, individual development is inherently psychological and increased understanding of personality is particularly beneficial in management training. It is through insight into their personality and the impact of their behaviours on others that managers can identify any changes that might be needed to improve their efficacy. While some organisations fail to recognise the critical role that personal development plays in organisational development (Atkinson, 1999), interest in this area was increasing even during the tightening resources of the last recession (Lindenfield, 1995) and has continued to the present. Training to improve managers' efficacy often focuses on the manager as a person, with personal development being an essential focal point (Andersson, 2012).

There are many tools available for personal development in an organisational context, such as Personal Development Plans or 360° Feedback (Bennett, 2006), and Lee (1999) emphasises the importance of psychological understanding if managers are to make good choices about what interventions or development programmes will deliver these expected personal development outcomes. The application of psychological techniques for assessing the validity, reliability and utility of different personality models can provide managers with the information they need to make informed decisions and choose tools that will deliver what they promise, rather than getting caught up in the latest 'fad'.

The present study explores the utility of the Enneagram (from the Greek ennea meaning 'nine' and gramma meaning 'written'), a Type model of personality that is increasingly popular in the workplace but relatively new to psychological research. The Enneagram is often portrayed by trainers and practitioners as a valuable tool for personal development (Palmer, 1995), with the claim that as we understand more about ourselves we are able to respond more appropriately and effectively to the challenges around us. We aim to establish whether the Enneagram types represent parsimonious ways of grouping individuals that have practical utility for managers and trainers and whether it can therefore justifiably be used for the personal development applications to which Enneagram trainers lay claim.

1.1 The Enneagram

In the Enneagram typology, individuals are held to fall into one of nine type categories, each of which represents a preferred or habitual way of dealing with the world (Riso & Hudson, 1999). As shown in Figure 1, each type is assigned a number and the types are arranged in a circumplex that illustrates the dynamics of the system. One of the potentially promising features of this typology is that it captures some of the changes in our personal characteristics when we are under stress. Each type is connected to another by an arrow. Under conditions of stress, an individual takes on some of that connected type's more negative characteristics. Conversely, in times of security or relaxation, an individual is inclined to take on positive characteristics of the type away from which the other arrow is pointing.

FIGURE 1 ABOUT HERE

Historically, self-actualisation and the development of human potential have been regarded as spiritual processes. While the claims of popular Enneagram authors that it

represents “ancient wisdom” about the path of self-development might elicit cynicism among some academics and researchers, management researchers and practitioners should not shy away from assessing knowledge developed in traditionally “spiritual” fields for its applicability to the modern workplace. Recently, researchers have begun to investigate the relevance of these topics to management and human behaviour at work (e.g. Latham-Koenig, 1983) and progress has been such that the development of individual potential is now seen as a cornerstone of effective talent management and key to executive leadership development (Bollaert & Petit, 2010). We therefore provide a brief history of the Enneagram in Appendix A in an attempt to give a balanced introduction to the typology in its current, modern form.

1.1.1 The personality types

The use of narrative methodologies in the development of Enneagram theory has led to detailed descriptions of the nine types. These have tended to be organised initially around the distinctive worldview of each (Palmer, 1988), then elaborated in terms of common personality traits, typical behaviours and associated personal values. Unconscious motivations that lie behind the personality type are seen as a basis for explaining individual behaviour. Brief summaries of the types and their typical managerial style are presented in Table 1 (adapted from Daniels & O'Hanrahan, 2004; Goldberg, 1999; Nathans, 2004).

TABLE 1 ABOUT HERE

1.1.2 Assessment of type

On the premise that people generally know themselves and their own motivations better than anyone else does, self-assessment is the favoured method of determining Enneagram personality type. The requisite awareness of the model can be achieved by a combination of means. First, it is suggested that individuals immerse themselves in the Enneagram literature to gain a deep understanding of the theory and the nine personality types; second, working with an Enneagram professional provides information and feedback that aids objectivity in the assessment; and finally, insights may be obtained from several well-established Enneagram self-report questionnaires including, for example, the *Wagner Enneagram Personality Style Scales* (Wagner, 1999) and the *Riso-Hudson Enneagram Type Indicator* (Newgent, Parr, Newman, & Higgins, 2004). (However, it should be noted that self-report questionnaires cannot fully capture Enneagram types, as discussed in more detail below.)

These three sources are typically combined as a basis for workshops in which individuals ultimately make a self-assessment (Webb, 1996). Research has established the

reliability of this approach, showing that Cohen's Kappa Coefficient ranged from .76 to 1.00 for the stability of typing, which Wagner (1981) interpreted as evidence of good stability. In addition, scores on the Millon Illinois Self-Report Inventory scales and the Myers-Briggs Type Indicator showed significant differences between individuals across the Enneagram type categories determined in workshops (Wagner, 1983).

1.1.3 Applications of the Enneagram typology

In line with Carl Rogers (Rogers, 1951) and other humanistic psychologists, Enneagram theory holds that people develop a limited set of coping strategies and come to identify with this limited personality rather than the real self. Enneagram type thus represents a basic belief or perceptual filter about what an individual needs in life for survival and satisfaction, and how it can best be achieved (Wagner, 1996). In the Enneagram literature, 'filter' has a similar meaning to 'schema' in psychology, which Cantor (1990) describes as a record of a person's expression of underlying dispositions that ultimately reinforces those dispositions. Schemas distort perception in order to make it fit with preconceptions, limiting an individual's learning and perceived options with regard to what fits with these rigid structures. Many authors (e.g. Palmer, 1988; Riso & Hudson, 1999) consider the Enneagram to be useful not for telling people what they are, but in making them aware of how they have limited themselves. It is also distinctive in its emphasis on development with clear proposals for how each type can overcome its unconscious limitations.

One of the potential strengths of the Enneagram typology is its combination of explicit and implicit personality characteristics within each type. Explicit personality refers to those aspects that are available to the individual's conscious awareness, and can be reliably assessed by the self-report questionnaires. Although personality is often held to be analogous with these self-reports, there is evidence that much of personality is unavailable to introspection (Asendorpf, Banse, & Muecke, 2002; Wilson & Dunn, 2004). Ignoring implicit personality in favour of an exclusive reliance on self-reports restricts the study of personality to the conscious self-concept, and means that psychologists will never be able to discover more about a person than that person already knows or chooses to tell. A typology which describes patterns of explicit and implicit personality characteristics, as the Enneagram does, would therefore be of great use in identifying the workforce's hidden potential and development needs. The Enneagram therefore has the potential to contribute to both theoretical understandings of personality and practical applications. From a theoretical perspective, it provides a model of the whole self, going beyond the conscious self-reports of personality questionnaires. From a practical perspective, it can help managers to recognise

and use their full potential, even those parts they may have kept hidden from themselves. The Enneagram has been used successfully in a number of fields including psychotherapy, education and medicine, mainly to help people develop their self-awareness and in doing so, provide them with an insight into their own and others' behaviour and motivations (Riso & Hudson, 1999) thus easing personal and work relationships and lending itself to team-building. The Enneagram can also highlight a person's particular strengths and weaknesses, providing advice on how to deal with weaknesses and cautioning against applying strengths in inappropriate arenas.

There have been some notable applications of the Enneagram in work organisations. Goldberg (1999), for example, has used it in many business organisations for professional development, training, strategic planning, conflict resolution, leadership, team working and decision making as well as applying it to whole organisations in order to identify their culture and particular blind spots. Cutting and Kouzmin (2004) incorporated it into a new framework for knowledge acquisition and sense-making, while Kamineni (2005) suggested the creation of different marketing strategies for each of the nine personality types as consumers. The typology has also been theorised to relate to organisational culture with Kale and Shrivastava (2003) recommending the model as a way for organisations to improve 'workplace spirituality' and thus create a more harmonious and profitable company. In addition, Brugha (1998) included it in a proposal concerning a system for analysing development decision making in management. It is noteworthy, however, that while these various contributions offer theoretical propositions they were not tested empirically. Indeed, although increasingly used in workplace activities, the model still suffers from a lack of scientific research. The consequent absence of validity data has led to a justifiable reluctance among occupational psychologists and practitioners to adopt the Enneagram. An important objective of this study is to contribute towards validation studies of this typology, to allow managers and practitioners to make informed decisions about its utility.

1.2 The study

The validity of the Enneagram as a tool for use in organisational settings essentially rests on the extent to which the personality types are distinct from each other and whether they are associated with or able to predict work- and employee-related phenomena. Therefore, the two main Research Questions which guide this study are:

RQ1: To what extent do the Enneagram types capture distinct patterns of personality?

RQ2: How does the Enneagram compare with other models of personality in predicting work-related phenomena?

We take a neopositivist approach to these questions, using scientific methodology as the basis for understanding the complexity of human personality at work, while acknowledging that these methods are not infallible and that statistical results are open to interpretation. By attempting to test and model the relationships between personality and work variables, we hope to develop our understanding of how personality relates to work attitudes and outcomes.

1.2.1 RQ1: Personality types

To address RQ1, we tested for systematic differences between the types on established models of different aspects of personality, including the Big Five personality traits, personal values and implicit motives. We explored the idea that the Enneagram types capture distinct patterns of personality that draw on both implicit and explicit personality, and that the Enneagram model provides unique explanatory power that is not subsumed in the more established models of personality with which we compared it. Each of these models is now discussed in more detail.

Personality Traits. The Big Five model of personality traits provides a comprehensive overview of the trait domain, emphasising the aspects of personality that show stability across situations and the lifespan and having a remarkable degree of research support (McCrae & Costa, 2003). It identifies the key dimensions of openness, conscientiousness, extraversion, agreeableness and emotional stability and has proved valuable in a variety of research domains including occupational settings (Tokar, Fischer, & Subich, 1998). In developing a questionnaire to identify Enneagram type, Newgent et al. (2004) found distinctive profiles of Big Five traits associated with the type sub-scales. One objective of the present study is to extend this investigation by comparing scores on the Big Five traits to self-identified Enneagram types.

Personal Values. Evidence indicates that the values represent a related, but separate, aspect of personality to traits (Roccas, Sagiv, Schwartz, & Knafo, 2002). Enneagram type descriptions make frequent reference to the values that direct people's life and behaviour, yet there has been no research that compares the Enneagram with established theories of personal values as a means of explaining this phenomenon. The Schwartz model of human values, extensively tested and supported in over 20 countries within many occupational groups (for reviews see Schwartz, 1992; Schwartz & Sagiv, 1995), was adopted in the present study in an attempt to remedy this. It comprises ten values relating, respectively, to benevolence, conformity, tradition, security, power, achievement, hedonism, stimulation, self-direction and universalism, all arranged in a circumplex. Neighbouring items on the circle are considered to

be more compatible than are those opposite each other. Evidence indicates that the values represent a related, but separate, aspect of personality to traits (Roccas et al., 2002).

Implicit Motives. As the Enneagram types are conceived as describing a "whole person" rather than just one aspect of personality, reference is often made to the unconscious motivations that are proposed to structure personality. In Enneagram theory, these are important in determining type as different types may engage in similar behaviours for different reasons. This is one reason why self-report questionnaires are not considered adequate for the unequivocal determination of type. It would appear, however, that no research has attempted to describe these implicit characteristics of Enneagram personality types using already established models of unconscious personality. The use of projective methods such as story-telling and fantasy has enabled researchers (e.g. Schultheiss & Brunstein, 1999) to identify three major implicit motives: needs for achievement (nAch), power (nPow) and affiliation (nAff). These are subconscious desires for particular emotional outcomes rather than cognitively-based values (McClelland, Koestner, & Weinberger, 1989), and may be expected to differ by Enneagram type.

1.2.2 RQ2: Work variables

The second research question addresses the predictive validity of the Enneagram with regard to employee-related outcomes such as job attitudes and cognitions, both of which have previously been shown to be associated with personality (e.g. Shafer, 2000), and career-related factors (in terms of type of occupation and industry, employment status and level of education). We looked at whether the Enneagram types were significantly different on these variables and then tested how well the Enneagram model could predict the variables when compared to the other three models of personality (traits, values and motives), in order to determine its relative utility.

Three job related attitudes and cognitions were considered. First, job involvement which is one of the factors influencing a person's impetus to work, and can be distinguished from motivation by its basis in a person's value priorities (Cook, Hepworth, Wall, & Warr, 1981). Increased job involvement has positive pay-offs for the organisation and the employee by engaging employees more in their jobs and by providing them with a source of fulfilment at work. Past studies have shown that it is affected by personality variables (Brown, 1996). Second, self-efficacy is the belief that one has the capability to meet situational demands (Bandura, 2001), and is related to several important work outcomes including performance, learning (Chen, Gulley, & Eden, 2001), persistence at tasks and choice of vocation (Walsh, 2004). Finally, the monetary cost of stress at the workplace is very significant (about 10 % of

GNP in the UK according to Robertson (2005)) by causing decreased productivity and increased absence and turnover. Personality influences both a person's assessment of stressors and their choice of coping mechanisms (S. Cohen, Kamarck, & Mermelstein, 1983) so recognising that different personalities may need alternative help is essential.

Along with job related cognitions and attitudes, we explored the impact of Enneagram type on career-related factors. The theory of person-organisation fit proposes that people are more satisfied when working in an organisation that matches their personality (Holland, 1996), and there is clear evidence that different personalities are drawn towards particular occupations (Briggs Myers, McCaulley, Quenk, & Hammer, 1998). We therefore assessed four further variables: type of occupation, type of industry, employment status and level of education. We proposed that each of these would differ according to personality type.

On a practical level, then, this study aims to provide managers with the information they need to make an informed decision about the validity of the Enneagram typology. At a theoretical level, the findings will demonstrate the extent to which the Enneagram provides a model to combine previously disparate explicit and implicit models of personality.

2 Method

2.1 Sample

As discussed above, the most reliable way of determining someone's Enneagram type is through a long-term process of self-discovery (Gamard, 1986; Wagner, 1983). To ensure accuracy in Enneagram typing therefore, individuals were contacted who had participated in a week-long intensive Enneagram course offered by a well established specialist school, or at least three weekend Enneagram workshops run by other reputable tutors. Participants completed the survey questionnaire online where possible; a postal version was used only in cases where there was no access to the internet (9.4 % of the total).

A total of 416 participants completed the survey (mean age = 53.5 years, SD = 10.7 years; 75% female). Most were British (46%) or American (37%), and 95% were white Caucasian. Participants were highly educated, with over half having a Master's degree or equivalent. There was a fairly even split between employed (37%) and self-employed respondents (40%); the remainder (not currently employed) were excluded from job-related analyses. Statistical comparison of postal and online responses revealed a significant difference on only one of the scales, the Achievement Value ($t = -2.39$, $df = 413$, $p < .05$) and the results were therefore combined.

2.2 Measures

Respondents were asked to indicate their Enneagram type as identified during the training programme. The other measures were as follows:

2.2.1 Personality characteristics

*Personality traits***.** Big Five traits were assessed using the widely used and heavily researched 50-item questionnaire from the International Personality Item Pool (Buchanan, Johnson, & Goldberg, 2005; IPIP, 2001) with responses on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

Personal values. Participants completed the 44-item Schwartz Value Survey (Schwartz & Sagiv, 1995), an operationalisation of the Schwartz model of human values which requires that each item is rated as a 'guiding principle in my life' on a 9-point scale ranging from -1 ('opposed to my values') to +7 ('of supreme importance'). Because values are theorised to be organised in a hierarchical manner within the individual (Schwartz, 1992), raw scores were converted to a normative score by subtracting the individual's overall mean from the mean score for each value. These "centred scores" are suitable for use in t-tests, ANOVA, regression and correlation (Schwartz, 2003).

Implicit motives. These have traditionally been measured using projective techniques which are time consuming and unsuited to large-scale surveys. The method adopted in this study was a recently developed alternative, the Multi-Motive Grid, a semi-projective measure designed by Sokolowski et al (2000). It displays 14 ambiguous pictures, and participants select from several statements to describe what each picture represents, giving a score for the 'approach' and 'avoid' aspects of each motive. The 'avoid' score is subtracted from the 'approach' score to calculate a resultant motivation strength for affiliation, power and achievement respectively (Puca & Schmalt, 1999).

2.2.2 Job attitudes

Job involvement. This was assessed using three items from the Michigan Organizational Assessment Questionnaire (Cammann et al, 1979, in Cook et al., 1981) scored on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Job-related self-efficacy. Respondents completed Chen, Gulley and Eden's (2001) eight-item scale which addresses the extent to which individuals agree with statements about their ability to do their job using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Perceived stress. This was determined using the four-item Perceived Stress Scale (S. Cohen et al., 1983) which requires respondents to indicate on five-point Likert scales, ranging from 1 (never) to 5 (very often), how frequently in the preceding month they have felt under

stress, or alternatively able to deal well with life. The authors provide evidence of the validity of the instrument by demonstrating that high scores are associated with, among other things, failure to quit smoking, failure among diabetics to control blood sugar levels and greater vulnerability to stressful life-event-elicited depressive symptoms.

2.2.3 Career-related factors

Occupation. Occupations were classified according to the British government's Standard Occupational Classification (Office for National Statistics, 2000) which contains seven broad categories designed to cover the full range of jobs available in the United Kingdom, i.e. administrative/secretarial, associate professional and technical, manager/senior official, personal services, professional, sales/customer services and skilled trades.

Industry. Industrial sectors were categorised according to the UK Standard Industrial Classification of Economic Activities (Office for National Statistics, 1992) which contains 12 groupings. Although these were developed to cover British industries specifically, they were also designed to be as close as possible to EU and international systems. Forty-eight percent of respondents were employed in the education sector and 20% in health, the remainder being distributed fairly equally across the remaining categories. It was decided therefore to adopt a three-fold classification comprising education, health and 'other' for subsequent analyses.

Employment status. Respondents were asked to indicate whether they were self-employed or not. Those who had indicated they were not in work (i.e. neither employed nor self-employed) were instructed to skip employment-related questions.

Level of education. Participants were asked to indicate their highest level of formal education on a 7 point scale, ranging from basic compulsory schooling to doctoral degree.

3 Results

Table 2 summarises descriptive statistics, alpha coefficients and Pearson correlation coefficients for all scales used in the study. The majority of alpha coefficients are above Nunnally's (1978) criterion of acceptability of .70, and compare well with those obtained in previous studies. Five of those relating to scales in the Schwartz Value Survey (benevolence, conformity, tradition, security and power) failed to meet the criterion, but were at least consistent with the alphas reported elsewhere (Schwartz & Sagiv, 1995). Published alternative methods of assessing internal consistency for this instrument suggest that its reliability is, in fact, at least adequate (Schwartz & Sagiv, 1995). While the alpha reliability for one of the implicit motives was low (nAch = .56), the Multi-Motive Grid does appear to be the best method available for measuring implicit motives in a questionnaire survey so, in

the absence of any serious alternative, it was retained with an awareness of its possible limitations.

INSERT TABLE 2 ABOUT HERE

There were some statistically significant, though weak, correlations between Big Five traits, consistent with current thinking that the traits are not completely orthogonal (Saucier & Goldberg, 2003). Scores on the personal values scales correlated extensively with each other as would be expected of a circular structure intended to capture the interrelationships between them (Schwartz, 1992). The implicit motives also correlated with each other as would again be expected of an interactive motivational system (McClelland et al., 1989). Participants' attitudes towards, and cognitions about, their jobs were also intercorrelated. There were numerous relationships between Big Five traits and personal values, but neither showed correlations with implicit motives, which is again consistent with previous findings (Asendorpf et al., 2002). Job Involvement was correlated with some values, but not explicit personality traits nor implicit motives, while perceived stress was associated with traits and motives but not values. Job self-efficacy was related to all three aspects of personality. Overall, a complex relationship between personality and job-related attitudes and cognitions is indicated and subsequent analyses explored these relationships further.

3.1 Differences between the Enneagram types

ANOVAs were conducted to determine whether Enneagram types differed significantly from each other with regard to the dependent variables. There was a significant effect of type on all Big Five traits, on eight out of ten personal values and all three implicit motives (Table 3). Effect sizes for the Big Five were medium to large, while those for personal values and implicit motives ranged from small to medium, according to Cohen's (1988) guidelines for the interpretation of eta squared.

INSERT TABLE 3 and 4 ABOUT HERE

Bonferroni post-hoc tests (Table 4) indicated that these significant effects were due to a complex combination of differences between the types. All types differed from at least two others on the agreeableness scale, with Type 2s scoring significantly higher than six other

types. All types also differed from at least one other on the conscientiousness factor, with Type 1s being significantly higher than all except Type 3s. Extraversion revealed a similar pattern, with all types being significantly different from at least two other types on this scale, and Type 5s scoring significantly lower than all other types. All types also differed from at least one other on emotional stability, with Type 4s scoring significantly lower than six other types. Six of the nine Enneagram types also scored differently from each other on openness to experience.

Enneagram type had a significant effect on all but two of the personal values (benevolence and security). Post-hoc Bonferroni tests showed a complex array of differences between the individual types on the remaining values. Type 8s valued conformity significantly less than Type 1s, and tradition significantly less than Type 5s and Type 9s. Type 3s valued power more than Type 4s, while Type 8s valued it significantly more than Type 4s, 5s, 7s or 9s. Achievement was valued more by Type 3s than all types except Type 2s and Type 8s, and less by Type 5s than Type 1s and Type 2s. Type 7s valued hedonism more than all types except 8s and 9s. Stimulation showed the greatest number of differences between the types. Type 4s, 7s and 8s each valued this more than Type 1s, 5s, 6s and 9s. Type 7s valued self-direction more than Type 1s and Type 9s. Type 3s valued universalism less than Types 5s and Type 9s.

For the implicit motives scales, Bonferroni post-hoc tests revealed that Type 3s were significantly higher on need for achievement than Type 1s and Type 4s. While the main effect of type on need for affiliation did not translate into any significant differences between individual types, Type 3s did have a significantly higher need for power than Type 1s, 4s and 5s, and Type 4s were lower on this motive than Type 7s.

Discriminant analysis can be used similarly to regression, but to predict a categorical variable. It identifies the combination of variables that best predicts membership of cases in a categorical dependent variable, in this case identifying the traits, values or motives that best predicted each Enneagram type (Table 5). Group sizes were based on equal prior probabilities as there is no published information on the proportions of each type to be found in the population. Accuracy of the classifications was determined by cross-validation, which is a preferable estimate of accuracy in the general population as it does not over-fit to the data: each case is classified by the discriminant functions derived from all cases except that one.

Using the Big Five traits as predictor variables, four discriminant functions emerged as significant, accounting for 98% of the variance. Cases were classified into the correct Enneagram type with a cross-validated accuracy of 32% (three times the level of chance,

which is 1/9 or 11%). For some types, accuracy was much higher than this, being around 50%.

INSERT TABLE 5 ABOUT HERE

The analysis was repeated using the personal values as predictor variables. There were four significant discriminant functions, explaining 89% of the variance, and cases were classified with 24% cross-validated accuracy (twice the level of chance). Interestingly, the pattern of correct classifications was different when using the personal values. For example, Enneagram Type 8 had a classification accuracy of only 7% using the Big Five, but 38% using the personal values.

The implicit motives also proved useful for classifying individual types. For example, Type 3, which could not be classified correctly using the Big Five, had a cross-validated classification accuracy of 46% using the implicit motives.

The variables from all three models were used in a fourth analysis, again using stepwise variable entry. Five functions emerged as significant, explaining 96% of the variance. The functions used a combination of traits and values, and were able to classify the cases at a rate 3 to 4 times that of chance for most types. The only exception was Type 6. Overall, this combination was more successful than any of the three models alone.

3.2 Job attitudes and career-related factors

ANOVAs showed that Enneagram type had a significant effect on job involvement (F (8, 299) = 1.96, $p < .05$) although the effect size ($\eta^2 = .05$) was small and post-hoc Bonferroni tests did not detect any significant differences between individual types. Type also had a significant effect on job self-efficacy (F (8, 299) = 4.49, $p <0.001$). This was a medium effect size ($\eta^2 = .11$), and the post-hoc tests indicated that Type 3s had significantly higher job self-efficacy than Type 1s, 4s, 5s and 9s while Type 8s had a higher score than Type 9s. There was no effect of type on perceived stress (F (8, 299) = 1.44, $p > .05$).

Chi-squared tests were conducted to compare each Enneagram type with the rest of the total group in respect of education, occupation, industry and employment status. Significant differences are summarised as follows:

Type 8s had a significantly different spread of results from the rest of the group, (χ^2 (3) = 14.91, $p < .01$) in terms of their occupation, with fewer Type 8s in the professional occupations and correspondingly more in both manager/senior official roles and associate

professional/technical roles. Type 1s differed from the group as a whole on the type of industry in which they worked (χ^2 (5) = 13.98, $p < .05$). Type 1s were more likely to work in education and the miscellaneous 'other' sectors (the raw data suggested that this was due to a higher number of Type 1s working in IT), and less likely than other types to work in business services or professional services. Type 1s were more likely not to be in employment (i.e. retired or unemployed) than the rest of the group, and less Type 1s were self-employed than the group as a whole (χ^2 (2) = 7.99, $p < .05$). Type 2s had a greater percentage at a lower level of education (A-level or equivalent and vocational) than the rest of the group (χ^2 (7) = 20.17, $p < .01$).

Four separate multiple regression analyses were conducted to determine whether or not each of the personality models (Big Five, values, motives, Enneagram) could predict job attitudes (job involvement, job self-efficacy and perceived stress). Indicator variables were used to code the Enneagram types for this purpose and the type with the largest number of respondents (Type 6) as the comparison group. The variables from each model were entered as a block using the stepwise procedure as the aim was to compare the four different models in terms of their ability to predict job attitudes. Lower and upper limit *F*-value thresholds of .05 and .10 respectively were used to determine whether or not a variable should be included. Results are detailed in Table 6.

INSERT TABLE 6 ABOUT HERE

Job involvement could be significantly predicted by variables from the Enneagram (R^2 = .031, F (2, 318) = 5.08, $p < .01$) or the personal values (R^2 = .084, F (4, 308) = 7.09, $p < .001$) models but not the Big Five or implicit motives. Job self-efficacy could be predicted by all four personality models: the Big Five model (R^2 = .208, F (5, 308) = 16.23, $p < .001$); personal values (R^2 = .137, F (2, 309) = 24.44, $p < .001$); implicit motives (R^2 = .054, F (2, 312) = 8.96, $p < .001$); and Enneagram type (R^2 = .102, F (4, 310) = 8.78, $p < .001$). Similarly, perceived stress was predicted by all four models although in this case the Big Five model accounted for a substantially larger amount of variance (R^2 = .291, F (3, 312) = 42.71, $p < .001$) than personal values (R^2 = .013, F (1, 312) = 3.99, $p < .05$), implicit motives (R^2 = .056, F (1, 315) = 18.66, $p < .001$) or Enneagram type (R^2 = .027, F (2, 314) = 4.33, $p < .05$).

4 Discussion

This study is one of the first attempts to scientifically evaluate the Enneagram model and its application to management practice. While there is much more work to be done, as discussed in section 4.1, the results provide a sound basis for future testing and research. The practical utility of the Enneagram in applications such as personal development is based on the extent to which it can be considered a valid model of personality. If it does indeed describe reliable and valid types of personality, it can be used effectively to develop the self-knowledge that Lindenfield (1995) has suggested is key to personal development and increased managerial effectiveness. From a more theoretical point of view, one of the Enneagram's potential advantages is its ability to provide a useful structure for linking models of different aspects of personality, which according to Asendorpf (2002) is one of the major potential contributions of a type approach to personality.

The main aim of the study, therefore, was to determine whether or not the Enneagram is a useful and valid model of personality in occupational settings. Discriminant analysis showed that a combination of traits and values was the best means of discriminating between Enneagram types. There was also evidence that variables from all three models (traits, values and implicit motives) were useful for classifying individual types. These results contribute to theoretical understandings of personality by suggesting that the Enneagram types cannot be reduced to a set of scores on a single model, for example a simple profile on the Big Five, but that each type describes a meaningful grouping of people who share a pattern of personality traits, values and motives spanning all three models.

Our first research question addressed the extent to which the Enneagram types capture distinct patterns of personality. Findings from the ANOVAs indicate, first, that the Enneagram types capture important differences between people, and, second, that these differences are not limited to one aspect of personality. The medium to large effect sizes found for the Big Five were further explored with Bonferroni post-hoc tests and showed significant differences between all nine types on extraversion, agreeableness, emotional stability and conscientiousness, and between the majority of the types on openness to experience. Similarly, there were significant differences between the types on all but two of the personal values, with Stimulation showing the greatest number of differences in the Bonferroni post-hoc tests. Types were also significantly different from each other on the implicit motives, though effect sizes here were smaller than for the Big Five, and the need for power showed the highest number of significant differences between types in the post-hoc tests. The differences between types identified in this research align with the descriptions of those types available in the literature, indicating that the types in the Enneagram can be

clearly identified using a specific pattern of descriptors emerging from the combination of personality models.

In addition, the Enneagram provides a theoretical model for relating different aspects of personality to each other. For example, Type 4s, in comparison with others, are likely to be less emotionally stable and more open to experience, place a higher value on stimulation and self-direction and be less motivated by the need for power. Awareness of these combinations of traits, values and motives has clear implications for practice including, for example, assisting in career choice and highlighting particular difficulties that individuals may face at work. It would also enable employers to identify employee needs for access to appropriate support or training. Providing tailored assistance of this kind is essential: Type 7s and Type 4s are relatively unlikely to need support for dealing with organisational change as they actively seek out new experiences and are open to change whereas Type 1s and Type 9s would be very likely to benefit, bearing in mind that they not only find change difficult, but tend to value traditional ways of doing things.

The numerous independent attempts at definition of Enneagram types in the popular literature have inevitably led to some lack of clarity. The present findings, demonstrating the combination of features emerging from the trait, values and motives models that best capture the distinctiveness of each type, provide an informed basis for refining the descriptions. This will increase the confidence with which the Enneagram can be applied in employee development and human resource decisions.

Perhaps one of the most noteworthy findings of this research is that, although there is good evidence for the types having distinctive profiles on the three personality models employed in the study, the Enneagram cannot be subsumed into any of these models or even into a combination of all three. The most accurate classification of any type using discriminant analysis was 53% for Type 9 using the Big Five, 39% for Type 8 using Values, 46% for Type 3 using Implicit Motives and 52% for Type 7 using all three models, though a combination of traits, values and motives was the most accurate overall. This appears to indicate that the Enneagram contains a great deal of information that is not captured in these individual models. The nature of this information, and how it relates to the variables investigated in the present study, is a question for future research.

Our second research question investigated the utility of the Enneagram in predicting work-related phenomena and compared it to other models of personality. ANOVAs and post-hoc Bonferroni tests demonstrated that there were significant differences between the types on job involvement and job self-efficacy, though not on perceived stress. In addition, chi-

squared tests indicated that types differed significantly in terms of career demographics, including occupation, industry and education level. On the evidence of these results, several managerial implications can be outlined and the following recommendations can be made to employers.

First, Type 5s and Type 9s may benefit from training designed to improve their job-related self-efficacy, i.e. their confidence in their ability to do their job. Caution is necessary here, however, as this research did not examine the effect of these individual differences on job performance and it would be inappropriate, in the absence of relevant evidence at this stage, to use the Enneagram as an employee selection tool.

Second, the regression analyses indicated that variables from each of the personality models were responsible for a small but significant amount of the variance for several job attitudes. The Big Five model was the most powerful in this respect, accounting for 29% of the variance in perceived stress. The Enneagram and the personal values models, however, were able to predict job involvement where the Big Five could not. Overall, the results indicate that while the Enneagram may not be as effective in predicting job attitudes as the Big Five, it has a similar utility to that of the personal values and implicit motives models.

Third, differences between the Enneagram types in terms of education level, occupation, industry and employment status suggest that assessment of personality type may be useful in making career-related decisions.

Finally, this study has provided strong evidence of the validity of Enneagram theory, particularly with regard to bringing together explicit and implicit personality. It can provide researchers and practitioners with a way of integrating models which until now have apparently had little connection with each other, using an integrative rather than a reductionist approach to understanding human behaviour at work.

4.1 Limitations and Further Research

It is important, however, to recognise limitations of the study. First, the measurement of implicit motives, using the Multi-Motive Grid, was not ideal. Although it remained the best option available for a large scale survey, a deeper study of implicit motives as they relate to Enneagram types, using the best validated idiographic methods, would be helpful. Second, analysis of work outcomes was confined to job attitudes and cognitions, and further examination of Enneagram types in relation to performance variables, would be of particular interest to practitioners. The present findings provide a basis for future hypotheses and research in this area. Third, as mentioned earlier, some of the scales have low reliabilities and conclusions based on these scales should be treated with caution. Fourth, there are

methodological issues that need to be addressed. There is the possibility of sample bias owing to the voluntary involvement of participants in Enneagram training, and this necessitates caution in the generalisation of results to the wider working population. This issue should not, however, be allowed to discourage further research in this area. The possibility of sample bias will reduce as Enneagram training becomes more widespread and involves those who have not pursued it simply out of personal interest.

Besides this study's assessment of the Enneagram, there are several promising avenues for further research. There are several other aspects of the model that deserve consideration, such as the descriptions of how personality changes in times of stress or how the types are related to each other. It would also be useful to know, for example, how the Enneagram compares to other models in developing self-awareness. Finally, as the Enneagram is often promoted as a means for encouraging life-long development, investigation of the longer term impacts of learning about and applying this model of personality would also be valuable.

4.2 Conclusion

This paper has described some first steps in validating the Enneagram typology, providing evidence of its concurrent and predictive validity through theoretically sound links with three other models of personality and significant relationships with several workplace outcomes. As a type model of personality, the Enneagram describes significant real-world groupings of individuals who share patterns of traits, values and motives, and therefore provides a potentially useful new tool for practitioners to apply in management training and personal development.

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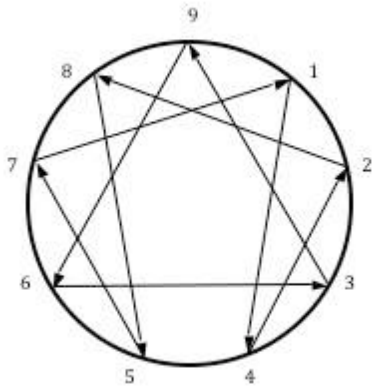

Figure1. The Enneagram

Table 1: Brief descriptions of the Enneagram personality types

Enneagram Type	Brief description	Typical managerial behaviour
Type 1s (often called Perfectionists)	perceive the world as being judgemental and inclined towards punishing bad behaviour and impulses. People of this type believe they can only gain love through being good, correcting error and meeting their own high internal standards. Their attention is directed towards identifying error.	Type 1 managers do things by the book and focus on quality. They ensure that everyone knows precisely what he or she is responsible for, although they can have difficult delegating out of fear the work will not be done correctly. This means they often use quite a directive style of control. Very sensitive to those who are trying to improve, Type 1s will support and encourage their subordinates' development.
Type 2s (Givers)	believe that in order to have their own needs met, they must give. This type tries to gain love and get their personal needs met by giving others what they need and expecting others to give in return. Attention is directed towards identifying the needs of others.	Type 2s have an indirect style of leadership, preferring to be the power behind the throne and to lead by enthusiastic encouragement. While their people skills make them excellent at attracting important people to become involved in whatever project they are working on, they can focus on their favourites to the detriment of the "out-group".
Type 3s (Performers)	perceive that the world only rewards people for what they do, rather than who they are. People of this type believe they can only gain love through success and portray this successful image to others and themselves. Attention naturally focuses on tasks and things to accomplish.	Type 3 managers are in their natural element. They would prefer to be leaders than followers, and can adapt their style of leadership to suit the group they are with. Their focus on goals and end-results can encourage them to use any means necessary and they may sacrifice quality. They thrive on practical results and will set clear targets and responsibilities, with frequent progress checks, in order to ensure success.
Type 4s (Romantics)	experience a world in which an idealised love is missing. They believe the real connection can be found in a unique, special love or situation and strive to make themselves as unique as possible. Attention is directed towards what is	Type 4s are bold, effective leaders in high-risk situations, enjoying the thrill of being on the edge. They make original contributions and like to leave their distinctive mark on projects. They are also very good at bringing compatible

Enneagram Type	Brief description	Typical managerial behaviour
	missing rather than what is present.	people together and lead with the force of their personality. They may have problems if the situation seems to need a compromise with their vision.
Type 5s (Observers)	experience a world which they consider to be too demanding and giving too little in return. They therefore come to believe they can gain protection from intrusion by learning self-sufficiency, limiting their own needs and gaining knowledge. Attention is given to detaching themselves from the world in order to observe it.	Type 5 managers are very focused on the job, which can mean they do not pay as much attention as they should to the people. They are good at delegating to other people and expect subordinates to be independent and not need support. Their control over information is very strong and they only give out what they think is necessary. While holding to the general project outline, 5s are able to adapt to new information to the core idea and be flexible in their approach.
Type 6s (Loyal Sceptics)	perceive the world as hazardous and unpredictable. To gain security and certainty, people of this type attempt to mitigate harm through vigilance and questioning. Attention is directed towards worst case scenarios.	Type 6 managers work best when fighting the odds, for example when a business needs to be turned around. A difficulty for Type 6 leaders is their ambivalent feelings about being successful: they are reluctant authorities and may become authoritarian to mask their own doubt. Thoughtful and determined, 6s are protective of their subordinates and prefer to manage by building coalitions and getting people on board.
Type 7s (Epicures)	perceive the world as frustrating, limiting or painful. They believe that frustration and pain can be escaped and a good life can be assured by going into opportunities and adventures. Attention focuses on options and keeping life 'up'.	Type 7 managers are good at planning a positive future vision which they can communicate to other people enthusiastically and they take action by empowering subordinates. They work best in a fast-paced, quickly changing environment and can think and act quickly under pressure, gathering together different kinds of information into coherent patterns. However, they can become easily distracted and follow their own interests if the project becomes repetitive.
Type 8s (Protectors)	see the world as a hard and unjust place where the powerful take advantage of the weak. People of this type try to assure	Type 8s do not hesitate in taking the lead and are suited to unstable environments, when a strong leader is needed who

Enneagram Type	Brief description	Typical managerial behaviour
	protection and gain respect by becoming strong and powerful and hiding their vulnerability. Attention goes towards injustices and to what needs control or assertiveness.	can be direct and assertive and take charge. They are good at leading in competitive situations or crises, but can become bored with daily management. Although they are sparing with praise for subordinates, they are very protective of those they see as under their authority and will not try to shirk responsibility.
Type 9s (Mediators)	perceive the world as considering them to be unimportant. They believe they can gain acceptance by attending to and 'merging' with others, i.e. blending in with everyone else. Attention is directed towards others' claims on them.	As managers, Type 9s are good at routine implementation and can be relied upon over the longer term. They have a participatory style, wanting to include everyone and share the credit for success. It comes easily to them to delegate to others and they come up with systematic solutions which allow everyone to participate. However, they tend to evade conflict and are reactive rather than proactive.

Table 2. Descriptive statistics, Pearson correlations and Cronbach alpha coefficients (*n* = 416)

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
1. Agreeableness	4.14	.59	(.82)																				
2. Conscientiousness	3.67	.65	.05	(.89)																			
3. Extraversion	3.25	.83	.28**	-.04	(.79)																		
4. Emotional Stability	3.13	.80	.04	.11*	.19**	(.88)																	
5. Openness to Experience	3.96	.56	.10*	-.06	.21**	-.06	(.76)																
6. Benevolence	5.40	1.02	.23**	.15**	.09	-.01	-.08	(.61)															
7. Conformity	4.22	1.28	.10	.28**	-.04	.05	-.14**	.55**	(.69)														
8. Tradition	3.17	1.44	.04	.15**	-.10*	-.01	-.16**	.41**	.61**	(.63)													
9. Security	3.74	1.29	.05	.30**	.13**	.04	-.05	.43**	.57**	.43**	(.64)												
10. Power	2.14	1.42	-.09	.15**	.24**	.02	.03	.13**	.30**	.21**	.48**	(.60)											
11. Achievement	4.14	1.45	.05	.23**	.27**	.04	.06	.39**	.39**	.20**	.48**	.57**	(.75)										
12. Hedonism	3.84	1.67	.15**	-.05	.28**	.10*	.10	.12*	.09	-.02	.32**	.32**	.33**	(.75)									
13. Stimulation	3.78	1.62	.05	-.08	.34**	.04	.26**	.18**	.08	-.01	.27**	.36**	.46**	.51**	(.74)								
14. Self-direction	5.13	1.24	.13*	.05	.19**	.03	.34**	.37**	.18**	.09	.32**	.18**	.46**	.40**	.55**	(.71)							
15. Universalism	5.19	1.08	.14**	.01	-.01	-.01	.06	.55**	.31**	.26**	.31**	.04	.28**	.26**	.27**	.47**	(.74)						
16. nAch	1.13	3.08	.00	-.02	.16**	.14**	.00	.04	.03	.02	.10*	.12*	.16**	.16**	.05	.04	-.01	(.56)					
17. nAff	1.07	2.96	.11*	-.01	.29**	.23**	-.03	.06	.02	-.05	.07	.04	.07	.22**	.16**	.06	.05	.42**	(.68)				
18. nPow	1.11	2.40	.01	-.09	.17**	.09	-.08	.04	.00	-.07	.05	.09	.16**	.09	.07	-.03	.00	.34**	.30**	(.72)			
19. Job Involvement	4.16	1.26	.00	.06	.08	-.03	-.01	.08	.06	.04	.05	.22**	.21**	-.03	.19**	.05	.08	.02	-.02	.08	(.68)		
20. Job Self-Efficacy	3.95	.63	-.02	.24**	.28**	.26**	.18**	.08	.09	-.09	.14*	.25**	.35**	.14*	.31**	.26**	.08	.15**	.19**	.18**	.17**	(.89)	
21. Job Stress	2.33	.70	-.07	-.15**	-.25**	-.50**	-.06	.03	-.02	.00	-.11*	-.10	-.05	-.06	-.02	-.02	.01	-.14*	-.24**	-.05	-.02	-.39**	(.75)

Alpha co-efficients are in parentheses
*$p < .05$; **$p < .10$

Table 4: Bonferroni post-hoc comparisons of mean scores by Enneagram Type

	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9
Big Five									
Agreeableness	4.15[a,b]	4.64[a,c,d,e,f,g]	4.13[c,h]	4.28[i,j]	3.69[b,d,h,i,k,l]	4.11[e,k]	4.02[f,m]	3.86[g,j,n]	4.43[l,m,n]
Conscientiousness	4.14[a,b,c,d,e,f,g]	3.63[a]	3.89[h,i]	3.54[b]	3.70[c,j]	3.77[d,k]	3.40[e,h]	3.56[f]	3.29[g,i,j,k]
Extraversion	3.20[a,b]	3.62[c,d,e]	3.71[f,g,h]	3.19[i,j]	2.44[a,c,f,i,k,l,m,n]	3.05[d,g,k,o]	3.88[b,j,l,o,p]	3.52[m]	3.09[e,h,n,p]
Emotional Stability	3.01[a]	3.27[b]	3.33[c]	2.56[b,c,d,e,f,g]	3.22[d]	2.92[h,i]	3.54[a,e,h]	3.13[f]	3.43[g,i]
Openness to Experience	3.85[a,b]	3.82[c,d]	3.78[e,f]	4.21[a,c,eg]	3.92	4.03	4.24[b,d,f,h]	3.95	3.77[g,h]
Values[1]									
Benevolence	1.12	1.30	0.82	1.14	1.14	1.25	0.93	1.09	1.34
Conformity	0.25	-0.19	0.11	-0.17	0.07	-0.01	-0.31	-0.37	0.06
Tradition	-1.05	-1.16	-1.42	-1.02	-0.77[a]	-1.03	-1.31	-1.73[a,b]	-0.73[b]
Security	-0.49	-0.55	-0.31	-0.78	-0.55	-0.29	-0.61	-0.45	-0.66
Power	-2.09	-2.23	-1.59[a]	-2.54[a,b]	-2.43[c]	-1.92	-2.32[d]	-1.44[b,c,d,e]	-2.32[e]
Achievement	0.02[a,b]	0.13[c]	0.80[a,d,e,f,g,h]	-0.27[d]	-0.63[b,c,e]	-0.09[f]	-0.24[g]	0.02	-0.52[h]
Hedonism	-0.63[a]	0.08	-0.80[b]	-0.84[c]	-0.72[d]	-0.67[e]	0.48[a,b,c,d,e]	-0.27	-0.31
Stimulation	-0.78[a,b,c]	-0.60	-0.32	0.02[a,d,e,f]	-0.96[d,g,h]	-0.90[e,i,j]	0.30[b,g,i,k]	0.19[c,h,j,l]	-0.93[f,k,l]
Self-direction	0.61[a]	0.83	0.77	1.11	1.06	0.75	1.31[a,b]	0.87	0.53[b]
Universalism	0.92	0.80	0.56[a,b]	1.08	1.18[a]	0.84	0.71	0.85	1.20[b]
Motives									
nAch	0.75[a]	2.08	3.04[a,b]	0.17[b]	0.71	1.19	1.09	1.61	0.91
nAff	0.51	1.76	2.21	0.51	0.88	0.45	2.13	1.37	0.89
nPow	0.69[a]	1.29	2.57[a,b,c]	0.11[b,d]	0.57[c]	1.14	1.71[d]	1.47	1.44

[1]Centred scores were used, as described in the Measures section.
Significant differences ($p<.05$) between pairs of Types are indicated by matching superscripts.

Table 5. Percentage of cross-validated cases correctly classified by the discriminant functions

	Big Five	Values	Motives	All three models
EType 1	44.4*	27.9*	1.6	27.4*
EType 2	33.3*	10.3	10.3	35.9*
EType 3	0	25*	46.4*	33.3*
EType 4	38.8*	14.9*	34.7*	42.9*
EType 5	48*	28*	0	44*
EType 6	1.7	22.4*	13.8*	15.5*
EType 7	42.2*	31.8*	24.4*	52.3*
EType 8	7.7	38.5*	0	30.8*
EType 9	53.3*	18.2*	6.7	48.9*
Total % of cross-validated cases correctly classified	31.6*	24.1*	13.7*	36.1*

* indicates % correct classification is above chance (11%)

Table 6. Standardised beta values for variables included in stepwise regression equations

	Big Five		Values[1]		Motives		Enneagram[2]	
Job Involvement			Achievement	-.115*			EType 8	-.150**
			Hedonism	-.192***			EType 1	-.114*
			Stimulation	-.178**				
			Power	-.121*				
R^2			*.084*				*.031*	
Job Self-Efficacy	Extraversion	.254***	Achievement	-.291***	nAff	-.155**	EType 3	-.232***
	Conscientiousness	.245***	Stimulation	-.205***	nPow	-.134*	EType 8	-.158**
	Emotional Stability	.198***					EType 7	-.120*
	Openness to Experience	.141**					EType 9	-.113*
	Agreeableness	-.127*						
R^2	*.208*		*.137*		*.054*		*.102*	
Perceived Stress	Emotional Stability	-.458***	Security	-.112*	nAff	-.236***	EType 1	.134*
	Extraversion	-.170**					EType 4	.116*
	Conscientiousness	-.110*						
R^2	*.291*		*.013*		*.056*		*.027*	

* indicates p<0.05, ** indicates p<0.01, *** indicates p<0.001

[1] Normally, the personal values would not all be entered together as their circular structure implies a certain degree of inter-correlation. However, when the aim of the analysis is simply to identify the amount of variance accounted for by the model as a whole, rather than identify the regression coefficients for each value, it is possible to use all ten values (Schwartz, 2003). For this reason, the β values for the individual variables reported in Table 5 should be treated with caution.

[2] Type 6 (the largest group) was the comparison category.

Appendix A: A brief history of the development of the Enneagram Typology

In contrast to other personality theories, the body of knowledge associated with the Enneagram has developed largely through an oral tradition and until recently was passed on from teacher to student rather than written down (Wagner, 1981). It was important to early teachers that students began to disseminate knowledge only when they had truly understood it, the intention being to avoid distortion. Consequently, its exact origins are difficult to identify, and there is some controversy over how and when it emerged.

The first systematic account of the Enneagram was provided in the 1920s by George Gurdjieff, a Russian teacher and thinker who perceived the Enneagram to be a means of acquiring insight into human development rather than a basis for the classification of personalities. It was Oscar Ichazo, a Bolivian philosopher and founder of the Arica Institute in Chile, who first assigned personality descriptions to the nine categories, and thus created the model as it is known today. Claudio Naranjo, a Chilean psychiatrist and student of Ichazo, further developed the theory by, among other things, defining the nine personality types in psychological terms, and subsequently introduced it to his students at the University of California as part of a self-development programme.

Although Naranjo initially preferred to follow the oral tradition of non-disclosure, several of his students brought the Enneagram into the public domain through teaching and workplace applications during the 1980s. Particularly noteworthy in this respect is Helen Palmer, author of one of the first books on the model (Palmer, 1988), who, with David Daniels, founded a school that still teaches the Enneagram to practitioners. Palmer went on to develop Enneagram theory by describing the typical focus of attention of each type, and explaining how this relates to intuitive understanding. Another of Naranjo's original students, Robert Ochs, a Jesuit priest, introduced the model to colleagues, and this led to its widespread dissemination within the Roman Catholic Church. It is applications of this kind that have prompted interest among academic psychologists, and stimulated attempts to relate the Enneagram to existing personality theory.

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