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## Personality and Career Orientation of Business Students

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## ACTA WASAENSIA

CONTENTS	page
ACKNOWLEDGEMENTS	3
ABSTRACT	6
1. INTRODUCTION	7
1.1 Research question and objectives of the study	9
1.2 Key concepts	10
1.3 Background of the study	14
1.3.1 Personality approach in this study	16
1.3.2 Career approach in this study	20
1.3.3 Summary of earlier studies related to MBTI and career orientations	24
1.4 Research methodology	27
1.4.1 Research strategy	27
1.4.2 Sample	27
1.4.3 Instruments	28
1.4.4 Procedure	29
1.4.5 Statistical analysis	29
1.4.6 Reliability and validity	30
1.5 Summary of articles	32
1.6 Conclusions and contribution of the study	35
1.7 Limitations and further studies	40
REFERENCES	42
2. ARTICLES	
Järnlström, M. (2000). Personality preferences and career expectations of Finnish business students. <i>Career Development International</i> 5:3, 144–154.	55
Järnlström, M. (in press). Relationship between MBTI profiles and work environments of business students. <i>Journal of Psychological Type</i> .	67
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**ABSTRACT**

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Personality and career orientations were studied in a sample of Finnish business students. In this study, personality was determined with the Myers-Briggs Type Indicator (MBTI) which is based on Jung's theory of psychological types. Career orientations were studied in the following frameworks: Schein's career anchors, Holland's work environments and Katz's status of employment choice. Three individual articles are based on these frameworks while the personality has been the main predictor in all articles. The main research question was whether personality influences career orientation.

Even though career aspirations have been studied among adolescents extensively, only few studies have concentrated on business students' career aspirations. Similarly, there have been a number of studies of career aspirations without relation to personality, even though a close relationship between personality and career has been found. A sample of 533 business students was collected in 1996 and 1997 at the university of Vaasa. Two questionnaires were filled in: the MBTI and the Vocational orientation form. The open answers related to career aspirations were classified by two raters for different classes based on the career orientation frameworks. Chi square analysis was used to analyze the results.

In the first article, the career aspirations were divided according to Schein's career anchors. Most of the students preferred the following anchors: Technical competence, Managerial competence, Independence, and Pure Challenge. The E-I ( $p < .01$ ), T-F ( $p < .01$ ), and J-P ( $p < .001$ ) dichotomies of the MBTI statistically related to career anchors. In the second article, the career aspirations were categorized according to Holland's work environments. Business students preferred mostly Enterprising, Social and Conventional environments as expected. The E-I ( $p < .001$ ), S-N ( $p < .001$ ), and T-F ( $p < .001$ ) dichotomies of the MBTI related statistically to Holland's work environments as well as type level ( $p < .001$ ). In the third article, the career aspirations were divided according to Katz's status of employment choice. Most of the students preferred organizational employment to entrepreneurship. The J-P dichotomy ( $p < .05$ ) of the MBTI was statistically related to status of employment choice. In many cases, the hypotheses were supported.

Overall, the results indicated that personality has an influence on business students' career orientations. In addition, all MBTI dichotomies are of value for predicting the differences among career orientations, even though theoretically the role of the S-N and T-F dichotomies of the MBTI has been stressed. This study also emphasizes the role of E-I and J-P dichotomies depending on the career orientation framework.

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**Keywords:** Personality, MBTI, career aspirations, career orientation, business students.

## 1 INTRODUCTION

Today, it is possible to make several career decisions during a lifetime. Even so, the career choice is one of the most important choices an individual makes in his or her life. In many cases, the choice is an easy and natural one. However, there are numerous people who are unsure about their future occupation. Even if they have started their studies in some special area, for example in business, there are still difficult decisions to be made, including, for example, what kind of business to specialize in studies. The choice can be especially difficult for those who have talents for several careers.

Career aspirations can be studied through career orientations – What do we prefer and aspire to in the occupational world? By career orientation we mean a preference for one type of career rather than others. Career aspirations and career orientations can be seen as a subgroup of career choice.

There has been an increasing number of studies related to career aspirations of adolescents and students. Also the career choice has been interested researchers for years, and remains an interesting topic among academics. Changes in occupational life have also had an effect on research trends. For example, information technology has increased studies related to professional IT (information technology) career paths. Another major change in occupational markets has been that organizations have flattered and work design has changed. Accordingly there are fewer managerial positions available. In the field of business, this trend, besides possible changes in values, might have implications also for students' career aspirations. In line with other changes, the career aspirations may change over decades and thus they need to be updated.

The present study explores personality and career aspirations of Finnish business students in career orientation frameworks. The study is composed of three articles, each studying the career aspirations of business students from different career orientation viewpoints, while bearing in mind throughout the process the wisdom produced by a holistic view of the career orientation of business students. The development theories of career aspirations as well as

theories related to personality development excluded from this study. The reason for this is based on theoretical assumptions which indicate that career aspirations are rather realistic and crystallized in this age (Ginzberg, Ginsburg, Axelrad & Herma 1951). Similarly Jung (1921/1990) maintained that personality preferences are acquired early in life and become distinct as the person matures. Even so, according to Jung (1921/1990), the personality shows trends of development also in adulthood. An example of this is individuation, which is a process of differentiation, having for its goal the development of the individual personality (Jung 1921/1990: 448–450). Jung's theory of psychological types involves dynamic aspects among personality theories.

Besides personality, there are other psychological and non-psychological factors which certainly have implications for career orientations. Even so, this study is concentrated only on personality aspects. It is expected that people differ in the ways they like to use their minds, and that these differences influence the ways people like to work, what motivates them, and what satisfies them (see Myers & McCaulley 1985). It is assumed that when personality and career orientation are congruent, individuals are more satisfied and fulfilled in their careers. Correspondingly, if there is a mismatch between personality and career, a person's job is less satisfying and less fulfilling (see Holland 1985; Myers & McCaulley 1985).

At the organizational level, career orientations play an ever more significant role as organizations focus more on human resources planning and development. An organization that focuses on human resources planning must be concerned not only with organizational effectiveness, but also with individual effectiveness. With the help of the personality aspects and career orientation of a person, it is easier to place people in suitable positions. When there is a match between person and career, the results are rewarding for both the individual and the organization. With good career management, it is possible to reduce turnover. Personality and career orientations are starting-points in career management for example identifying and developing entrepreneurial, management and leadership abilities.



Organizations should also be aware of the career aspirations of students because they have a direct link, for example, to their recruiting processes. The students studied here are about to enter working life. What to offer if it is not known what is valued and needed among these future employees?

### 1.1 Research question and objectives of the study

Even though it is expected that personality has an influence on career choice and thus also on career orientation via career aspirations, the main research question of the present study is:

**Does personality have an influence on business students' career orientations?**

To be able to answer the main question, the following secondary questions were formed:

*Does personality have an influence on the choice of career anchor?*

*Does personality have an influence on the choice of working environment?*

*Does personality influence the choice of organizational or entrepreneurial employment aspiration?*

The general purpose of this study is to acquire a better understanding of business students' personality and career orientations. On this basis, the current dissertation has at least the following objectives:

- 1) *to describe the personality types and career orientations of business students*
- 2) *to study the relation between the MBTI profiles and career orientation frameworks*
- 3) *to identify the possible differences in business students' career orientation by their personality.*

In Figure 1 the framework of this study is presented. Personality was used as the main predictor in the study. In the first article, the relationship between personality and career anchors was studied. In the second article, the research focus was on personality and working environments, and in the third one, on personality and status of employment choice. In the following chapters, the key concepts will be presented.

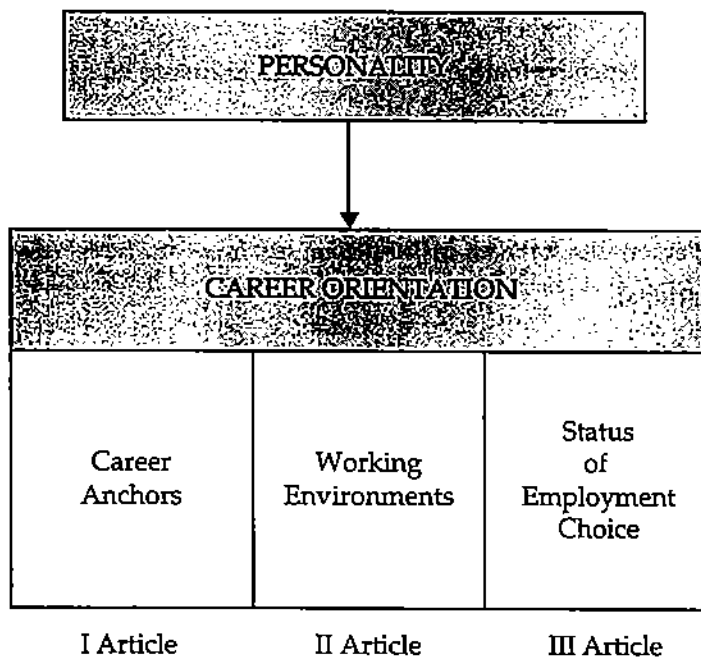


Figure 1. The framework of the study.

## 1.2 Key concepts

### *Personality*

A theory of personality is an organized system of beliefs that helps us to understand human nature. There is little general agreement among personality theorists on the appropriate use of the term personality. Each personality theorist presents his or her own understanding of the term personality based on their

theoretical positions, and thus the term personality has many definitions. For example, Pervin (1996: 414) has given the following definition of personality:

"Personality is the complex organization of cognitions, affects, and behaviors that gives direction and pattern (coherence) to the person's life. Like the body, personality consists of both structures and processes and reflects both nature (genes) and nurture (experience). In addition, personality includes the effects of the past, including memories of the past, as well as constructions of the present and future."

In this study the enduring behaviors of the individual describe his/her personality. The terminology related to personality is derived from Jung (1921/1990) and Myers and McCaulley (1985). According to Jung (1921/1990: 463-465), personality is defined as "different aspects of the soul as it functions in the world". Jung conceived the structure of personality as "a complex network of interacting systems that strive toward eventual harmony." The primary ones are the *ego*; the *personal unconscious* with its complexes; and the *collective unconscious* and its archetypes.

Dichotomy literally means a division into two distinct parts. The two parts are assumed to identify opposite domains of mental functioning or attitudes. Dichotomous constructs differ qualitatively as well as quantitatively from continuous variables. The four dichotomies of the MBTI are Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving. Each dichotomy comprises two such preferences. Attitude means extraversion-introversion in Jung's theory. In MBTI usage, the term attitude also refers to the judging-perceiving dichotomy. Attitude is interchangeable with the term *orientation*. Function or process describes one of the four basic mental processes of sensing, intuition, thinking, and feeling. In the field of personality, and specifically for the MBTI, personality type (e.g. ESTJ and INFP) is a unique combination of mental attitudes (E or I and J or P) and mental functions (S or N and T or F) that is *more than the sum of its parts*. Specifically, one of the 16 combinations of four preferences, each with specific characteristics is postulated from the dynamics of the theory. (Myers, McCaulley, Quenk & Hammer 1998.)

Traits and types are two different constructions of personality (Meehl 1992). The use of the term *trait* implies that the personality dimension is measured on a continuum between two extremes. A *type*, on the other hand, is usually thought of as a relatively discrete category. MBTI stands for the Myers-Briggs Type Indicator. However, in this study, it also indicates Myers' type theory (Myers & McCaulley 1985).

### *Career*

The terms "occupation" and "career" are often used as synonyms. Actually, they have rather different meanings. An *occupation* is a type of work activity in which people engage, a group of similar tasks organized in similar ways in various establishments, an activity that has a market value and in which people are therefore paid to engage. A *career*, by contrast, is according to Arthur, Hall and Lawrence (1989: 8) "the evolving sequence of a person's work experiences over time". According to Derr (1986), a career is a long-term work history characterized by an intended and intentional sense of direction that allows and honors aspects of one's personal life. Careers have traditionally been thought of as a meaningful progression through a series of related jobs (White 1995). Herriot (1992) has introduced the "careers-in-the-head" idea. According to this view, beliefs and values, expectations and aspirations, are just as important as sequences of positions held. It introduces the internal perspective, and the subjective approach. In this study, Herriot's (1992) view is mainly adopted.

### *Career aspirations and expectations*

First of all, there are many concepts which describe career aspirations. Even though different concepts are used, the definitions are sometimes almost similar depending on the researcher. Even in this study, the same phenomenon has interchangeably been described as career aspirations, career expectations or career orientation in a quite similar sense. In this study, *career expectations* generally mean all those long-range expectations which concern qualities of work; they represent a subjective career view (e.g. Arthur 1994).

In this study, **career aspirations** are defined as the career hopes if there is no reality constraint. In other studies, the differences between these concepts are described as follows. **Career aspirations** are the goals an individual has in relation to obtaining employment in a particular career field (Marini 1978; Rosenberg 1957). Whereas aspirations represent an individual's ideal occupational choice, expectations are assumed to be representative of those occupations the individual believes to be realistic or accessible (Davey & Stoppard 1993; McNulty & Borgen 1988). Aspirations are not necessarily indicators of eventual attainment; however, they have considerable psychological meaning and predictive value to identify future educational and career options (Holland & Gottfredson 1975). Other concepts which are quite near of the earlier concepts are work goal, work value, job orientation or desired job characteristics (Bu & McKeen 2001).

#### *Career orientation*

Schein and Van Maanen (1977) postulate that one's self-definition of a career, or the internal career, is a person's own subjective idea about work life and his or her role within it. *Internal career* considerations focus on the individual's self-concept and career values. An important element of an employee's internal career is the career anchor or career orientation (DeLong 1982; Schein 1975). According to Schein (1978), the function of work is to support and make possible a career that the person values. Thus, his concepts are similar to what other researchers have called *career values* (Arthur et al. 1989).

Schein (1978) has defined career orientation in terms of the preferred self-perceived *talents and abilities; motives and needs; attitudes and values* that people have and which together make up the career anchor. According to Schein (1978: 158), "the career anchor is that element in our self-concept that we will not give up, even if forced to make a difficult choice". Following Allen and Katz (1986), the career orientation is defined in this study as a preference for one type of career path rather than others.

*Other related concepts*

**Intentions** are assumed to capture the motivational factors that influence behavior; they are indicators of how hard people are willing to try in order to perform the behavior (Ajzen, 1991). One possible definition of motivation is interest. Dawis (1991) notes that the major distinction between interests and values is that values focus on the relative importance of things to a person, whereas interests focus on the relative liking or disliking of things. There are a variety of models proposed for the structure of vocational interests. The model proposed by Holland (1973, 1985) has received the most attention in literature. His model has become the standard model for conceptualizing vocational interests and environments (Borgen 1986).

*Locus of control* (Rotter 1966) refers to the degree to which people perceive success and failure as being contingent upon personal initiative rather than by chance or environmental factors. *Self-esteem* refers to how favorably individuals evaluate themselves (Brockner 1988; Turban & Dougherty 1994). High self-esteem individuals perceive themselves more positively and believe they are more capable and competent to cope with different situations and tasks.

In the next chapter, a theoretical basis of this study will be presented. However, the studies related to career orientations and MBTI are presented in the articles and thus not presented here.

### 1.3 Background of the study

Occupational aspiration and its role in career choice and attainment have provided increasing interest and can be clearly seen in the number of articles published during recent years (Rojewski & Yang 1997). Past studies have focused on a number of topics including the role of aspirations on career compromise and circumscription (Armstrong & Crombie 2000; Holt 1989; Lapan & Jingleleski 1992; Leung 1993), the effectiveness of early aspirations in predicting vocational

choice and attainment (Gottfredson, Holland & Gottfredson 1975; Hart 1990; Holland, Gottfredson & Baker 1990; Trice & Hughes 1995), the relationship between career aspirations and career expectations (Luzzo 1995; McNulty & Borgen 1988; Young 1984), the influence of aspirations on pursuit of educational and occupational opportunities (Lent, Brown & Hackett 1994, 1996; Rosenbaum 1981), the role of occupational prestige on occupational aspirations (Biggerstaff 2000) and the impact that factors like gender (Chow 1995; Davey & Stoppard 1993; Farmer 1983; Post-Kammer & Smith 1986; Maxwell & Cumming 1988; Weinberg & Tittle 1987), locus of control (Mau, Domnick, & Ellsworth 1995; Rojewski & Yang 1997) or race/ethnicity minorities (Arbona & Novy 1991; Evans & Herr 1994; Leung & Ivey 1994; McNair & Brown 1983; Reyes & Kobus 1999) have on aspirations.

Although extensively studied, more research on students' career aspirations has been called for by researchers (Fournier 1997; Ackah, Heaton & McWhinney 1999). The importance of developing a better understanding of graduates' career patterns and aspirations has been pointed out. Previously Holland and Gottfredson (1975) have emphasized the role of career aspirations as they have considerable psychological meaning and predictive value when it comes to identifying future educational and career options.

Melin (2001) has noted that the entrepreneurial aspirations of students is the area where more research is needed. Especially in the field of entrepreneurship, research focusing on personality characteristics to describe the entrepreneurial career decision has been inconsistent (Scherer, Brodzinski & Wiebe 1989). Further, only few studies have been concentrated on business students' career aspirations (Nordgren 1985; Martin & Bartol 1986; McNulty & Borgen 1988), and even in those cases, the viewpoint has mainly been gender (e.g. Nordgren 1985). Thus, there are only few studies where the personality view has been adopted concerning business students' career aspirations.

The idea that personality relates meaningfully to the kinds of careers people choose has a long history (e.g. Roe 1957). For example Jung (1921/1990) has

stated that personality preferences influence our choice of careers, ways of thinking, relationships, and work habits. Although research on the effects of personality on career behavior is old, a number of personality variables have actually been ignored (Betz, Fitzgerald & Hill 1989). More recently, for example Nordvik (1996) has emphasized the effect of personality on career choice.

### 1.3.1 Personality approach in this study

There is no single unifying theory of personality within psychology. Several attempts have been made to classify personality theories (e.g. Atkinson, Atkinson, Smith, Bem & Nolen-Hoeksama 1996; Engler 1991; Mischel 1999; Pervin 1996). Personality approaches differ in three major respects concerning the extent to which they emphasize the role of external (situational) forces or that of stable psychological (person) forces; the extent to which they provide procedures for measuring individual differences so that the personalities of individuals may be examined and the personalities of different people compared; and the extent to which they would like the theories to be used to cultivate freedom in human nature or to exercise greater control over it (Mischel 1999; Engler 1991). For example, Mischel (1999) identified five major approaches to personality: (1) *psychodynamic*, (2) *trait and biological*, (3) *phenomenological*, (4) *behavioral* and (5) *cognitive-social*.

The trait approach to personality has been the most thoroughly researched. In trait approach, the psychologists generally agree that personality is composed of a variety of traits, or dispositions to behave in certain ways, on which people differ and that these individual differences may be organized hierarchically. However, consensual taxonomy of personality traits does not exist even though the past two decades have witnessed an emerging convergence of views regarding the structure of phenotypic personality traits. The Big Five, as they are often called, consist of five trait dimensions: *Extraversion*, *Agreeableness*, *Conscientiousness*, *Neuroticism*, and *Openness to Experience* (Goldberg 1981; McCrae, Costa & Busch 1986; Norman, 1963). Each of these five dimensions represents



a variety of more discrete traits. For example, Openness to Experience is seen in imaginativeness, aesthetic sensitivity, depth of feeling, curiosity, and need for variety (McCrae et al. 1986). According to Bayne (1995), this five factor theory currently dominates personality research.

An alternative approach to understanding personality in terms of traits is to think about it in terms of types, or in terms of a personality typology. One of the best known typology approaches has been provided by Jung (1921/1990). According to Mischel (1999), Jung's analytical psychology represents a subgroup of psychodynamic approaches. This study is based on Jung's (1921/1990) theory of psychological types as interpreted by Myers (Myers & McCaulley 1985).

In Jung's theory (1921/1990) of psychological types, all conscious mental activity can be explained in terms of two basic attitudes (Extraversion and Introversion) and four functions – two perception processes (Sensing and Intuition) and two judgment processes (Thinking and Feeling). In each person, one of the attitudes and functions is dominant and its opposite is weaker. Jung's typology has led to the development of assessment and research concerning psychological types (Engler 1991).

#### *The Myers theory*

The MBTI operationalizes Myers type theory (Myers and McCaulley 1985) which incorporates and expands upon Jung's personality type theories (Jung 1921/1990). Myers theory added the J-P (Judging and Perceiving) dichotomy thus increasing the number of options from 8 (Jung) to 16 (Myers). The J-P dichotomy of the MBTI describes identifiable attitudes and behaviors with reference to the outside world (Myers & McCaulley 1985). According to Myers et al. (1998), there are four separate dichotomies shown in Table 1 in which people can differ: Extraversion versus Introversion (attitudes or orientations), Sensing versus Intuition (functions or processes), Thinking versus Feeling (functions or processes), and Judging versus Perceiving (attitudes or orientations). An individual is assumed to have a preference for one in each pair of opposites over the other. There are conceptual linkages between the Big Five personality traits

and the MBTI typology (McCrae & Costa 1990; McCrae et al. 1986). Besides, both are used to describe a person's typical behavior patterns.

**Table 1.** The four dichotomies of the MBTI (Myers & McCaulley 1985).

<b>E-I</b>	<b>Extraversion</b> Directing energy mainly toward the outer world of people and objects	<b>Introversion</b> Directing energy mainly toward the inner world of experiences and ideas
<b>S-N</b>	<b>Sensing</b> Focusing mainly on what can be perceived by the five senses	<b>Intuition</b> Focusing mainly on perceiving patterns and interrelationships
<b>T-F</b>	<b>Thinking</b> Basing conclusions on logical analysis with a focus on objectivity and detachment	<b>Feeling</b> Basing conclusions on personal or social values with a focus on understanding and harmony
<b>J-P</b>	<b>Judging</b> Preferring the decisiveness and closure	<b>Perceiving</b> Preferring flexibility and spontaneity

According to the theory, one pole of each of the four preferences is preferred over the other pole. The preferences in each group of four are independent of preferences for the other three, so these four groups of preferences make sixteen types. There are specific dynamic relationships between the preferences. For each type, one process is the leading or dominant process and a second process serves as an auxiliary. Each type has its own pattern of dominant and auxiliary processes and the attitudes. It is reasonable that people develop greater skill with the processes they prefer to use. (Myers & McCaulley 1985.)

Several personality theories, concepts and instruments could be used to examine the issues and concerns represented here. However, this study is based on Jung's (1921/1990) and Myers' type typology (Myers & McCaulley 1985). These psychological constructs are especially measurable with the MBTI. Even though certain criticisms (Garden 1991; McCrae & Costa 1989) and limitations (Zemke 1992) concerning the use of the MBTI have been reported, there are other studies which support its validity and reliability (e.g. Carlyn 1977; Murray 1990;

Thompson & Borrello 1986), and use in career research (Hammer & Macdaid 1992; Martin & Bartol 1986). One of Myers' original motives for creating the Myers-Briggs Type Indicator was to help individuals choose work which would best suit their talents and which would be consistent with their type preferences (Myers 1992). Besides, some of the earliest validating data for the MBTI was in the area of career choice (Myers & McCaulley 1985). Further, the MBTI is the most widely used personality instrument in the world (Myers et al. 1998). Overall, the typology approach has many advantages (Maddi 1968).

According to the type theory, personality type is more likely to affect the choice of career than vice versa (Myers & McCaulley 1985). The S-N function of the MBTI is expected to have the most influence on career choice as it determines to a large extent what will interest people. The next most important function is T-F, which determines the kind of judgment which is easier and more agreeable to use. The attitudes, E-I and J-P are thought to be most useful in helping the person choose (or create) a specific working environment or choose a particular organization within a given field. (Myers & Myers 1990) According to Hammer and Macdaid (1992), the J-P dichotomy of the MBTI is the one least likely to reflect attraction to a particular occupational field.

In Finland the studies related to the Myers type theory have increased during the last few years. In the Finnish studies, Myers' theory has been related for example to the following topics: Strategic decision making and thinking of managers (Gallén 1997, 1999), international orientation of entrepreneurs (Routamaa, Vesalainen & Pihlajaniemi 1996), networking attitudes of entrepreneurs (Routamaa & Varamäki 1998), creativity orientations of managers (Asikainen 1996; Asikainen & Routamaa 1997), leadership styles (Routamaa & Ponto 1994; Routamaa, Honkonen, Asikainen & Pollari 1997; Routamaa & Pollari 1998; Routamaa 2001), life-style (Hautala & Routamaa 2001; Routamaa & Pehkonen 1999) stress (Routamaa & Honkonen 1998), teamwork effectiveness (Honkonen & Routamaa 1997), organizational change (Routamaa & Honkonen 1996), learning styles (Honkonen 1994), prisoners' types (Alanko, Routamaa & Valkealahti 2001) and career aspirations (Honkonen & Routamaa 1996;

Honkonen & Routamaa 1996; Honkonen 1998; Honkonen 1999; Järnlström 2001; Routamaa & Honkonen 1996).

### 1.3.2 Career approach in this study

There is not a uniform standard by which to classify career theories (Lähteenmäki 1995). However, reviews of career theory consistently suggest that the field is composed predominantly of *psychological* and secondarily of *sociological views*. For instance, Sonnenfeld and Kotter (1982) identified four types of career theory. The first type is sociological and concerned with *social class* determinants of career outcomes. The second type is psychological and concerned with static *dispositional differences* and their occupational implications. The third is of mixed psychological–sociological origins, focusing on the *career stages* that surround occupational choice and development. The last is principally psychological and focuses on the broader notion of the *adult life course* and the relationship of the career to other major life activities.

According to Neiner and Owens (1985) and Osipow (1990), theories of a *non psychological nature* assert that factors external to the individual account for the choice of a career whereas *psychologically based theories* attempt to explain career choice from the perspective of the individual. This study represents psychologically based theories as presented earlier. For example Bell and Staw (1989) have stressed, that it is time to revitalize the psychological view of career studies.

Some of the theoretical frameworks for the career orientation will be presented in this chapter focusing on the career orientation frameworks used for this study. Holland's (1985) and Schein's (1978, 1985) career orientation frameworks are best known and mostly studied and thus selected to this study. They are also among the original ones. Besides these frameworks, status of employment choice defined by Katz (1992) was selected for the third framework. The reason for selecting this framework was basically the earlier mentioned desire to study entrepreneurial aspirations. Even though Schein's (1985) career anchor frame-

work is possible to apply to entrepreneurial aspirations, Katz's (1992) framework provides a clearer distinction between entrepreneurial and organizational employment aspirations (see also Carland & Carland 1992). Later other career orientations will be presented. However, these career orientation frameworks seem to be based partly on Schein's career orientation frameworks.

### *Career anchors*

Career anchor theory is widely cited in human resources management texts (e.g. Leibowitz, Farren & Kaye 1986; Dessler 1991). The theory was developed by Schein (1978, 1985) at the Massachusetts Institute of Technology. It stemmed from a longitudinal study of MBA graduates using interviews to examine job histories and the reasons behind career decisions. Career anchors emerged as a way of explaining the pattern of reasons given by the graduates as they progressed through their careers. While the original research was built around a study of managers, career anchors are now widely applied to all levels of employees (Schein 1996). Correspondingly, broad distribution of career anchors have been found in every occupation (Schein 1996).

Schein's (1978) initial research identified five career anchors: Technical competence, managerial competence, security, autonomy and creativity. He later added three more: Service, pure challenge and lifestyle (Schein 1985). Schein (1985) also cites two potential anchors, variety and power, but claims that both of these form elements of existing anchors and are not an overriding influence in themselves. Schein (1978) claims that people really differ in how they see their careers, even from a fairly homogeneous background. For example, only 25% of management students had managerial competence as their career anchor (Schein 1996).

Schein (1978) defined a career anchor as a pattern of self-perceived talents, motives, and values that serve to guide, constrain, stabilize and integrate an individual's career. In theory, it is expected that people have only one dominating career anchor. Thus, Schein (1978) argues that anchors may appear

to be changed through work experience as a consequence of greater self-knowledge. On the other hand, Derr (1986) has proposed that career orientations can change with age and due to external influences.

#### *Working environments*

The most researched and best documented theory of career orientation is Holland's profiles (Weinrach 1984; Holland 1973). Holland's (1985) theory views vocational interests as expressions of personality and posits that individuals seek a work environment that corresponds to their strongest personality orientations, values, attitudes and needs. The theory espouses the view that those who choose a particular vocation have similar personalities and similar histories of personal development. Also, great attention is paid to the role of background experiences in personality formation.

Holland has identified six personality orientations and six corresponding work environments: realistic, investigative, artistic, social, enterprising, and conventional. The relationship among the six personality orientations or work environments is hypothesized to be a hexagon (RIASEC), in which the geometric distance between the personality orientations or work environments is inversely related to the psychological similarity between them. According to Holland, most people can be categorized as one of six types or combinations of these types. (Holland 1985.)

Most research based on Holland's theory is concerned with students and educational environments. A large body of research provides strong support for the ability of Holland's theory to distinguish among individuals in various college majors and occupations (Eberhardt & Muchinsky 1984; Holland 1985; Osipow 1983). However, few attempts have been made to test the applicability of the theory specifically to business students. One of the attempts has been made by Martin and Bartol (1986).

*Status of employment choice*

Entrepreneurship can be considered as set of behaviors that initiates and manages the reallocation of economic resources and whose purpose is value creation through those means (Schumpeter 1934; Herron & Robinson 1993). A problem concerned with differentiating between those selecting to start a business and those choosing organizational employment is understandable because of the activating role entrepreneurs have in economic development. The basic assumption is that entrepreneurs are in some way different from the general population or from managers and this difference can be explained in terms of the entrepreneur's personality profile. Overall, from the point of career theories, little work has been reported related to entrepreneurs (Arthur et al. 1989; Dyer 1994; Katz 1994).

The concept employment status choice refers to the career 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). According to Katz (1992), Schein (1978) and Ronstadt (1988) have provided the theoretical background to entrepreneurship. Following Katz (1992), an entrepreneurial career can be obtained by purchase, inheritance or by starting a new firm. Thus self-employed includes all groups of entrepreneurs or small business owners (Katz 1992). More precisely, for example Pihkala (2001) has reviewed studies related to the entrepreneurial career path.

*Other career orientations*

Derr (1986) has proposed five career orientations which look like compressed descriptions of Schein's (1978) categories, i.e., Getting Ahead, Getting Secure, Getting Free, Getting High, and Getting Balanced. Driver (1982) surveyed business executives and staff specialists in a variety of companies and formulated from their self-perceptions a quartet of definitions of career success. He described four career concepts: the transitory career concept, the steady-state career concept, the linear career concept, and the spiral career concept.

According to Driver (1982), the career concepts grow out of the habits of thought, motives, and decision-making styles, becoming the foundation which guides a person's long-term career choices. Further, Allen & Katz (1986) distinguished three career paths among engineers and scientists. The career paths were a movement upwards on a managerial ladder, or a technical ladder, or movement across a series of interesting projects irrespective of promotion. The relation to Schein's (1978) career cycle seems to be evident. Overall, all career types have their strengths and their place in a successful ongoing organization.

As will be shown, most studies have concentrated on only one career orientation framework. This study makes an attempt to present an overall picture in which MBTI dichotomies and types are related to Schein's, Holland's and Katz's frameworks.

### 1.3.3 Summary of earlier studies related to MBTI and career orientations

#### *MBTI and career anchors*

Only one study was found in which MBTI and career anchors were included. Nordvik (1996) studied the relationships between variables measured by the Myers-Briggs Type Indicator and ipsative scales measuring the concepts in Holland's theory of vocational personalities and Schein's theory of career anchors by analysing data from Norwegian adults. Here only the results related to MBTI and career anchors will be presented. Nordvik (1996) created career anchors of four factors in the following way: *stimulation* (pure challenge and managerial competence)–*comfort* (security and service); *technical skill* (technical competence)–*managerial competence* (managerial competence); *self-direction* (autonomy)–*belongingness* (security); and *self-expression* (life-style and creativity)–*helping others* (service).

The relationship between MBTI and career anchors was as follows (Nordvik 1996): extraversion, intuition and thinking related to *pure challenge and managerial*



*competence* (stimulation) whereas introversion, sensing and feeling related to *security and service* (comfort). Introversion and sensing related to *technical competence* (technical skill) and extraversion and intuition related to *managerial competence* (managerial competence). Intuition and perceiving related to *autonomy* (self-direction) and sensing and judging to *security* (belongingness). Introversion and intuition related to *life-style and creativity* (self-expression) and extraversion and sensing to *service* (helping others). From this point of view, it is expected that all dichotomies of the MBTI might be related to career anchors.

The studies related to MBTI and values (e.g. Grant 1965; Johnson & Coppola 1990; Smith 1989) and study of MBTI and career paths (Garden 1997) were considered important for hypotheses formulation between MBTI and career anchors.

#### *MBTI and working environments*

According to several studies, there is correlation between MBTI profiles and Holland's work environments (e.g. Dillon & Weissman 1987; Hammer 1996; Hammer & Kummerow 1996; Martin & Bartol 1986; Myers & McCaulley 1985; Nordvik 1996). However, the results have not been uniform and in most cases, the correlations have been moderate or low. The results have been most consistent between the S-N and T-F dichotomies of the MBTI and Holland's vocational profiles. The positive associations have been made between sensing-intuition and Conventional and Artistic working environments and between thinking-feeling and Realistic and Social environments (Dillon & Weissman 1987; Hammer 1996; Nordvik 1996; Myers & McCaulley 1985).

The results in the E-I and J-P dichotomies of the MBTI have been one-sided: positive associations have been found between extraversion and Enterprising (Dillon & Weissman 1987; Hammer 1996; Nordvik 1996; Myers & McCaulley 1985), and judging and Conventional (Dillon & Weissman 1987; Nordvik 1996; Myers & McCaulley 1985). Overall, according to Hammer (1996) and Nordvik

(1996), the J-P dichotomy of the MBTI has not been significant as related to Holland's framework.

*MBTI and the status of employment choice*

No studies were found in which MBTI and organizational employment versus entrepreneurship would have been related. However, there are other studies which it is possible to relate to this phenomenon. Firstly, there are several studies related to MBTI and managers (Walck 1992). For example, the TJs predominate at all organizational levels among American managers (Reynierse 1993). Also the results of the Finnish managers are in a similar line (Routamaa, Honkonen, Asikainen, Pollari 1997).

Secondly, in several studies it has been proposed that entrepreneurs differ from persons who rather select large organizations or companies (e.g. Brenner, Pringle & Greenhaus 1991; Kolvereid, 1996). The MBTI profiles of managers and entrepreneurs have been compared with each other. Carland and Carland (1992) reported in an empirical test that entrepreneurs were more likely to display the NT temperament while the small business owners and managers were more likely to display the SJ temperament. However, the empirical results of Carland and Carland (1992) indicated that entrepreneurs tended to be NPs whereas managers tended towards SJ. Similarly, Ginn and Sexton (1990) found that fast-growth entrepreneurs showed significantly higher N, P and NP orientations than managers. Further, according to Reynierse (1995), entrepreneurs had more EPs, NPs, and TPs, but fewer IJs, SJs, and FJs. Based on these results, it is expected that the S-N and J-P dichotomies of the MBTI are related to the status of employment choice.

## 1.4 Research methodology

### 1.4.1 Research strategy

This study represents normal science. Thus, research is carried out on the basis of prior knowledge and research (Barnes 1991). The research philosophy of this study represents positivism (Easterby-Smith, Thorpe & Lowe 1991). For example the objectivity of the researcher, formulation of hypotheses, and large samples are related to positivism. According to Neuman (1997), positivists often try to convert the data into a quantitative form or analyze it using quantitative methods. The nomothetic research approach (Neilimo & Näsi 1987) is closely related to positivism and has been applied in this study. It stresses the need for seeking more descriptive data about a large population. In this kind of study, questionnaires are useful (Babbie 1979). This study is empirical as personality and career aspirations of business students were asked by questionnaires. Although the data was collected in two consecutive years, this study utilized a cross-sectional survey design. The data was analyzed as a one sample. It is expected that career aspirations are similar in this period.

This study represents a psychological approach to career theories. The main focus is on career orientation theories. The internal career view is emphasized (see Arthur et al. 1989). This study is also personality research as it is based on Jung's (1921/1990) analytical theory among personality theories as interpreted by Myers & McCaulley (1985).

### 1.4.2 Sample

The data were collected in September 1996 and 1997. Altogether 533 business students were included in the study. Within this group there were 55% males and 45% females. Their major subjects were mainly accounting, marketing and management besides other minor groups. The mean age of the subjects was 22. The sample was collected during a management and organization lecture at the

University of Vaasa. This is an obligatory course which business students take at the beginning of their university studies. The objective was for the sample to provide a total picture to business students' personality profiles and their career aspirations. For example, by collecting data by post the response rate would have been much lower, nor would the sample have been equally representative.

#### 1.4.3 Instruments

The Myers-Briggs Type Indicator is a personality indicator that is based on Jung's theory of psychological types and further developed by Myers (Myers & McCaulley 1985). In this study personality was measured by the Myers-Briggs Type Indicator (MBTI), translated into Finnish and validated by professor Vesa Routamaa's research team at the University of Vaasa. The MBTI (Form F) is a 166-item forced choice questionnaire aimed at measuring the Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving dichotomies described earlier. In completing the MBTI, the respondent chooses between two or sometimes three alternatives per item. The choices are based on how the respondent usually feels or acts or, in some cases, on which alternative is more appealing. Questionnaires are widely used especially in investigations of opinions and preferences (Easterby-Smith et al., 1991). With questionnaires it is possible to gather relatively extensive samples in reasonable time and with reasonable effort.

*The Career Orientation Questionnaire* included external variables (gender, age, major, father's and mother's occupations) and an open-ended question about career aspirations: "Next, describe as accurately as possible your future job. The job does not have to be realistic or practical. Write frankly about your dreams, what you would like to do, when and how." For example Armstrong and Crombie (2000) and McNulty and Borgen (1988) included a similar question in their study concerning career aspirations of students.

#### 1.4.4 Procedure

Business students filled in the MBTI and the career orientation questionnaire described above in a classroom session. The questionnaires were a compulsory part of the studies. The results were interpreted about one week later. Some of the subjects were excluded from the analysis because their psychological preferences were unclear, i.e. less than nine scores. The answers about career aspirations were written out and read carefully and classified by two raters. The analyses were done separately without the raters knowing each other's results.

#### 1.4.5 Statistical analysis

Nominal scales are probably more widely used than any others in the social sciences and business research (Emory 1985). Nominal scales indicate no order or distance relationship and have no arithmetic origin. In this study chi-square analysis will be performed by cross-tabulation. Each personality dichotomy will be used as an independent variable, and career orientations as dependent variables. For categorical variables, cross-tabulation is one commonly used method of analysis (Ghauri, Gronhaug & Kristianslund 1995). Also a typology approach typically has more simple statistical analyses than for example a trait approach (Maddi 1968).

In two articles, the Selection Ratio Type Table (SRTT) analysis was performed to compare Finnish business students with Australian post graduate students and U.S. working MBA students. The Selection Ratio Type Table was devised by Isabel Myers as a way of displaying the distribution of types within a sample and for comparing different samples (McCaulley 1985). It makes either the chi-square or Fisher's test depending on the number in each cell. If the Index is greater than 1 the proportion in the sample is larger than the proportion in the base. If the Index is less than 1, the proportion in the sample is smaller than the proportion in the base.

#### 1.4.6 Reliability and validity

**Reliability.** Reliability refers to how consistently an instrument measures what it is supposed to measure (Zeisset 1996). If a test or method of assessment is reliable, it will give reproducible and consistent results (Emory 1985). With reliability analysis it is possible to ensure that the measure is relatively free from error and yields consistent results (Babbie 1979).

Split-half reliability and test-retest reliability are possible to perform with the MBTI (Zeisset 1996). Split-half reliability is measured by dividing a single scale into two halves and correlating them (Myers & McCaulley 1985: 165; Zeisset 1996). It estimates the degree of consistency across items. According to Zeisset (1996), test-retest reliability is the type of reliability that deals with the stability of test scores over time and is found by administering the same test to the same people on two different occasions.

**MBTI.** The internal consistency analysis used was based on the split-half continuous scores. The commonly used method of reliability, namely coefficient alpha was performed. High coefficient alpha indicates that the sample of items performs well in describing the construct and vice versa (Hyvönen 1990). The results of reliability of the studied MBTI version indicated relatively good internal consistency. The lowest value was on the S-N scale. As the retest was not done in this study, test-retest reliability could not be measured. Other researches have reported test-retest reliability of the MBTI (see e.g. Carlson 1985; Gardner & Martinko 1990; Heikkilä-Laakso 1995). In this study, the lower scores (generally less than 9 scores) of the MBTI preferences were excluded from further analysis as far as reliability was concerned.

**Career orientation form.** The open answers about career aspirations were classified according to career orientation frameworks by two analyzers. Both raters had studied highly theoretical descriptions of different career orientations and their sub-classes. Similarly as when using interviews, defining the reliability and

validity of classifying is difficult. For the reliability in this study, the inter-rater agreement was performed by correlation analysis (Hennessey & Amabile 1988).

**Validity.** Reliability is a contributor to validity and is a necessary but not sufficient condition for validity. Validity refers to the extent to which a test measures what it is intended to measure (Zeisset 1996). A special kind of validity, which applies especially to tests used in personality research, is called construct validity (Myers et al. 1998). Construct validity refers to the way that a measure relates to other variables (Stewart, Hetherington & Smith 1984). According to Hyvönen (1990), factor analysis can be used to infer validity.

**MBTI.** MBTI scores generally correlate with other measures as theory predicts, and do not correlate with measures theory does not predict (see Myers & McCaulley 1985; Zeisset 1996). Overall, the Manual (Myers & McCaulley 1985) provides support for the validity of the MBTI when used as intended. For example, Carlyn (1977) has shown that the validity of the MBTI constructs compares favorably with similar personality variables measured by other instruments. For a validity of the MBTI studied, the continuous scores made for the split-half analysis were tested to find whether the measured scales actually load on the expected factors. Varimax rotated factor analysis was performed. The results suggested that the items in the questionnaire consistently measure the same construct.

*Career orientation form.* Similar types of question related to career aspirations have been asked earlier, for example by Armstrong and Crombie (2000). The question related to career aspirations was seen to be relevant as the open answers could be analyzed in a reasonable way in career orientation frameworks. Also the relationship between the MBTI preferences and career orientations seemed appropriate. In addition, the results supported the earlier studies.

### 1.5 Summary of articles

Personality and career orientations of Finnish business students were studied. Only the main results will be presented here. More detailed results are available in the articles included.

#### *Sample characteristics*

As presented in Table 2, the most frequent personality types of Finnish business students were ESTJs, ISTJs and ENTJs. TJ types have been over-represented also in other business students' data (Power, Kummerow & Lundsten 1999; Myers & McCaulley 1985) and managerial data (Routamaa et al. 1997; Walck 1992). These types can be describe as logical decision-makers.

**Table 2.** The type distribution of the Finnish business students (N=533).

<b>ISTJ</b> n=66 %=12.38	<b>ISFJ</b> n=12 %=2.25	<b>INFJ</b> n=11 %=2.06	<b>INTJ</b> n=30 %=5.63
<b>ISTP</b> n=15 %=2.81	<b>ISFP</b> n=7 %=1.31	<b>INFP</b> n=9 %=1.69	<b>INTP</b> n=25 %=4.69
<b>ESTP</b> n=22 %=4.13	<b>ESFP</b> n=11 %=2.06	<b>ENFP</b> n=51 %=9.57	<b>ENTP</b> n=52 %=9.76
<b>ESTJ</b> n=80 %=15.01	<b>ESFJ</b> n=36 %=6.75	<b>ENFJ</b> n=37 %=6.94	<b>ENTJ</b> n=69 %=12.95



*Career aspirations of business students*

Career aspirations were analyzed according to career anchors, work environments, and status of employment choice. In Table 3 are presented the distribution of career aspirations according to career orientations.

Table 3. The distribution of career aspirations according to career orientations.

CAREER ORIENTATIONS					
Career anchors		Working environments		Status of employment choice	
Technical competence	26 %	Enterprising	38 %	Organizational employment	81 %
Managerial Competence	17 %	Social	17 %	Entrepreneurship	19 %
Independence	14 %	Conventional	14 %		
Pure Challenge	13 %	Artistic	12 %		
Creativity	12 %	Investigative	11 %		
Service	10 %	Realistic	8 %		
Security	5 %				
Life-Style Integration	3 %				
Total	100 %	Total	100 %	Total	100 %

As presented in Table 3, most of the business students preferred Technical competence, Managerial competence, Independence, and Pure Challenge career anchors. Enterprising, Social, and Conventional working environments were preferred more than others. As shown in Table 3, most of the business students preferred organizational employment to entrepreneurship, that supports the findings of Hammer (1997).

*The relation between MBTI and career orientations*

In the first article, the E-I ( $p < .01$ ), T-F ( $p < .01$ ), and J-P ( $p < .001$ ) dichotomies of the MBTI were statistically related to career anchors. This result contradicts partly the theoretical assumptions concerning the relation between the functions S-N and T-F and the career choice (Myers & Myers 1990). At least in relation to Schein's (1985) career orientation framework, the role of the E-I and J-P dichotomies of the MBTI, was stressed.

In percentage terms the "entrepreneurial anchors", creativity and independence, were preferred relatively more by Ns and Ps than Ss and Js. On the other hand, "organizational anchors", technical competence, managerial competence and

security were preferred less by Ns and Ps than Ss and Js. Further, relatively more Is than Es preferred technical competence whereas relatively more Es and Ns preferred pure challenge than Is and Js (see Nordvik 1996). In addition, Es and Fs preferred service (see Nordvik 1996) more than Is and Ts.

*In the second article*, the E-I ( $p < .001$ ), S-N ( $p < .001$ ), and T-F ( $p < .001$ ) dichotomies of the MBTI were related statistically to Holland's work environments. This finding is in line with the studies of Hammer (1996) and Nordvik (1996), who also found relationships in other dichotomies but not in the J-P dichotomy. The type level ( $p < .001$ ) also received statistical significance as a relation to working environments.

In percentage terms extraverts preferred enterprising working environment more than introverts which is in line with Dillon and Weissman (1987), Hammer (1996), Nordvik (1996), and Myers and McCaulley (1985) whereas extraverts preferred conventional working environment less than introverts. Correspondingly, Ns preferred conventional environments less than Ss but Ns preferred artistic environments more than Ss, which supports the findings of Dillon and Weissman (1987), Hammer (1996), Nordvik (1996), and Myers and McCaulley (1985). Ts preferred enterprising working environments more than Fs whereas Ts preferred artistic environments less than Fs. And finally, Js preferred conventional working environments more than Ps, which supports the finding of Dillon and Weissman (1987), Nordvik (1996), and Myers and McCaulley (1985). In addition, Js preferred artistic environments less than Ps.

*In the third article*, the J-P dichotomy ( $p < .05$ ) of the MBTI was statistically related to status of employment choice. In percentage terms the results indicated that Js prefer organizational employment more than Ps, whereas Ps prefer entrepreneurial careers more than Js. These results support, for example, the finding of Garden (1997). The results also indicated that Ss and Fs prefer more than Ns and Ts organizational employment, whereas Ss and Fs prefer less than Ns and Ts entrepreneurial careers. The results at the type level showed that entrepreneurial careers are preferred more by NP types than other types. The result is in line

with e.g. Garden (1997), Ginn and Sexton (1990), and Reynierse (1997). Further FJ types prefer more than other types organizational employment, which is in line with Reynierse (1997).

## 1.6 Conclusions and contribution of the study

This study made an attempt to increase the understanding of the connection between personality and career aspects. The main purpose of this chapter is to integrate the results related to MBTI and career orientations. This also provides the main contribution of this study. As mentioned earlier, in most of the previous studies the focus has been on only one career orientation framework, excluding the studies by Nordvik (1991, 1996). From the viewpoint of contribution, especially the MBTI approach to career anchors and to status of employment choice plays an important role. These career orientation frameworks are related to entrepreneurial aspirations as well as to others.

### *Theoretical conclusions*

The main idea of this thesis was to study whether personality influences the career orientation. The results indicated that personality has an influence on career orientations. In theory, the S-N and T-F dichotomies of the MBTI have been emphasized in career choice whereas the E-I and the J-P dichotomies of the MBTI have had a supportive role in career choice (Myers & Myers 1990). This study shows that all dichotomies of the MBTI are importantly related to career orientation. The relation between the dichotomies of the MBTI and career orientations is dependent on the selected career orientation framework. For example, the S-N dichotomy ( $p < .001$ ) of the MBTI was statistically related to work environments but not to career anchors or status of employment choice. The E-I and T-F dichotomies of the MBTI were statistically related to career anchors ( $p < .01$ ) and working environments ( $p = .001$ ) but not to status of employment choice. Further, the J-P dichotomy of the MBTI was statistically related to career anchors ( $p < .001$ ) and status of employment ( $p < .05$ ), but not to working environments. In addition, the type level of the MBTI was statistically

related to working environments ( $p < .001$ ) but not to status of employment choice. (The type level was not included in the career anchor framework, and thus the results are not available). In table 4, a summary of the results between MBTI dichotomies and type level, and career orientation frameworks is presented.

Table 4. Summary of statistical significances between MBTI and career orientations.

CAREER ORIENTATION	PERSONALITY				
	E-I	S-N	T-F	J-P	TYPE LEVEL
Career anchors	**	-	**	***	n.a.
Working environments	***	***	***	-	***
Status of employment choice	-	-	-	*	-

\*.05 \*\* .01 \*\*\*.001

n.a. = not available

While research on Holland's vocational profiles has focused on preference for a general functional area, the research on career anchors indicates that there are widely different career paths within a given general functional area (see Feldman & Bolino 2000; Schein 1996). The empirical results also suggest this view. According to Nordvik (1991,1996), the results did not indicate any close correspondence between Holland's (1985) and Schein's (1985) constructs. As Nordvik (1991) showed these two theoretical models seem to be distinct theoretical concepts. Thus, a person's career anchors cannot be derived from the assessment of their Holland's type, and vice versa. According to this view, all options related to career anchors are theoretically possible for each of Holland's

profiles, even though some of the career paths may be more preferred than others. As mentioned earlier, the results of this study showed that from the MBTI perspective, Holland's and Schein's frameworks are both related to E-I and T-F dichotomies of the MBTI.

The general purpose of this study was to acquire a better understanding of business students' personality and career orientations. Thus, one of the interests was to see whether the results of this study are uniform from the personality point of view across career orientation frameworks. Even though the correlations were low in Nordvik's (1991) study, the results indicated the following relation between Holland's profiles and Schein's career anchors: Artistic environments have a relation to independence, Social environments have a relation to service, Enterprising environments have a relation to managerial competence and pure challenge, and Conventional environments have a relation to security. The relations seem to be accurate from the theoretical point of view. The relation between working environments and status of employment choice is even more complicated. It is possible to end in an entrepreneurial or organizational career from each working environment, and thus no relation between these frameworks can be found.

From the viewpoint of career anchors, there are at least two which may be linked to an entrepreneurial career, i.e., creativity and independence (Schein 1985). Individuals who are anchored by an independence career anchor might seek self-employment because it provides them with more freedom than traditional employment arrangements. In contrast, individuals with a creativity career anchor may be drawn to self-employment because it gives them opportunities to build businesses of their own and to use their creative talents. Correspondingly a managerial competence anchor pertains mainly to careers in large organizations as do technical competence and security career anchors.

In Figure 2 are presented the earlier illustrated potential relations between working environments and career anchors (Nordvik 1991), and between career anchors and entrepreneurship (Schein 1985). The researcher has presented the potential relation between managerial competence, technical competence and

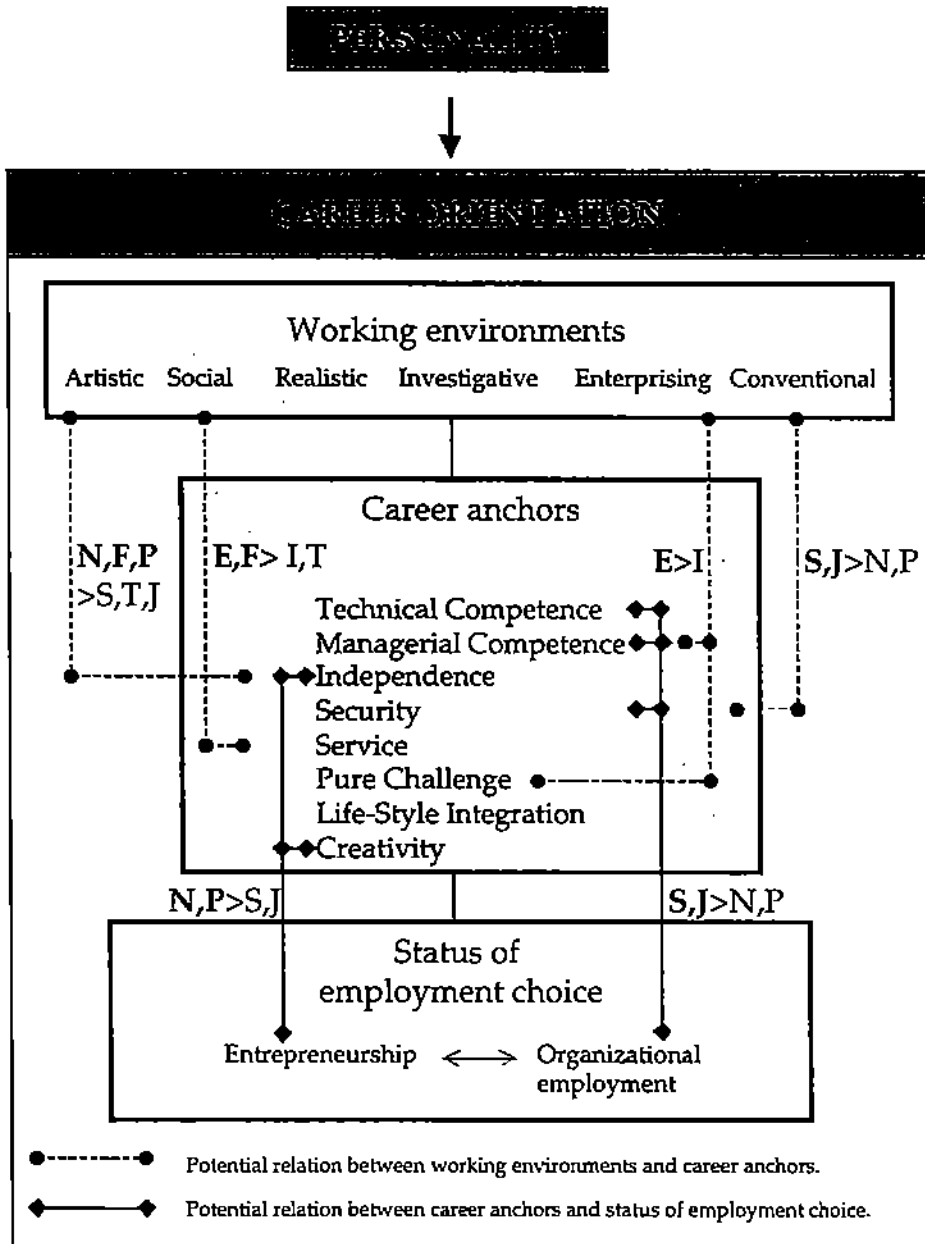


Figure 2. Potential relations between MBTI profiles and career orientation frameworks.

security anchors and organizational employment. The personality profiles of this study is added into Figure 2, showing the personality aspects which are similar between these expected relationships based as shown in this study. Thus the results are quite uniform indicating that Ns and Ps prefer relatively more than Ss and Js artistic working environments, independence and creativity career anchors, and entrepreneurial careers in percentage terms. On the other hand, Ss and Js prefer more than Ns and Ps conventional working environments, security career anchors, and organizational employment in percentage terms. Besides, Es and Fs prefer more than Is and Ts social environments and service career anchors in percentage terms. And further, extraverts prefer more than introverts managerial competence and pure challenge career anchors in percentage terms.

#### *Managerial conclusions*

The results of this study may help students for example in their selection of specialties in business studies and career paths. Those who select enterprising working environments, managerial competence and organizational employment might select management as their major and managerial career path. Those who select conventional working environments, technical competence career anchors, and organizational employment might select accounting and finance as their major, and accountant or finance analyzer career paths etc.

People differ in their views of careers. Therefore people could be managed quite differently. It is important for managers to become more aware of the personality aspects and career orientations of their subordinates so that rational career moves are made in the organization. If a person discovers that he or she is not in the right vocational field a final outcome can be lay-off. However, the potential option could be that the employee and organization restructure the job or provide other career opportunities within the organization to tap into the employee's career orientation.

Career orientation models have the potential to serve as a useful information base for people to understand their career. Similarly Myers-Briggs Type

Indicator is valuable for self-understanding. By combining these frameworks, career orientations show what kind of careers we are interested in, and the MBTI shows the reasons for preferring one type of career. By identifying one's personality and career orientations, it is possible to make more informed career choices. Thus, with these models, students have better possibilities of doing successful career planning. Similarly, these frameworks might help organizations in their human resources management, especially in career management.

It should be remembered that no occupation provides a perfect match between type preferences and work tasks. However, by identifying one's personality strengths and career orientation, it is possible to prevent major mismatches.

### 1.7 Limitations and further studies

Firstly, only the personality aspect was presented in this study. Besides personality, there are other things which may have an impact on career decisions: gender, locus of control, parents' education, job market conditions, motivation, family circumstances etc. These other things can be psychological or non-psychological in nature. Secondly, only business students' personality and career aspirations were studied. These results are generalizable to Finnish business students at the university level. It remains to be seen whether the findings are valid across national boundaries and for people with different educational backgrounds. Thirdly, only concentrating on dichotomies of the MBTI weakens type dynamics. With big enough data, the type level could give a much better understanding on the phenomena.

If other student groups besides business students had been involved, Holland's career orientation framework might have been more useful than studying only business students. Overall, the best advantages of Holland's vocational profiles are got before selecting a course of study at a university or college. However, it may help, for example, in the choice of a major subject. The career anchor framework is valuable to business students as they think of their abilities,



motives and values in their future career. Even though the real anchor may be found with work experience, a career anchor model activates young people to think about their careers. Katz's framework is useful if the main interest is focused on academic entrepreneurship. It also makes more distinct the choice between entrepreneurship and organizational employment. Even so, it is in reality possible to end in an entrepreneurial career through organizational employment and vice versa. In future, it is expected that the number of academic entrepreneurs grows (Melin 2001).

In future studies the interrelationship between career orientation frameworks could be analyzed. Also it would be worth investigating the relationship between variables more precise than in this study. In addition, it might be interesting to study adult groups with work experience from different educational backgrounds. Especially career anchors are expected to be more stable with work experience (Schein 1996). Also the need for longitudinal studies could be covered. These same students could be studied for certain periods, for example seven to ten years. The main focus of further studies might be for example the career paths they take and whether those paths are related to the aspirations studied here or not.

The relation between aspirations and reality might be worth studying, i.e. whether the kind of careers the students aspired to are available in job markets. Also the means of attracting academics to entrepreneurial careers might be studied further. In this study it was expected that personality influences the choice of entrepreneurship. This view is very one-sided. In future studies, the developmental perspectives of entrepreneurial aspirations could be studied longitudinally from the young age groups to the end point of entrepreneurship. From a methodological point of view, career orientations could also be studied by means of questionnaires or interviews or both ways.

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## Personality preferences and career expectations of Finnish business students

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### Keywords

Personality, Myers-Briggs type indicator, Career planning, Career development

### Abstract

The purpose of this study was to examine the relationship between the personality and career expectations of business students. The sample consisted of 533 business students. Personality was administered using the Fennion (the Finnish research version) of the Myers-Briggs Type Indicator and career expectations were studied in Schein's career orientation framework. Thus the relation between the MBTI preferences and Schein's career anchors and type preferences of business students was reported. The main research question was: how are business students' personality preferences and career expectations related to Schein's career anchors? Business students' career expectations were mostly seen as belonging to the Technical Competence (28 percent), Managerial Competence (17 percent) and Independence (14 percent) career anchors. Statistical significance was found in many cases.

### Introduction

Using personality characteristics to explain career choice and development is a familiar paradigm to career psychologists. These theorists propose multidimensional relationships between an individual's needs, referred to as self-concept, and attitudes towards various careers. Abilities, interests, and values are related to what the person can do, likes to do, and considers important to do (Crites, 1969; Osipow, 1983; Welnsch, 1979). In fact, generalizations are made concerning the match between personality and career orientation (e.g. Roe, 1957; Holland, 1973, 1985; Myers and McCaulley, 1990). Thus, people will be more likely to select a career which will result in satisfaction of personality-related behaviours. This perspective has been useful both in explaining career choice and career preferences. There has been considerable research on career decision making (Osipow, 1991; Vondracek *et al.*, 1990; Lucas and Epperson, 1988), and numerous instruments have been developed to measure levels of career decision. However, the instruments do not purport to measure the appropriateness of career choice, but rather confidence in a career choice.

Only a few studies have focused on predicting career choices among business students including those pursuing Master's degrees in business (e.g. Nordgren, 1985; Martin and Bartol, 1986; McNulty and Borgen, 1980). The term business only vaguely profiles the career interests of such students because there are several concentration areas in business, e.g. accounting, marketing and management. There are two theories with a particular potential for predicting career orientation and career choice among business students:

Schein's career anchor theory (1978; 1985a) and Jung's psychological type theory (1921) further developed by Myers (1962) and Myers and McCaulley (1990).

In this study, personality and career expectations of business students will be studied. Career expectations give an impression of what kind of work and career students aspire to, and thus career expectations reflect career orientation. Career expectations are analyzed in Schein's career orientation framework using descriptions of career anchors (Appendix). Personality is administered using the Myers-Briggs Type Indicator. The main research question is: how are business students' personality preferences and career expectations related to Schein's career anchors? The type table of business students will be reported too. In this study, the enduring behaviors of the individual describe his/her personality. A career orientation is defined in terms of the preferred self-perceived talents and abilities; motives and needs; attitudes and values that people have and which together make up the career anchor (e.g. Schein, 1978). Career expectations mean all those long-range expectations which concern qualities of work; they represent a subjective career view (e.g. Arthur, 1994).

In most studies concerning career expectations of business students the main predictor has been sex (e.g. Nordgren, 1985). Although in business there is a wide field of occupations, there are not many specific men's or women's jobs. At least in Finland, business studies attract male as well as female students. Thus a personality approach (Myers and McCaulley, 1990) seems to explain better than sex the possible differences in career expectations. Universities and business schools are places



Maria Järnström  
*Personality preferences and  
 career expectations of Finnish  
 business students*  
 Career Development  
 International  
 5/3 [2000] 144-154

from where future managers are recruited. The latest statistics show that most MBA students will end up in manager positions, so managers constitute a potential reference group for business students.

### Career anchor theory

Career anchors guide people's career decisions and clarify some of the differences in individual approaches to careers (Schein, 1974, 1978). Career anchors developed by Schein (1978, 1985a,b) are Technical Competence, Managerial Competence, Independence, Security, Service, Pure Challenge, Life-Style Integration, and Creativity. Schein (1978, p. 128) argues that the career anchor can be viewed as "that concern or value which the person will not give up, if a choice has to be made". According to this view, every individual has only one dominating career anchor (Barth, 1933).

So far most of the studies concerning career anchors have concentrated on small samples and studies of particular, interesting, and illustrative cases (Schein, 1978, 1985b; Derr, 1986). Nordvik (1991) studied the pattern of correlations between the categories in Holland's and Schein's theories. DeLong (1982) evaluated the career anchor model through an empirical approach. Carland *et al.* (1984) proposed conceptualizations for differentiating entrepreneurs from small business owner/managers and differentiating entrepreneurial ventures from small businesses. In Finland career anchors have been studied by e.g. Miettinen (1979, 1980), Ilola (1993a; 1993b), Salminen (1990, 1993), Lähteenmäki (1995) and Lanitto (1997). Studies by Miettinen and Salminen are most relevant in this context because they have focused on managerial data. Miettinen (1979, 1980) studied the career anchors of superiors who participated in a management training program. Most superiors were connected with Technical Competence (57 percent), Security (17 percent) or Managerial Competence (14 percent). In a study by Salminen (1990), Life-Style Integration and Managerial Competence anchors were stressed among general managers; and Life-Style Integration and Independence among bank managers.

### Personality approach

When personality is emphasized in career choice, it is supposed that the personality has been formed before one starts to make such a

choice. This study is based on Jung's theory. Where other observers saw people's behavior as random, Jung saw patterns (Engler, 1991). One of Jung's major contributions to the psychology of the conscious psyche is his explanation and description of psychological types. In Jung's theory, all conscious mental activity can be explained in terms of two basic attitudes (Extroversion and Introversion) and four functions: two perception processes (Sensing and Intuition) and two judgment processes (Thinking and Feeling). In each person, one of the attitudes and functions is dominant and its opposite is weaker. Jung's typology has led to the development of assessment and research on psychological type. Based on Jung's typology, the Myers-Briggs Type Indicator is one of the most widely used tools for nonpsychiatric populations in the area of clinical, counselling, and personality assessment (DeVito, 1985; Lynch, 1985; Murray, 1990).

### Myers-Briggs type theory

In order to make the theory of Jung's psychological types understandable and useful in people's lives, Myers-Briggs Type Indicator (MBTI) has been developed (Myers and McCaulley, 1990). Briggs and Myers extended the model in the J/P (Judging and Perceiving) scale by making explicit one aspect of the theory that was implicit but undeveloped in Jung's work. The J/P scale describes identifiable attitudes and behaviors to the outside world (Myers and McCaulley, 1990).

According to Myers and McCaulley (1990), the Extroversion/Introversion scale reflects the extent to which individuals are oriented to the outer world of people and objects versus the inner world of concepts and ideas. The Sensing/Intuition scale measures the extent to which an individual's perceptions are likely to rely on observable facts or events through one or more of the five senses versus relying on meanings, relationships and/or possibilities that have been worked out beyond the reach of the conscious mind. The Thinking/Feeling scale reflects the extent to which the individual's decision making relies on logical consequences and whether something is true or false versus on subjective feelings associated with personal or social values. The Judgment/Perception scale measures the extent to which an individual adopts a judging attitude and aims to regulate and control his or her life versus being relatively open minded and preferring to adapt to what happens.



Marja Järvelin  
 Personality preferences and  
 career expectations of Finnish  
 business students

Career Development  
 International  
 5/3 [2000] 144-154

Type theory also assumes that people differ in the ways they like to use their minds, and that these differences influence the ways people like to work, what motivates them, and what satisfies them (Macdald *et al.*, 1986). The preferred combination of perception (Sensing or Intuition) and judgment (Thinking or Feeling) has much to do with career choice. Naturally people like the possibility of using their best-developed processes or functions (Myers, 1979). Sensing types prefer occupations where they can deal with facts and Intuition types prefer occupations in which they can weigh possibilities. Sensing types are also attracted to work settings where well-learned knowledge is important, where working is tangible and the work concerns the immediate situation. Intuitive types are attracted to work settings where it is important to find the pattern in complex systems, to create new knowledge, to work with theory and imagination, and to have some intellectual challenge (Myers, 1979; Lawrence, 1993). People who prefer thinking are better at dealing with objects, machinery, principles or theories than with matters involving people, what they value and how they can be helped or persuaded. People dominated by feeling are interested in everything which involves people and their values. The Extroversion/Introversion preference seems to be most important as regards finding an appropriate work setting within a particular occupation. The Judging/Perceiving preference is more related to working style than to tasks themselves. (Myers and McCaulley, 1990; Hammer and Macdald, 1992; DuBrin, 1980.)

#### Earlier studies of the Myers-Briggs type indicator

The MBTI research literature contains a number of studies of the distribution of types in various occupations (for more details, see Macdald *et al.*, 1986; Myers and McCaulley, 1990; Hammer and Macdald, 1992). According to Bayne (1995), business students' MBTI types were predominantly TJ and NT. This is partly because higher education generally attracts more Ns (Walck, 1992). Mason and Mitroff (1973), and Killman and Mitroff (1976) concluded that one function pair, ST, was privileged over the others in management, while NT played a supporting role. In lower-level managerial positions the number of sensing types is expected to be greater while in top management the number of intuitive types is expected to predominate (e.g. Myers and McCaulley, 1990; Hurst *et al.*, 1989).

According to Carskadon (1992) and Walck (1992), managers tend towards Thinking (T) with Judging (J), the preferences for making decisions and for order. According to Asikainen (1996), Finnish managers were TJs, especially ESTJs, ISTJs and ENTJs. Myers and McCaulley (1990) have characterized these thinking-judgers (TJs) as tough-minded, executive, analytical, and instrumental leaders.

In some studies MBTI types or preferences are related to values (Grant, 1965; Johnson and Coppola, 1990; Tower and Scarr, 1985; Smith, 1989; Gassner and LeBlanc, 1994). According to Grant (1965), Sensing types were more interested in stability and security, while Intuitive types were more inclined to value originality and the opportunity to use special abilities. Johnson and Coppola (1990) correlated the MBTI with the Rokeach Values Survey and found the following: Extroverts valued an exciting life, while Introverts attached more value to inner harmony; Sensing types tended to attach more value to security and health, while Intuitive types valued freedom, excitement, and beauty; Feeling types valued harmony, love, and spirituality, while Thinking types valued authority and accomplishment; Judging types also valued security, while Perceiving types valued excitement, pleasure, and love. Smith (1989) found significant relationships between MIQ needs and MBTI preferences as follows: Intuition and Feeling were related to needs for variety, social status, co-workers, social service, and moral values; Intuition and Thinking were related to needs for creativity and responsibility; Sensing and Judging were related to a need for security.

Studies concerning both the MBTI and Schein's career anchors were not found, so this research area has been relatively ignored in MBTI research. Garden (1997) studied the psychological type and career paths of software developers using Allen and Katz's (1985) framework. The studied career paths were: managerial, technical, project-based and owning a company. While managerial, technical and own company can be related to Schein's Managerial Competence, Technical Competence and Creativity, the following results are of interest: Es, Ss, Ts, Js chose a managerial career path more than Is, Ns, Fs. Ps; Is, Ns and Ts chose a technical career path more than Es, Ss and Fs; Ns and Ps wanted to start their own company more than Ss and Js. The correlation between MBTI and Holland's SCII (Strong-Campbell Interest Inventory) has been studied too. Correlation between these two, MBTI and SCII, was found (e.g. Myers

Maria Järilström  
*Personality preferences and  
 career expectations of Finnish  
 business students*  
 Career Development  
 International  
 5/3 [2000] 144-154

and McCaulley, 1990; Dillon and Weissman, 1997). NF types and perceiving types scored higher on the artistic, extroverts and SJ types on the conventional, sensing and thinking types on the realistic, extroverts, feeling and perceiving types on the social, intuition and thinking types, and IN types on the investigative scale. Sensing types, especially extroverts with sensing, and thinking types scored higher on the enterprising scale.

#### Hypotheses

In this study, the relationship between MBTI preferences and career expectations in Schein's career orientation framework (career anchors) was examined. While Ss prefer to focus on some special area and Js are related to conscientiousness (Myers and McCaulley, 1990), Ss and Js are expected to be related to the Technical Competence. Because many studies of type show a relationship between TJ and management (Carskadon, 1992; Walck, 1992), it was predicted that Managerial Competence would be chosen by Ts and Js. Autonomy has been found to be most strongly associated with both intuitive types and perceiving types (Myers and McCaulley, 1990); Independence was predicted to be chosen by Ns and Ps. While Ss and Js prefer order rather than change (Myers and McCaulley, 1990), and are related to security (Grant, 1985; Smith, 1989; Johnson and Coppola, 1990), Security is predicted to be chosen by Ss and Js students. Service was predicted to be chosen by Es and Fs, because Es want work with people and Fs want the work that provides service to people (Myers and McCaulley, 1990). Pure Challenge was predicted to be chosen by Ts and Js, because achiever personality is related to thinking types and judging types (Myers and McCaulley, 1990). Life-style integration can be related to order of values. While feeling types' decision making is related to values (Myers and McCaulley, 1990) and they value harmony (Johnson and Coppola, 1990), Life-Style Integration was predicted to be chosen by feeling students. Creativity is related to Ns and Ps (Myers and McCaulley, 1990) and entrepreneurship to Ps (Reynierse and Harker, 1995); thus the career anchor of Creativity was predicted to be chosen by Intuitive and Perceiving students with a high need for entrepreneurship and creativity.

In summary the hypotheses are for:

- H1 technical competence to be associated with Ss and Js;
- H2 managerial competence to be associated with Ts and Js;
- H3 independence to be associated with Ns and Ps;

- H4 security to be associated with Ss and Js;
- H5 service to be associated with Es and Fs;
- H6 pure challenge to be associated with Js;
- H7 life-style integration to be associated with Fs; and
- H8 creativity to be associated with Ns and Ps.

## Methodology

### Subjects

The sample consisted of 533 Finnish business students from the University of Vaasa. Within this group there were 292 males (55 percent) and 241 females (45 percent). The subjects were mainly accounting (39 percent), marketing (18 percent), and management and organization (18 percent) majors. The mean age of the subjects was 22, with a range from 18 to 47.

### Instruments

The construct validity and reliability of the MBTI have been examined across age groups, genders, occupations and cultures and are well established (Carlyn, 1977; Buros, 1978; Murray, 1990). All students completed form F (the Finnish research version) of the MBTI. The internal consistency coefficients in earlier studies using the F-version of the E/I scale have ranged from 0.71 to 0.83; in the S/N scale from 0.65 to 0.87; in the T/F scale from 0.65 to 0.86; in the J/P scale from 0.60 to 0.84 (e.g. Stricker and Ross, 1963; Webb, 1964; Carlyn, 1977; Heikkilä-Laakso, 1995; Asikainen, 1996).

The results of reliability of the studied MBTI-version also indicate relatively good internal consistency. The internal consistency analysis used was based on the split-half continuous scores and is presented in Table I.

Three scales (E/I, T/F, J/P) show the best internal consistency. The lowest value was on the S/N scale although in American samples the T/F scale has the lowest internal consistency. Although the results show adequate internal consistency, i.e. the test seems to measure the same thing consistently in the scale, further development of the indicator is needed. Gardner and Martinko (1990), Carlson (1985), Heikkilä-Laakso (1995) and Bents and Wierschenke (1996) have obtained on the average 0.80 from test-retest reliability values for the four scales. Since there is no retest in this study, the test-retest analysis cannot be performed.

According to Hammer (1996) and Myers and McCaulley (1990), the MBTI is related to the career instruments and to other

Maria Järström  
 Personality preferences and  
 career expectations of Finnish  
 business students

Career Development  
 International  
 5/3 [2000] 144-154

instruments in ways that support its convergent validity. According to McCrae and Costa (1989), attention is still needed in the area of construct validity. For the validity of the MBTI studied, the continuous scores made for the split-half analysis were tested to find whether the measured scales actually load on the expected factors. Varimax rotated factor analysis was chosen in order to see if the expected subscales found each other. Four factors arise from the eight subscales accordingly (Table II).

As both halves of the MBTI index scores load on the same factor and not on the other factors, the result suggests that the items in the questionnaire consistently measure the same thing. Indirectly this gives support to the construct validity of the measure as well. Community is strong in each variable (0.83-0.88).

The career orientation questionnaire included external variables (sex, age, major, father's and mother's occupations) and an open question about career expectations: "Next, describe as accurately as possible your future job. The job does not have to be realistic or practical. Tell frankly about your dreams, what you would like to do, when and how".

#### Procedure

The data were collected in September 1996 and 1997 from a management and organization course (five credits) which is a basic course for business students at the

University of Vaasa. The self-awareness and teamwork were included in the course. Because teamwork was used there was a need for a method that would involve heterogeneous teams. MBTI provides a valuable tool for teamwork and self-awareness and was selected partly for these reasons for this study (Myers and McCaulley, 1990). Students filled in the MBTI and a short questionnaire in which there were external variables and an open question about career expectations. They had one hour and 30 minutes to fill in the MBTI and a career orientation questionnaire. Because the questionnaires were a compulsory part of the studies, those who did not attend the first lecture filled in the questionnaires later in their own time in the Department of Management and Organization. Students were told that the questionnaires would be used to establish heterogeneous teams and for research purposes. The theory was explained and the results were interpreted one week later. Some of the students were excluded from this study because their psychological preferences were marginal (i.e. less than the standard nine-point differential between preferences within each dimension).

The open answers were classified according to Schein's career anchors for certain criteria (see Appendix) by two analyzers. The main analyzer read and analyzed the whole data and another analyzer read and analyzed every other answer. Both analyzers had studied Schein's theory of career anchors thoroughly. The analyses were done separately without the analyzers knowing each other's analysis. The level of inter-rater agreement was 0.79 and it was accepted (e.g. Hennessey and Amabile, 1988). The main analyzer's analysis will be reported.

Table I  
 Internal consistency of MBTI's (Form F) split-half continuous scores

Analysis used	N=533	E/I	S/N	T/F	J/P	
Pearson's correlation coefficients			0.73	0.65	0.71	0.76
Cronbach's coefficient alpha			0.84	0.79	0.83	0.86

Table II  
 Factor loadings of MBTI continuous split-half scores

Variables	F1	F2	F3	F4	Communality
XEI	0.93				0.87
YEI	0.91				0.86
XSN		0.88			0.83
YSN		0.88			0.83
XTF			0.91		0.86
YTF			0.92		0.86
XJP				0.91	0.88
YJP				0.91	0.88
Eigenvalues	150	0.98	1.43	2.94	
% variance explained	18.80	12.30	17.90	36.70	
Cumulative	55.50	65.80	73.50	36.60	

Notes: Type of factor analysis = principal component  
 Method of rotation = varimax  
 Loadings are abbreviated to two numbers and loadings  $\pm 0.50$  are included

## Results

### Sample

The sample consisted mainly of ESTJs (15 percent), ISTJs (12 percent), ENTJs (13 percent). Thus the preferences E (67 percent), N (53 percent), T (67 percent), and J (64 percent) were over-represented although Ns barely outnumbered Ss. Also in the S/N scale students had more values under the critical nine scores than in the other scales. A total of 34 percent of the sample was ST, followed by NT (33 percent), NF (20 percent), and SF (12 percent). According to Bayne (1995), business students' MBTI types were predominantly TJ and NT. In this study too TJs were over-represented while STs barely outnumbered NTs. The findings are in line with

Maria Järström  
*Personality preferences and  
 career expectations of Finnish  
 business students*

Career Development  
 International  
 5/3 [2000] 144-154

managerial data (e.g. Asikainen, 1996).  
 The type table for this sample is shown in  
 Figure 1.

#### Career expectations

Business students' career expectations are distributed with respect to Schein's career anchors as follows: career expectations related mostly to the Technical Competence (25 percent), the Managerial Competence (17 percent), the Independence (14 percent), the Pure Challenge (14 percent), the Creativity (12 percent), and the Service (10 percent) career anchors. The least favored were the Security (5 percent), and Life-Style Integration (3 percent) anchors.

The Technical and Managerial Competence anchors were stressed as expected on the basis of studies by Miettinen (1979, 1980) and Salminen (1990). However, the most interesting part concerns the Creativity and Life-Style Integration anchors. The Creativity (entrepreneurship) anchor was preferred by business students although managers were not related to that anchor. One reason can be that students are more creative with regard to entrepreneurship. Many students want to achieve something visible in their life, and entrepreneurship can be the right choice for them. This study

might indicate that business students have a positive orientation to entrepreneurship. Life-Style Integration, for example in the study by Salminen (1990), was very much emphasized among general managers and bank managers. However, this study indicates a quite opposite direction: the Life-Style Integration anchor was least selected among business students. The question asked was focused on career expectations, so the answers were more related to career issues than to family or interest roles. One reason why Life-Style Integration was least preferred is possibly that connecting work roles, parents' roles, and other interests is not topical for students and this result gives empirical support to the reliability of Schein's career anchor theory. However, this can also raise the question whether business students are more work and career oriented than their older colleagues. It is possible that work and career provide fulfillment, success and status, which are important especially to business students. The security anchor was not often preferred. As students are focusing on a future career, it seems that they are positive and confident about their chances to have a job in the future. The unemployment rate has been low for people with a university degree.

There were significant differences in the career choice for each of the personality preferences, as measured by the chi-square statistic. The eight career anchors were compared with one another for each preference dimension.

Figure 1  
 Type distribution of business students (N = 533)

Type Distribution of the Total Sample

N = 533				N %	
ISTJ N = 61 % = 12.39	ISFJ N = 12 % = 2.25	INFJ N = 11 % = 2.01	INTJ N = 30 % = 5.63	E 358 67.17	I 175 32.83
ISTP N = 15 % = 2.81	ISFP N = 7 % = 1.31	INFP N = 9 % = 1.69	INTP N = 25 % = 4.69	S 249 46.72	N 284 53.28
ESTP N = 22 % = 4.13	ESFP N = 11 % = 2.06	ENFP N = 51 % = 9.57	ENTP N = 82 % = 15.38	T 359 67.35	F 174 32.65
ESTJ N = 89 % = 15.01	ESFJ N = 38 % = 7.13	ENFJ N = 37 % = 6.94	ENTJ N = 83 % = 12.95	J 341 63.99	P 192 36.02
				U 118 22.33	IP 54 10.51
				EP 155 29.32	CP 222 41.85
				ST 183 34.53	SP 84 15.78
				KP 164 30.79	NT 174 32.65
				SJ 194 36.40	SP 51 9.57
				KP 137 25.70	NT 147 27.58
				TJ 245 45.97	TP 114 21.39
				FP 74 13.89	FJ 41 7.69
				FI 75 14.07	EN 201 37.71
				IS 103 19.32	IS 148 27.95
				SN 111 20.83	NS 144 27.02
				TS 148 27.95	NS 89 16.70

#### Preferences E and I

As illustrated in Table III, Es clearly preferred Managerial Competence, Service, and Pure Challenge more than Is while Is preferred Technical Competence, Independence, and Creativity more than Es. Security and the Life-Style Integration were preferred by both Es and Is.

#### Preferences S and N

Ss preferred Technical Competence, Managerial Competence, and Security more than Ns, while Ns preferred Independence, Pure challenge, and Creativity more than Ss. Service was preferred by both preferences as well as Life-Style Integration. These differences between Ss and Ns are illustrated in Table IV, though no statistical significance was found even though the S/N scale is expected to have much to do with career choice (Myers, 1979).

Marja Järnström  
 Personality preferences and  
 career expectations of Finnish  
 business students  
 Career Development  
 International  
 5/3 (2000) 144-154

### Preferences T and F

Ts preferred Technical Competence more than Fs while Fs preferred Independence and especially Service more than Ts. Managerial Competence, Security, Pure Challenge, Life-Style Integration and Creativity were preferred by both preferences. These results are presented in Table V.

### Preferences J and P

Table VI depicts the difference between judging and perceiving types, and clear statistical significance ( $p = 0.0001$ ) was found. Js preferred Technical Competence, Managerial Competence, and Security more than Ps, while Ps preferred Independence and Creativity more than Js. Js and Ps equally preferred Service, Pure Challenge, and Life-Style integration.

The connection between the hypotheses and the results was as follows (the results in the S/N scale are only descriptive without statistical significance):

- 1 The Technical Competence associated with Ss and Js was as expected, and these results are consistent with those of Myers and McCaulley (1990). However, Technical

Competence was also more related to Is and Ts than to Es and Fs.

- 2 The Managerial Competence associated with Js, but also with Es and Ss. In this study, both Ts and Fs were equally interested in Managerial Competence; thus Ts were not as dominating as was expected. However, earlier studies were confirmed concerning Js in managerial careers (e.g. Carskadon, 1992; Walck, 1992).
- 3 The Independence associated with Ns and Ps was as expected, and these results give support to the study of Myers and McCaulley (1990). Independence was also related more to Is and Fs than to Es and Ts.
- 4 The Security associated with Ss and Js, was as expected. The results of the earlier studies were confirmed (Grant, 1965; Smith, 1989; Johnson and Coppola, 1990).
- 5 The Service associated with Es and Fs, was as expected, and these results are in line with those Myers and McCaulley (1990) have presented.
- 6 Pure Challenge was not associated with Js as was expected, but with Es and Ns.
- 7 Life-Style Integration was not associated with Fs as was expected, but to some extent with Js.
- 8 The Creativity associated with Ns and Ps was as expected; Creativity was to some extent associated with Is as well. Earlier studies were confirmed (Myers and McCaulley, 1990; Reynlense and Harker, 1995).

Table III  
 Career anchors for extraverts compared with Introverts

	E (n = 296) (%)	I (n = 122) (%)
Technical competence	69 (23)	46 (38)
Managerial competence	57 (19)	14 (12)
Independence	38 (13)	21 (17)
Security	13 (5)	6 (5)
Service	33 (11)	9 (7)
Pure challenge	42 (14)	5 (4)
Life-style integration	8 (3)	3 (2)
Creativity	35 (12)	18 (15)

Note: Chi-square (7,418) = 20.326,  $p = 0.0049$ . Only students with clear preferences (score > 9) in the E/I scale were included in the analysis

Table IV  
 Career anchors for sensing types compared with Intuitive types

	S (n = 169) (%)	N (n = 184) (%)
Technical competence	56 (33)	48 (26)
Managerial competence	30 (18)	26 (14)
Independence	16 (9)	28 (15)
Security	12 (7)	7 (4)
Service	21 (12)	19 (10)
Pure challenge	15 (9)	25 (14)
Life-style integration	6 (4)	4 (2)
Creativity	13 (8)	28 (15)

Note: chi-square (7,353) = 12.775,  $p = 0.0778$ . Only students with clear preferences (score > 9) in the S/N scale were included in the analysis

It seemed that the E/I scale and the J/P scale are closely related to career choice although it has earlier been maintained that the S/N scale and the T/F scale are more related to career choice than the earlier mentioned (Myers, 1979). In this study, the S/N scale was not statistically significant in relation to career choices. The reason for this can be that in the sample both these preferences were well represented. However, in this scale the students had the lowest score values. Either students are uncertain of their choices in this scale or this scale is not developed well enough in the Finnish MBTI F-version (research version).

It is possible to see clear differences in career expectations although the sample included only business students. Introverts were related to Technical Competence, Independence, and Creativity; extroverts to Managerial Competence, Service, and Pure Challenge; sensing types to Technical Competence, Managerial Competence, and Security; intuitive types to Independence, Pure Challenge, and Creativity; thinking types to Technical Competence; feeling types

Maria Järström  
 Personality preferences and  
 career expectations of Finnish  
 business students  
 Career Development  
 International  
 5/3 [2000] 144-154

to Independence and Service; judging types to Technical Competence, Managerial Competence, and Security; perceiving types to Independence and Creativity. The results give some kind of indication of what is most important for business students in their future work. It seemed that specialist and entrepreneurial careers are favored besides managerial careers. These results give support to horizontal and vertical career development processes, and these results could help the career planning in organizations. However, generalization of the results is possible with caution. Some students are just working out their view of a future career, so career expectations can change.

### Conclusions

The personality and career expectations of Finnish business students were studied. The present study was focused upon reporting the type preferences among Finnish business students; it investigated whether certain MBTI preferences were more related to Schein's career anchors than other preferences. The sample of Finnish business students was 67 percent E (33 percent I), 53 percent N (47 percent S), 67 percent T (33

percent F), and 64 percent J (36 percent P). Most of the students' career expectations were related to the Technical Competence (26 percent), the Managerial Competence (17 percent), and the Independence (14 percent) career anchors. Statistical significance was found between MBTI preferences and Schein's career anchors. The relationship was as follows: Technical Competence was related to I, S, T, and J; Managerial Competence to E, S, and J; Independence to I, N, F, P; Security to S and J; Service to E and F; Pure Challenge to E and N; Life-Style Integration scantily to S and J; and Creativity to I, N, and P.

In this study, it was presumed that personality is more important for determining differences in career expectations than career expectations for determining personality. This study confirmed that Schein's career anchor theory provides a useful framework with regard to business students' career expectations. Because this study was focused on career expectations, further studies could include the real career situation, that is whether or not the preferred career choices are actually put into practice. Research on people who actually implement their preferred career options would be helpful, e.g. for counselling purposes. Also the need for longitudinal studies would have to be filled (e.g. Scheer and Reisman, 1994). Career expectations of business students could be studied longitudinally, because it is possible that career expectations change during studies. It would also be interesting to study the correlation between instruments: the MBTI and the COI (career orientation inventory), and observe whether the results would be of the same kind. The personality and career expectations of business students are partly known. The next challenge for organizations is to update their recruiting strategies and to clarify how these people should be handled to keep them motivated.

Working life is rapidly changing. It is important to clarify what future working life could be like: what are the career expectations future workers have and, on the other hand, how organizations, recruiters and especially managers, respond to these expectations. Some changes at the organizational level, especially in leadership, are expected if future organizations are to attract the workers with the most potential.

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Table V

Career anchors for thinking types compared with feeling types

	T (n = 277) (%)	F (n = 126) (%)
Technical competence	91 (32)	23 (18)
Managerial competence	49 (18)	23 (19)
Independence	33 (12)	19 (15)
Security	11 (4)	5 (4)
Service	19 (7)	24 (19)
Pure challenge	34 (12)	13 (10)
Life-style integration	7 (2)	3 (2)
Creativity	36 (13)	14 (12)

Note: Chi-square (7,403) = 19.317,  $p = 0.0072$ . Only students with clear preferences (score > 9) in the T/F scale were included in the analysis

Table VI

Career anchors for judging types compared with perceiving types

	J (n = 261) (%)	P (n = 142) (%)
Technical competence	77 (30)	23 (16)
Managerial competence	52 (20)	20 (14)
Independence	27 (10)	33 (25)
Security	15 (6)	3 (2)
Service	28 (11)	17 (12)
Pure challenge	32 (12)	15 (11)
Life-style integration	8 (3)	3 (1)
Creativity	22 (8)	27 (19)

Note: Chi-square (7,403) = 33.111,  $p = 0.0001$ . Only students with clear preferences (score > 9) in the J/P scale were included

Maria Järström  
 Personality preferences and  
 career expectations of Finnish  
 business students

Career Development  
 International  
 5/3 (2000) 144-154

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Maria Jänström  
 Personality preferences and  
 career expectations of Finnish  
 business students  
 Career Development  
 International  
 5/3 [2000] 144-154

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Maria Järström  
 Personality preferences and  
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 5/3 (2000) 144-154

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#### Appendix

##### Classifying criteria for career anchors (e.g. Schein, 1985)

###### S1 - technical competence

- a desire to exercise one's own talents and skills in some special area (e.g. personnel, finance);
- most happy when one's work permits one to be challenged and to grow in that skill area;
- willing to manage others within the desired function;
- not primarily interested in management and unwilling to go into general management if it requires giving up one's area of expertise.

###### S2 - managerial competence

- the primary concern is to integrate the efforts of others, to be fully accountable for total results;
- requires not only analytical skills, but also interpersonal and emotional resilience to handle power and responsibility;
- targeted to a managerial position;

###### S3 - independence

- primary concern is freeing oneself from organizational rules and restrictions;
- wants to decide when to work, on what to work, and how hard to work;

- would be willing to turn down a promotion or some other opportunity in order to retain autonomy.

###### S4 - security

- can show up as concern about financial security or about geographical stability;
- primary concern is to stabilize career so that one can relax and feel that one has "made it";
- company loyalty such as committing oneself to one employer.

###### S5 - service

- primary concern is to achieve some value, e.g. helping others and teaching;
- permits to continue to work in one's chosen area of concern even if it means changing occupations or organizations;
- one would not take a job with an organization that is hostile to one's values;

###### S6 - pure challenge

- primary concern is to solve seemingly unsolvable problems and to win out over tough opponents;
- the process of winning is most central to oneself;
- e.g. sales work;
- novelty, variety, and challenge become ends in themselves.

###### S7 - life-style integration

- primary concern is to make all the major sectors of one's life work together into an integrated whole;
- does not want either one's family concerns or one's career concerns to dominate one's life; balance is important;
- identity is more tied up with how one lives one's total life and how one develops oneself.

###### S8 - creativity

- primary concern is to create something new;
- willingness to run risks, and desire for personal prominence in whatever is accomplished;
- a strong need to build something;
- does not want to work for others unless one has the freedom to build one's own organization in one's own way.



## Relationship Between MBTI Profiles and Work Environments of Business Students

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*Finnish business students most often exhibited extraversion, intuition, thinking, and judging preferences.*

### Abstract

The purpose of this study was to examine whether personality influences the choice of work environment. Personality was assessed using the MBTI, and career expectations of business students were studied in Holland's work environment framework. The most frequent types of business students were ESTJ (15%), ISTJ (12%), and ENTJ (13%). The data based on the sample of Finnish business students was compared with the data of US MBA students. In the Finnish sample E ( $p = .001$ ), N ( $p = .001$ ), and F ( $p = .001$ ) were overrepresented. The Enterprising (38%), Social (17%), and Conventional (14%) work environments were mostly preferred. The extraversion-introversion ( $p = .0001$ ), sensing-intuition ( $p = .0002$ ), and thinking-feeling ( $p = .0001$ ) dichotomies of the MBTI were statistically related to Holland's work environments as well as the whole type level ( $p = .0001$ ). There were no statistical findings between judging-perceiving dichotomy and work environments.

For decades, theorists and researchers have postulated a convergence between career interest and personality (see Borgen & Harmon, 1996, for a review). Several studies have shown that young people want their work to be interesting (e.g., Grootings, 1989; Hartman, 1987) and that responsibility, challenge, and upward mobility are important criteria for graduates (e.g., Arnold & Davey, 1994; Keenan & Newton, 1985). According to Tuohinen (1990), young

people want their work to be independent and visible, and they would like to have the possibility of self-fulfillment. However, what is interesting for one can be boring for another. While these results are interesting, they do not identify explicit career expectations. Furthermore, in most studies of the career expectations of students, the main predictor has been gender (e.g., Nordgren, 1985), even though personality and career choice have been closely connected (e.g., Holland, 1985; Myers & McCaulley, 1985; Myers, McCaulley, Quenk, & Hammer, 1998). In business, there is a wide field of occupations, but not many identified specifically with men or women. Thus, a personality approach seems to explain better than gender the possible differences in career orientation of business students.

For a review of career theories, see Arthur, Hall, and Lawrence (1989), and Sonnenfeld and Kotter (1982). Two theories with particular potential for predicting career orientation among business students have been provided by Holland (1973; 1985; 1992) and by Jung (1921) and further developed by Myers (e.g., Myers & McCaulley, 1985; Myers et al., 1998).

#### **MBTI and Career Orientation**

The preferred combination of perception (sensing or intuition) and judgment (thinking or feeling) has much to do with career choice (Myers et al., 1998). Naturally, people like the possibility of using their best-developed processes or functions (Myers, 1979). Sensing types prefer work situations in which they can deal with facts, and intuitive types prefer work situations in which they can weigh possibilities. Sensing types are also attracted to work settings in which prior knowledge is important, work is tangible, and the work concerns the immediate situation. Intuitive types are attracted to work settings in which it is important to find the pattern in complex systems, to create new knowledge, to work with theory and imagination, and to have some intellectual challenge (Lawrence, 1993; Myers).

The preference for T-F determines the kind of judgment that is easier and more agreeable to use. People who prefer thinking may focus more on dealing with objects, machinery, principles, or theories than with matters involving people, what they value, and how they can be helped or persuaded. People who prefer feeling are likely to be interested in matters that involve people and their values. The E-I preference seems to be most important in terms of finding an appropriate work setting within a particular occupation. The J-P preference is more related to working style than to tasks themselves (Hammer & Macdaid, 1992; Myers & McCaulley, 1985; Myers et al., 1998).

### Holland's Approach

Holland's (1985) theory views career interests as expressions of personality and argues that individuals make career choices that will place them in environments compatible with their predominant personality characteristics. Holland asserted that individuals are more successful when they operate in environments that are compatible with their personality types, because such environments provide opportunities and rewards that are more congruent with their needs (see Gottfredson & Holland, 1996). Holland (1992) identified six personality orientations and six corresponding work environments—Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C), hereafter referred to collectively as RIASEC—that are typically differentiated on the basis of career interests. Most people can be categorized as conforming to one of these six orientations.

The purpose of the present study was to further current understanding of the relationship between personality and career orientation. Thus, the main research question concerned whether personality influences the choice of work environment. The present study concentrated entirely on business students. Their type preferences are reported along with a comparison between Finnish and U.S. MBA students.

A career orientation is defined in terms of the preferred self-perceived talents and abilities, motives and needs, and attitudes and values that people

have (e.g., Schein, 1978). Career expectations mean all the long-range expectations that concern qualities of work; they represent a subjective career view (e.g., Arthur, 1994). In this study, the career expectations give an idea of the kind of work and career to which students aspire. Work environments are defined according to Holland (1985, see Table 1).

### Earlier Studies

Several career instruments have been correlated with the MBTI to validate the indicator (Myers & McCaulley, 1985; Thorne & Gough, 1991). The MBTI research literature contains a number of studies of the distribution of types in various occupations (for more details, see Hammer & Macdaid, 1992; Macdaid, McCaulley, & Kainz, 1986; Myers & McCaulley, 1985; Myers et al., 1998). One of the latest studies of the MBTI and the career orientation is provided by Järnlström (2000). She reported the relationship between MBTI dimensions and Schein's (1985) career anchors. Mason and Mitroff (1973) and Killman and Mitroff (1976) concluded that one function pair, ST, was predominant in management, whereas NT played a supporting role. In lower-level managerial positions, the number of sensing types is expected to be greater whereas in top management the intuitive types are expected to predominate (e.g., Hurst, Rush, & White, 1989; Myers et al., 1998). According to Carskadon (1992) and Walck (1992), managers tend towards thinking (T) with judging (J), the preferences for making logical decisions and for order. According to Asikainen (1996), Finnish managers were TJs, especially ESTJs, ISTJs, and ENTJs. Myers and McCaulley have characterized these TJs as tough-minded, executive, analytical, and instrumental leaders. According to Bayne (1995), business students' MBTI types were predominantly TJ and NT. Myers et al. (1998) have reported that even more NTJs are attracted to the graduate program (MBA) than STJs, given their numbers in the base population. This is partly because higher education generally attracts more Ns (Walck).

Most research based on Holland's (1985) theory is concerned with students and educational environments. A large body of research provides strong support for the ability of Holland's theory to distinguish among individuals in various

college majors and occupations (Eberhardt & Muchinsky, 1984; Holland; Osipow, 1983; Tracey & Rounds, 1996). However, only a few studies have focused on predicting career choices among business students, including students pursuing master's degrees in business (e.g., Martin & Bartol, 1986; McNulty & Borgen, 1988; Nordgren, 1985).

During the past decades, a handful of studies have explored the correspondence between the MBTI dimensions and Holland's RIASEC (e.g., Dillon & Weissman, 1987; Hammer, 1996; Hammer & Kummerow, 1996; Myers & McCaulley, 1985; Myers et al., 1998; Nordvik, 1996). The J-P dichotomy has shown the lowest correlations with Holland's profiles (see Dillon & Weissman, 1987; Hammer, 1996; Nordvik, 1996) whereas S-N and T-F dichotomies have shown moderate correlations with Holland's model (Hammer, 1996). Hammer and Macdaid (1992) suggested that the J-P dichotomy is the one least likely to reflect an attraction to a particular occupational field. Nordvik (1996) indicated that work competence is also related to the E-I dichotomy contrary to the study of Lowen (1982).

The results have indicated a number of significant relationships between the two models, the most consistent of which include positive associations of sensing-intuition with Conventional and Artistic environments; and thinking-feeling with Realistic and Social environments. These empirical findings support the theory, which proposes the relation between sensing-intuition and thinking-feeling with career choice (Lowen, 1982; Myers et al., 1998). On the other hand, the relation between extraversion-introversion, and judging-perceiving with the RIASEC has been one-sided: positive associations have been found between extraversion and Enterprising, and judging and Conventional. The results concerning the relationship between introversion and perceiving with RIASEC have not been uniform. A hexagon model of Holland's work environments (1985) proposes that opposite environments have the least similarity. While extraversion has correlated with Enterprising environment, it is expected that introversion could be related to the opposite of Enterprising environment, i.e., Investigative environment. Nordvik (1996) found empirical support for this

assumption. Correspondingly, the relation between judging and Conventional environment presupposes the relation between perceiving and Artistic environment (see Dillon & Weissman, 1987). In most of the cases the correlations between MBTI scales and Holland's profiles have been low or moderate, which confirms that further studies are needed.

As business students were the subject of the study, it was expected that the Enterprising environment would be preferred to the others regardless of the MBTI dimensions. However, those cases in which some other work environment is preferred to Enterprising, are of particular interest. As earlier studies have mostly reported the results in terms of the MBTI dichotomies, this study also does so in order to make comparison and generalization possible. This study adds whole type analysis as well and provides a crosscultural view of the topic.

Based on previous research, it was expected that all MBTI dichotomies, i.e., extraversion-introversion, sensing-intuition, thinking-feeling, judging-perceiving, would be related to work environments to some extent. In agreement with this, it was predicted that type level would be related to work environments. To be precise, it was assumed that extraversion would be associated with the Enterprising environment more than introversion; introversion with the Investigative environment more than extraversion; sensing with the Conventional environment more than intuition; intuition with the Artistic environments more than sensing; thinking with the Realistic environment more than feeling; feeling with the Social environments more than thinking; judging with the Conventional environment more than perceiving; and perceiving with the Artistic environment more than judging.

### Method

**Participants.** The sample consisted of 533 business students from the University of Vaasa. Within this group there were 292 males (55%) and 241 females (45%). Their branches of study were mainly accounting (39%), marketing (18%), and management and organization (18%). The mean age of the subjects was 22, with a range from 18 to 47.



**Instruments.** The construct validity and reliability of the MBTI have been examined across age groups, genders, occupations, and cultures and are well established (Buros, 1978; Carlyn, 1977; Murray, 1990). Reliability studies of the Finnish MBTI (Form F) also indicate relatively good internal consistency.

Based on split-half continuous scores, the internal consistency of the Finnish MBTI was analyzed using Pearson's correlation coefficients (E-I, .73; S-N, .65; T-F, .71; J-P, .76) and Cronbach's coefficient alpha (E-I .84; S-N, .79; T-F, .83; J-P, .86). Three scales (E-I, T-F, J-P) show the best internal consistency. The lowest value was on the S-N scale, although in American samples the T-F scale has had the lowest internal consistency. Also, in the S-N scale, students had more values under the critical preference score of nine than in the other scales. Because there was no retest in this study, the test-retest analysis could not be performed.

For the validity of the MBTI, the continuous scores derived for the split-half analysis were tested to find whether the measured scales actually loaded on the expected factors. Varimax rotated factor analysis was chosen in order to see if the scales grouped as expected. Accordingly, four factors arose from the eight scales. The statistical results of the analysis are available from the author on request.

As both halves of the MBTI index scores loaded on the same factors and not on the other factors, the results suggest that the items in the questionnaire consistently measure the same thing. Indirectly this supports the construct validity of the measure as well. Communality was strong in each variable (.83-.88).

The Career Orientation Questionnaire included external variables (gender, age, major, father's and mother's occupations) and an open-ended question about career expectations: "Next, describe as accurately as possible your future job. The job does not have to be realistic or practical. Write frankly about your dreams, what you would like to do, when and how."

**Procedure.** The data were collected in September 1996 and 1997 from a management and organization course (5 credits) that is a basic course for business students at the University of Vaasa. Self-awareness (e.g., the MBTI) and teamwork were included in the course.

Students filled in the MBTI and the short questionnaire described above. They had 1 hour and 30 minutes to fill in the MBTI and the Career Orientation Questionnaire. Because the questionnaires were a compulsory part of the studies, students who did not attend the first lecture filled in the questionnaires later in their own time in the Department of Management and Organization. Students were told that the questionnaires would be used to establish heterogeneous teams and for research purposes. The theory was explained, and the results were interpreted one week later. Some of the students were excluded from this study because their psychological preferences were unclear (i.e., less than the standard 9-point differential between preferences within each dimension).

The answers about career expectations were read carefully and classified to Holland's (1992) work environments according to their thematic similarity (see Table 1) by two raters: e.g., if a student wanted to work in the future as a teacher or a lecturer, the answer was classified to Holland's Social environment etc. The main rater and the second rater read and analyzed all of the data. (The material is available from the author.) Both raters had studied Holland's theory thoroughly. The analyses were done separately without the raters knowing each other's results. The level of interrater agreement was .77, which means that 59 % of the open answers were analyzed similarly by the raters (e.g., Hennessey & Amabile, 1988). The main rater's analysis is reported.

In this study chi-square analysis will be performed by cross-tabulation. Each personality dimension is used as an independent variable, and work environments as dependent variables. For categorical variables, cross-tabulation is one commonly used method of analysis. The crosstabulation can be interpreted by analyzing the pattern of percentages across each row (Ghuri, Gronhaug, & Kristianslund, 1995).

**Table 1. Classifying criteria for work environments (e.g., Holland, 1985).****Realistic environments**

- require technical, manual and mechanical competencies and interactions with tools, machines, and objects
- tend to involve practical, concrete activity
- involve tasks that presuppose technological skills and physical movement, often outdoors

**Investigative environments**

- require analytical, technical, scientific, and verbal competencies
- also require intelligence, independence, curiosity, and originality
- tend to involve problem solving, trouble shooting, or the creation or application of knowledge
- involve research and development jobs that require complicated analysis

**Artistic environments**

- require innovation or creativity
- tasks require also imagination, originality, intuition, emotionality, articulateness, artistic talent, impulsiveness
- involve working "with one's head," innovating, imagining, creating
- tend to involve unstructured, intellectual endeavors
- comprise free and artistic jobs, e.g., in business graphic and advertising jobs

**Social environments**

- require interpersonal competency and skill
- tasks presuppose also understanding, consideration, femininity, socialness, morality, helpfulness, and cooperational ability
- work together with other people: informing, instructing, helping, educating, developing, or improving

**Enterprising environments**

- require skill in the persuasion and manipulation of people
- advantages in performing tasks: persuasive skills, domination, energy, showing off, ambition, self-confidence, and sociability
- tend to involve working with people in a supervisory or persuasive way to achieve an organizational goal
- interest in group- and team-work
- e.g., sales and management duties

**Conventional environments**

- require skills in meeting precise standards of performance
- advantages in performing work assignments: methodicalness, conscientiousness, adaptability
- tend to involve working with things or numbers in an orderly way
- tasks demanding systematic treatment/handling
- among other things, tasks related to accounting and financing, which demand exact organization and evaluation of numerical data in fairly permanent and stable working conditions using established operational methods

### Results

**Sample.** Table 2 shows an SRTT (Granade & Myers, 1987) comparison of the type distribution of the Finnish business students' sample ( $N=533$ ) with working MBA students' data ( $N=1,925$ ) found in the *Journal of Psychological Type* (Power, Kummerow, & Lundsten, 1999; see Myers et al., 1998: 299). The majority of the sample ( $N=533$ ) prefer E (67%), N (53%), T (67%), and J (64%). Compared with the US MBA students, E ( $p < .001$ ), N ( $p < .001$ ), F ( $p < .001$ ), EJ ( $p < .001$ ), NF ( $p < .001$ ), NJ ( $p < .001$ ), FP ( $p < .05$ ), FJ ( $p < .001$ ), EN ( $p < .001$ ), ENFP ( $p < .01$ ), ENFJ ( $p < .001$ ), and ENTJ ( $p < .001$ ) are significantly overrepresented. The gender split of the working MBA students' data was 42% female and 58% male, with ages ranging from 25 to 56, and a median age of 29. The population was 95% Caucasian. In both samples, STs and NTs outnumbered SFs and NFs as expected from business students' data. The Finnish sample consisted mainly of ESTJs (15%), ISTJs (12%), and ENTJs (13%). The findings are in line with business students' data (Bayne, 1995) and managerial data (e.g., Asikainen, 1996). The working MBA students' sample was based on Form G data, while the Finnish sample is from Form F. This may have created some differences besides those of different cultures. Also, the great difference between these two samples is that most of the Finnish business students study full time, while the vast majority of working MBA students work full time. The main source of the greater preference for extraversion, intuition, and feeling in Finnish sample is less clear.

**Table 2. Type distribution of Finnish business students and SRTT comparison with the working MBA students (Power et al., 1999).**

N = 533				+ = 1% of N	I = Selection Ratio Index *p < .05 **p < .01 ***p < .001
The Sixteen Complete Types				Dichotomous Preferences	
ISTJ n = 66 (12.4%) I = 0.72** +++++	ISFJ n = 12 (2.2%) I = 0.69 ++	INFJ n = 11 (2.1%) I = 1.17 ++	INTJ n = 30 (5.6%) I = 0.80 + + + + +	E 358 (67.2%)	**I = 1.17
				I 175 (32.8%)	**I = 0.77
				S 249 (46.7%)	**I = 0.83
				N 284 (53.3%)	**I = 1.22
				T 359 (67.3%)	**I = 0.67
				F 174 (32.7%)	**I = 1.42
				J 341 (64.0%)	I = 1.03
				P 192 (36.0%)	I = 0.96
ISTP n = 15 (2.8%) I = 0.67 +++	ISFP n = 7 (1.3%) I = 1.05 +	INFP n = 9 (1.7%) I = 0.90 ++	INTP n = 25 (4.7%) I = 0.77 + + + + +	Pairs and Temperaments	
				IJ 119 (22.3%)	**I = 0.76
				IP 56 (10.5%)	I = 0.76
				EP 136 (25.5%)	I = 1.05
				EJ 222 (41.7%)	**I = 1.26
				ST 183 (34.3%)	**I = 0.76
				SF 66 (12.4%)	I = 1.10
				NF 108 (20.3%)	**I = 1.74
				NT 176 (33.0%)	I = 1.03
ESTP n = 22 (4.1%) I = 0.67 ++++	ESFP n = 11 (2.1%) I = 1.02 ++	ENFP n = 51 (9.6%) I = 1.62** +++++	ENTP n = 52 (9.8%) I = 0.96 +++++	SJ 191 (36.4%)	*I = 0.86
				SP 55 (10.3%)	*I = 0.76
				NP 137 (25.7%)	I = 1.07
				NJ 147 (27.6%)	**I = 1.39
				TJ 245 (46.0%)	I = 0.91
				TP 114 (21.4%)	*I = 0.80
				FP 78 (14.6%)	*I = 1.32
				FJ 96 (18.0%)	**I = 1.52
ESTJ n = 80 (15.0%) I = 0.86 +++++	ESFJ n = 36 (6.8%) I = 1.43 +++++	ENFJ n = 37 (6.9%) I = 3.34*** +++++	ENTJ n = 69 (12.9%) I = 1.46** +++++	IN 75 (14.0%)	I = 0.84
				EN 209 (39.2%)	**I = 1.45
				IS 100 (18.8%)	**I = 0.73
				ES 149 (28.0%)	I = 0.92
				ET 223 (41.8%)	I = n.a.
				EF 135 (25.3%)	I = n.a.
				IF 39 (7.3%)	I = n.a.
				IT 136 (25.6%)	I = n.a.

Jungian Types (E)			Jungian Types (I)			Dominant Types					
	n	%	Index	n	%	Index	n	%	Index		
E-TJ	149	28.0 %	n.a.	I-TP	40	7.5 %	n.a.	Dt. I	189	35.5 %	n.a.
E-FJ	73	13.7 %	n.a.	I-FP	16	3.0 %	n.a.	Dt. F	89	16.7 %	n.a.
ES-P	33	6.2 %	n.a.	IS-J	78	14.6 %	n.a.	Dt. S	111	20.8 %	n.a.
EN-P	103	19.3 %	n.a.	IN-J	41	7.7 %	n.a.	Dt. N	144	27.0 %	n.a.

**Career expectations.** The Finnish business students' career expectations were divided into the Enterprising (38%), the Social (17%), and the Conventional environments (14%). These environments were expected to be preferred by business students (e.g., Johns, 1992). Enterprising environment tasks typically require directing, controlling, and planning the activities of others as well as selling, persuading and influencing. Some students preferred political interests, which are also involved in the Enterprising environment. As most of the students aspired to some managerial position, the relation to Enterprising was obvious.

In the Social environment, helping, teaching, consulting, training, developing and understanding others are expected. These students aspired to developing, teaching, training, consulting and lecturing positions or to personnel duties where they could help other people.

Accounting and finance jobs, which require precise organization and evaluation of numerical information in a fairly stable work setting, are related to the Conventional environment. Many students found financial, accounting, or computer technology professions most attractive.

The least favored were the Realistic (8%), the Investigative (11%), and the Artistic (12%) environments. Artistic and Investigative work environments were preferred almost equally. In business, some advertising and graphics duties may relate to Artistic work environments. Perhaps students with a marketing major were oriented to the Artistic environment. The Investigative environment may be preferred later when students have finished their master's thesis and know better what is required in the Investigative work environment. However, these results are in line with the positions in work life. There are relatively more duties for MBAs in Enterprising, Social, and Conventional work environments than in Realistic, Investigative, or Artistic work environments.

There were significant differences in work environments for three of the MBTI dichotomies, i.e., extraversion-introversion [Chi-square (5, n =399) =

26.543,  $p = .0001$ ], sensing-intuition [Chi-square (5,  $n = 337$ ) = 24.801,  $p = .0002$ ], thinking-feeling [Chi-square (5,  $n = 384$ ) = 36.046,  $p = .0001$ ], as measured by the chi-square statistic. The chi-square analysis compared the frequencies of the work environments across the two personality preferences in each MBTI dimension.

**The Extraversion-Introversion Dichotomy.** Table 3 depicts the numbers and percentage frequencies of work environments, both overall and broken down according to preference for extraversion or introversion. A chi-square led to a significant result ( $p = .0001$ ), showing that frequencies differed in work environments depending on the extraversion-introversion dichotomy as was expected. Table 3 shows that 57 % of Es preferred Enterprising and Social environments whereas 55 % of Is preferred Enterprising and Conventional environments. Interestingly, 24 % of Is preferred the Conventional environment compared with only 7 % of Es. This was the clearest difference between the preferences. It was expected that extraversion would be more related to the Enterprising environment than introversion and introversion more to the Investigative environment than extraversion. As illustrated in Table 3, 42 % of Es preferred Enterprising which exceeded the overall frequency while 33 % of Is preferred Enterprising which was below the overall frequency. 11 % of Is and Es preferred Investigative environment, so these findings do not support the expected relation between introversion and Investigative. However, our prediction was partly supported since extraverts preferred Enterprising more than introverts did. It also turned out that Es (19%) preferred the Social environment slightly more than Is did (12%).

In the Conventional environment, the tasks include organizing written and numerical information or analyzing this information with an unambiguous set of procedures (e.g., computing financial ratios). Introverts who prefer working alone with written assignments seemed to be related to the Conventional environment. Extraverts are people-oriented, something that is needed in the Enterprising environment when leading and controlling others, and in the Social environment when training and teaching other people.

**Table 3. Working environments for extraverts compared with introverts.**

	Overall ( <i>n</i> = 399)	E ( <i>n</i> = 286)	I ( <i>n</i> = 113)
Realistic	33 (8%)	20 (7%)	13 (11%)
Investigative	44 (11%)	31 (11%)	13 (11%)
Artistic	51 (13%)	41 (14%)	10 (9%)
Social	66 (17%)	53 (19%)	13 (12%)
Enterprising	157 (39%)	120 (42%)	37 (33%)
Conventional	48 (12%)	21 (7%)	27 (24%)

Chi-square (5, *n* = 399) = 26.543, *p* = .0001

Note: Only students with clear preferences (score > 9) in the E-I scale were included in the analysis.

**The Sensing-Intuition Dichotomy.** A chi-square revealed a significant result (*p* = .0002), showing that frequencies differed in work environments depending on the sensing-intuition dichotomy as expected. As can be seen from the Table 4, 57 % of Ss preferred Enterprising and Conventional environments whereas 55 % of Ns preferred Enterprising and Artistic environments. It is noteworthy that sensing types preferred the Artistic environment least whereas the Realistic environment was the least preferred in the whole sample. The clearest difference between Ss and Ns appeared in Artistic and Conventional environments as expected: 22 % of Ss compared with 8 % of Ns preferred the Conventional environment and correspondingly 18 % of Ns compared to 5 % of Ss preferred the Artistic environment. Our predictions were supported in this dichotomy. In other work environments the frequencies between the preferences were about the same.

The Artistic environment is the most different from the Conventional environment. As sensing types prefer established ways of doing things and are patient with routine details, their desire for the Conventional environment seems understandable. Since intuitive types like to solve new problems and are patient with complicated situations, their desire for the Artistic environment where ambiguous and unsystematic activities are usual, seems appropriate.



**Table 4. Working environments for sensing types compared with intuitive types.**

	Overall ( <i>n</i> = 337)	S ( <i>n</i> = 161)	N ( <i>n</i> = 176)
Realistic	33 (10%)	15 (9%)	18 (10%)
Investigative	38 (11%)	16 (10%)	22 (12%)
Artistic	39 (11%)	8 (5%)	31 (18%)
Social	56 (17%)	30 (19%)	26 (15%)
Enterprising	121 (36%)	56 (35%)	65 (37%)
Conventional	50 (15%)	36 (22%)	14 (8%)

Chi-square (5, *n* = 337) = 24.801, *p* = .0002

Note: Only students with clear preferences (score > 9) in the S-N scale were included in the analysis.

**The Thinking-Feeling Dichotomy.** A chi-square revealed a significant result (*p* = .0001), showing that frequencies differed in work environments depending on thinking-feeling dichotomy as was expected. 59 % of Ts preferred Enterprising and Conventional environments, whereas 62 % of Fs preferred Social and Enterprising environments. It was expected that thinking would be more related to the Realistic environment than feeling and feeling more to the Social environment than thinking. Fs (32%) preferred Social environment significantly more than Ts (11%) did, as expected. Fs (17%) also preferred the Artistic environment more than Ts (8%) did. 43% of Ts compared with 30% of Fs preferred the Enterprising environment whereas 9% of Ts compared with 4% of Fs preferred Realistic environment. According to these results, the expected relation between thinking and the Realistic environment was not supported. Ts also preferred Investigative and Conventional environments a little more compared with Fs. Results are shown in Table 5.

Feeling types tend to be aware of other people and their values. In the Social environment, when developing, teaching, or training others, the potential strengths of feeling types are needed. Thinking types are more analytically oriented, so they respond more easily to people's thoughts than feelings. In the Enterprising environment leading and controlling are expected rather than helping or understanding whereas in Realistic environments few social demands are needed, thus thinking types seem to prefer Enterprising and Realistic environments more than feeling types do.

**Table 5. Working environments for thinking types compared with feeling types.**

	Overall ( <i>n</i> = 384)	T ( <i>n</i> = 269)	F ( <i>n</i> = 115)
Realistic	30 (8%)	25 (9%)	5 (4%)
Investigative	42 (11%)	34 (13%)	8 (7%)
Artistic	41 (11%)	22 (8%)	19 (17%)
Social	67 (17%)	30 (11%)	37 (32%)
Enterprising	150 (39%)	115 (43%)	35 (30%)
Conventional	54 (14%)	43 (16%)	11 (10%)

Chi-square (5, *n* = 384) = 36.046, *p* = .0001

Note: Only students with clear preferences (score > 9) in the T-F scale were included in the analysis.

**The Judging-Perceiving Dichotomy.** This dichotomy was not statistically related to work environments, which gives support to the studies of Hammer (1996), Nordvik (1996) and Miller (1988). Table 6 depicts the differences between judging and perceiving types. 55 % of Js preferred Enterprising and Conventional whereas 59 % of Ps preferred Enterprising and Artistic environments. Ps (17%) preferred Artistic more than Js (10%) did, whereas Js (17%) preferred Conventional more than Ps (9%) did. Js and Ps preferred Realistic, Investigative, Social, and Enterprising environments to an equal extent. Our predictions were supported.

Perceiving types adapt to changing situations, which is expected in Artistic environments where ambiguous and unsystematic activities are common. Judging types prefer order, which is expected in Conventional environments, where precise organization of numerical information is needed in a fairly stable work setting.

**Table 6. Working environments for judging types compared with perceiving types.**

	Overall ( <i>n</i> = 389)	J ( <i>n</i> = 256)	P ( <i>n</i> = 133)
Realistic	32 (8%)	20 (8%)	12 (9%)
Investigative	36 (9%)	25 (10%)	11 (8%)
Artistic	47 (12%)	25 (10%)	22 (17%)
Social	63 (16%)	43 (17%)	20 (15%)
Enterprising	155 (40%)	99 (38%)	56 (42%)
Conventional	56 (15%)	44 (17%)	12 (9%)

Chi-square (5, *n* = 389) = 8.173, *p* = .147

Note: Only students with clear preferences (score > 9) in the J-P scale were included in the analysis.

**Sixteen types.** The working environment preferences for the 16 types are presented in Table 7. Although the cell sizes were too small to permit extensive interpretation, for the type level the relationship with working environments was significant [Chi-square (75, *N* = 511) = 129.23, *p* < .0001]. ISTJ, ISFJ, INFJ, INTJ, INTP, ESTJ, ESTP, ENFP, ENTJ, and ENTP were highest in Enterprising environments. There were more N, T, and J preferences among them than opposite S, F or P preferences. They are called the logical, visionary decision makers oriented to either the inner or the outer world. Those aspects are valued in the Enterprising environment when a situation demands it e.g. in managerial positions. ESFJ, ESFP, and ENFJ were highest in Social environments. They share extraversion with feeling. EFs tend to concentrate on seeking peaceful solutions in the work setting. ISFP and INFP were highest in Artistic environments. They share three common preferences, I, F, and P, so they are called adaptable introverts. They value work autonomy and adapt well to change in the work setting. ISTP was highest in the Conventional environment. This type likes to deal with what is real and factual in a careful, unhurried way. A Conventional environment provides a work setting where these preferences can be expressed.

In table 7 emerged marked differences in the following environments: 16% of ENTPs preferred the Realistic environment compared with 0% of ISFJs, INFPs, and ESFPs; 22% of ISTPs and 20% of INFJs preferred the Investigative environment compared with 0% of ISFJs and ESFPs; 3 % of ISTJs preferred the

Artistic environment compared with 45% of INFPs, 43% of ISFPs, and 25% of ENFPs. In the Social environment 45 % of ESFPs, 38% of ENFJs, and 36% of ESFJs scored high compared with 7% of ENTJs and ISTPs; 49% of ENTJs and ESTPs preferred the Enterprising environment compared with 0% of ISFPs; 35% of ISTPs, and 29% of ISTJs preferred the Conventional compared with 0% of ISFPs, 2% of ENFPs, and 4% of ENTJs.

Table 7. Working environments of the 16 types.

		Realistic	Investigative	Artistic	Social	Enterprising	Conventional
ISTJ	(n = 62)	7 %	11 %	3 %	13 %	37 %	29 %
ISTP	(n = 14)	7 %	22 %	7 %	7 %	22 %	35 %
ISFJ	(n = 12)	0 %	0 %	17 %	17 %	41 %	25 %
ISFP	(n = 7)	14 %	14 %	43 %	29 %	0 %	0 %
INFJ	(n = 10)	10 %	20 %	0 %	10 %	40 %	20 %
INFP	(n = 9)	0 %	11 %	45 %	11 %	11 %	22 %
INJ	(n = 28)	11 %	7 %	11 %	18 %	35 %	18 %
INTP	(n = 24)	13 %	8 %	8 %	8 %	42 %	21 %
ESTJ	(n = 74)	12 %	12 %	6 %	12 %	43 %	15 %
ESTP	(n = 22)	5 %	5 %	5 %	18 %	49 %	18 %
ESFJ	(n = 36)	8 %	8 %	6 %	36 %	31 %	11 %
ESFP	(n = 9)	0 %	0 %	11 %	45 %	33 %	11 %
ENFJ	(n = 37)	3 %	8 %	19 %	38 %	27 %	5 %
ENFP	(n = 49)	4 %	8 %	25 %	22 %	39 %	2 %
ENTJ	(n = 68)	9 %	13 %	18 %	7 %	49 %	4 %
ENTP	(n = 50)	16 %	16 %	10 %	8 %	40 %	10 %
Total	N=511	8% (n=43)	11% (n=55)	12% (n=61)	17% (n=86)	38% (n=195)	14% (n=71)

Note: Chi-square (75, 511) = 129.23,  $p = .0001$ .

In Table 8 are shown four types which were high in each work environments when compared to other MBTI types. A number of individual items are noteworthy: ENTPs, ISFPs, INTPs, and ESTJs were high in *Realistic* environments; ISTPs, INFJs, ENTPs, and ENTJs were high in *Investigative* environments; INFPs, ISFPs, ENFPs, and ENFJs were high in *Artistic* environments; ESFPs, ENFJs, ESFJ, and ENFPs were high in *Social* environments; ESTPs, ENTJs, ESTJs and INTPs were high in *Enterprising* environments; ISTPs, ISTJs, ISFJs, and INTPs were high in *Conventional* environments (see Table 8). There were no findings between ISFJ, INFP, ESFP and Realistic environments; ISFJ, ESFP, and Investigative environments; INFJ and Artistic environments; ISFP and Enterprising and Conventional environments. These types were underrepresented in

the sample, which can partly explain the results. On the other hand, these results may be the trend.

**Table 8. Most frequent types in each RIASEC.**

<b>Realistic</b>	<b>Investigative</b>	<b>Artistic</b>
ENTP (16%)	ISTP (22%)	INFP (45%)
ISFP (14%)	INFJ (20%)	ISFP (43%)
INTP (13%)	ENTP (16%)	ENFP (25%)
ESTJ (12%)	ENTJ (13%)	ENFJ (19%)
<b>Social</b>	<b>Enterprising</b>	<b>Conventional</b>
ESFP (45%)	ESTP (49%)	ISTP (35%)
ENFJ (38%)	ENTJ (49%)	ISTJ (29%)
ESFJ (36%)	ESTJ (43%)	ISFJ (25%)
ENFP (22%)	INTP (42%)	INTP (21%)

### Summary of Results

The connection between the expectations and the results was as follows: The E-I ( $p = .0001$ ), S-N ( $p = .0002$ ), and T-F ( $p = .0001$ ) dichotomies were statistically related to Holland's (1985) profiles. This finding is in line with the studies of Hammer (1996) and Nordvik (1996), who also found relationships in other dichotomies but not in the J-P dichotomy.

The Enterprising environment was preferred most by all the other preferences except feeling: more Fs preferred the Social environment to the Enterprising. Besides the Enterprising environment, many Es and Fs preferred the Social environment; Is, Ss, Ts, and Js the Conventional environment, and Ns and Ps the Artistic environment.

The association between E and Enterprising work environments was as expected, while extraverts preferred the Enterprising environment more often than introverts. I was not related to the Investigative work environment as

expected, but it was clearly more associated with the Conventional environment than E.

As expected, sensing was related to the Conventional work environment more than intuition whereas intuition was related to Artistic environment more than sensing. Our prediction was supported.

The association between F and Social work environments was as expected, while feeling types preferred the Social environment more often than thinking types. T was not clearly related to Realistic environment as expected, but it was more associated with the Enterprising environment than F.

As expected, judging was related to the Conventional environment more than perceiving whereas perceiving was related to Artistic work environment more than judging. Our prediction was supported.

The Type level was also statistically related to Holland's work environments ( $p = .0001$ ). All the other types were highest in the Enterprising environment except ESFJ, ESFP, ENFJ, ISFP, INFP and ISTP. The types which were high in each work environment were presented in Table 8. The results at the type level were mostly in line with the results of the MBTI dichotomies with a few exceptions: INTP contrary to Es (ESTP, ENTJ, ESTJ) was high in Enterprising environments; Is (ISTP, ISTJ, ISFJ, INTP) were high in Conventional environments; INTP contrary to Ss (ISTP, ISTJ, ISFJ) was high in Conventional environments; ISFP contrary to Ns (INFP, ENFP, ENFJ) was high in Artistic environments; Ts (ESTP, ENTJ, ESTJ) were high in Enterprising environments; Fs (ESFP, ENFJ, ESFJ, ENFP) were high in Social environments; ISTP and INTP contrary to Js (ISTJ, ISFJ) were high in Conventional environments; and finally ENFJ contrary to Ps (INFP, ISFP, ENFP) was high in Artistic environments.

As shown in Table 8, the type level also supported the following relationships: Es (ESFP, ENFJ, ESFJ, ENFP) were high in Social environments; ISTP contrary to Ns (INFP, ENFP, ENFJ) was high in Investigative environments;

Fs (INFP, ISFP, ENFP, ENFJ) were high in Artistic environments; ISFP contrary to Ts (ENTP, INTP, ESTJ) was high in Realistic environments; INFJ contrary to Ts (ISTP, ENTP, ENTJ) was high in Investigative environments; ISFJ contrary to Ts (ISTP, ISTJ, INTP) was high in Conventional environments; and finally ESTJ contrary to Ps (ENTP, ISFP, INTP) was high in Realistic environments.

### Discussion

The present results detail the relationship between the MBTI and Holland's work environments (1992) in a sample of business students. Generalizations may be made concerning business students but not concerning other student groups. While the Finnish sample included more extraverted, intuitive, and feeling types than the US sample, Enterprising, Social and Artistic work environments may have been preferred more often than expected.

Earlier results concerning MBTI dichotomies (Dillon & Weissman, 1987; Hammer, 1996; Myers et al., 1998; Nordvik, 1996) were mostly confirmed, even though the data and research method were different. This investigation gives strong support to the MBTI and to Holland's (1973, 1985, 1992) theories, even when cross-cultural features of study are included. Some new associations between MBTI preferences and Holland's model were found that were not observed in earlier studies: Introversion related clearly more to the Conventional environment than extraversion; Thinking was more associated with the Enterprising environments than feeling; and feeling was associated with the Artistic environment more than thinking. The results at the type level supported these results with a few exceptions.

Myers and McCaulley (1985) reported a relationship between introversion and the Investigative work environment (see also Nordvik, 1996) and between sensing and the Enterprising orientation. However, this study did not find such a relationship, and neither did the studies by Hammer (1996) and Dillon and Weissman (1987). Also, sensing was not associated with the Realistic

environment, which contrasts with Dillon and Weissman, but the result is in line with Hammer and Myers and McCaulley.

The percentages of types are helpful in understanding some basic characteristics of the MBA program. Especially the relationship between business studies and feeling types may be better understood. In business, there is a place for feeling types who bring different approaches and insights to that field. It would be important for business studies to attract feeling types in the future, too. In education, the business cases could be approached by strengths of different types or preferences, e.g., NFs could be creative in Artistic environments doing advertising and marketing duties, ISTs could enjoy computer-based simulations in Conventional environments, etc. In the future, it would be interesting to study whether these career expectations change when students enter their first real jobs or whether the students end up in the careers they planned.

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## **ORGANIZATIONAL EMPLOYMENT VERSUS ENTREPRENEURSHIP: THE PERSONALITY APPROACH TO BUSINESS STUDENTS' CAREER ASPIRATIONS**

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### **ABSTRACT**

*The purpose of this study was to investigate whether personality influences the choice of entrepreneurship or organizational employment. Career aspirations related to entrepreneurship or organizational employment were studied in a sample of 533 business students. Personality profiles were defined in terms of the Myers-Briggs Type Indicator (MBTI). The most frequent types of business students were ESTJ, ENTJ and ISTJ. The data based on the sample of Finnish business students was compared with the data of Australian postgraduate MBA students. In the Finnish sample extraversion and feeling were overrepresented. As expected, organizational employment was selected more than entrepreneurship. The J-P dichotomy of the MBTI was statistically related to the employment status choice.*

### **INTRODUCTION**

Occupational aspiration and its role in career choice and attainment have attracted increasing interest, as can be clearly seen in the number of articles published during recent years (e.g., Armstrong & Crombie, 2000; Biggerstaff, 2000; Luzzo, 1995). At the same time, Fournier (1997) has emphasized the need to develop a better understanding of graduates' career patterns and aspirations. Correspondingly, Henderson and Robertson (2000) have demonstrated that relatively little is known about young adults' views of entrepreneurship and entrepreneurship as a career. In several studies of career aspirations, the main predictor has been gender. Nevertheless, the relation between personality and career choice (e.g., Holland, 1985; Järnlström, 2000; Järnlström, in press) has been widely accepted. The purpose of this study is to find out whether some personality

profiles are more oriented than others to employment status choice in the sample of business students. The main research question concerns whether personality influences the choice of organizational or entrepreneurial employment aspiration. The type preferences of students are reported along with a comparison between Finnish MBA students and Australian postgraduate students in business administration.

For business students, the possibility of starting and operating their own business is a viable alternative to being employed by an established company (Duffy & Stevenson, 1984). As companies are being downsized, fewer management positions are available there. Entrepreneurship can be a challenging opportunity for academics also. Several surveys support this view. For example, Karr (1988) reported that 46% of college students consider a "business of one's own" an excellent way to get ahead. Along similar lines, Sandholz (1990) reported the career goals of MBAs showing that 44% of MBAs wanted to become independent entrepreneurs compared with 34% of MBAs wishing to become high-ranking corporate executives. Even though the latest statistics concerning the placement of Finnish graduate MBAs have indicated that managerial positions in companies are more attractive than entrepreneurship (Uljas, 2001), it is possible that entrepreneurship will become more attractive among the MBAs in the future. At the moment the distinction between entrepreneurship and company employment among MBAs is huge: 4% as compared with 96% (Uljas, 2001).

#### **EARLIER STUDIES OF WORK VALUES RELATED TO EMPLOYMENT STATUS CHOICE**

Psychosocial values have been related to the employment status choice, which has been defined by Katz (1992, p.30) 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". For example Brenner, Pringle, and Greenhaus (1991) investigated the relationship between work values and career intentions among a sample of graduating seniors majoring in business. They found that those who would rather operate their own business attach greater importance to creativity, risk taking, independence, and autonomy. Those who prefer to work as employees have a greater desire for job clarity; they prefer jobs with a regular routine, and clearcut rules and procedures. Brenner, Pringle, and Greenhaus (1991) further found that students perceived operating their own business would be more likely to provide them with exciting and desirable work outcomes, whereas working for an organization is likely to result in a safer, more routinized, and less exciting working life. Likewise Kolvereid (1996), in a sample of business students, studied the reasons for organizational employment versus self-employment. In general, the findings indicated that security, social environment, work load, avoidance of responsibility, and career were reasons usually given for preferring organizational employment, whereas economic opportunity, authority,

autonomy, challenge, self-realization, and participation in the whole process were reasons usually given for preferring self-employment.

### PERSONALITY APPROACH

In several studies it has been proposed that entrepreneurs differ from the persons who select large organizations or companies (e.g., Carland & Carland, 1992; Kolvereid, 1996; Reynierse, 1997). There are at least three common approaches used in research on the characteristics of entrepreneurs: the personality approach, the demographic approach, and the attitude theory approach (Fraboni & Saltstone, 1990; Lau & Chan, 1994; cf. Vesalainen & Pihkala, 1999). The personality approach, with psychological traits or characteristics of entrepreneurs has received particular attention. For example, these traits include the need for achievement (McClelland, 1971), locus of control (Brockhaus, 1982), tolerance of ambiguity (Begley & Boyd, 1987), a propensity for risk-taking (Sexton & Bowman, 1983, for a review), and type A behavior (Begley & Boyd, 1986). However, empirical investigations have not found any trait that is strongly and consistently associated with entrepreneurship. These empirical studies are marked by diverse and disparate results, perhaps due to problems in testing instruments and sample sizes (Sexton & Bowman, 1983). Several studies (e.g., Begley & Boyd, 1986; Chell, 1985; Gartner, 1989; Lorrain & Dussault, 1988) have questioned whether these trait models are appropriate to predict entrepreneurial characteristics (Jones-Evans, 1995). Even so, Carland and Carland (1992) and Scherer, Brodzinski, and Wiebe (1991) argued that personality approaches have value for understanding entrepreneurship.

#### The Type Theory Contrasted with Trait Theories

The theoretical background to the concept of personality in this study is derived from the theoretical work of Jung (1953). Where other observers saw people's behavior as random, Jung saw patterns (Engler, 1991). In Jung's theory, all conscious mental activity can be explained in terms of two basic attitudes (Extraversion and Introversion) and four functions: two perception processes (Sensing and Intuition) and two judgment processes (Thinking and Feeling). In every person, one of the attitudes and functions is dominant and its opposite is weaker.

In order to make the theory of Jung's psychological types understandable and useful in people's lives, the Myers-Briggs Type Indicator (MBTI) was developed (Myers & McCaulley, 1985). Briggs and Myers extended the model in the J/P (Judging and Perceiving) scale by making explicit one aspect of the theory that was implicit but undeveloped in Jung's work. The J/P scale describes identifiable attitudes and behaviors to the outside world (Myers, McCaulley, Quenk, & Hammer, 1998). The Myers-Briggs Type Indicator (MBTI) is one of the most widely used tools for nonpsychiatric populations in the area of clinical,

counseling, and personality assessment (Murray, 1990). Other applications include career planning (Bayne, 1990). The MBTI is probably the simplest and most reliable method of determining a person's Jungian type (Myers & Myers, 1980).

Type theory also assumes that people differ in the ways they like to use their minds, and that these differences influence the ways people like to work, what motivates them, and what satisfies them (Myers et al., 1998). The preferred combination of perception and judgment has much to do with career choice. Sensing types are attracted to work settings where well-learned knowledge is important, the work is tangible and the work concerns the immediate situation. Intuitive types are attracted to work settings where it is important to find the pattern in complex systems, to create new knowledge, to work with theory and imagination, and to have some intellectual challenge (Myers, 1979; Lawrence, 1993). People who prefer thinking are better at dealing with objects, machinery, principles or theories than with matters involving people, what they value and how they can be helped or persuaded. People dominated by feeling are interested in everything that involves people and their values.

The Extraversion/Introversion preference seems to be most important as regards finding an appropriate work setting within a particular occupation. The preference for E and I respectively reflects the extent to which individuals are oriented toward the outer world of people and things versus the inner world of concepts and ideas. According to the theory, the Judging/Perceiving preference is more related to working style than to tasks themselves. The preference for J or P measures the extent to which an individual adopts a judging attitude and aims to regulate and control his or her life versus being relatively open-minded and preferring to adapt to what happens. (Myers et al., 1998)

### **Entrepreneurs Compared with Managers**

Carland and Carland (1992) reported in an empirical test that entrepreneurs, small business owners, and managers were statistically different using the Keirsey and Bates (1984) temperaments of sensing-perceiving (SP), sensing-judging (SJ), intuitive-feeling (NF), and intuitive-thinking (NT). They found that entrepreneurs were more likely to display the NT temperament while the small business owners and managers were more likely to display the SJ temperament. The result supported the earlier studies of Carland (1982), Hoy and Boulton (1983), and Barbato and Durlabhji (1989), that entrepreneurs tended to be NTs and managers and small business owners SJs. Although the Carland's discussion centered on entrepreneurs as innovative NTs, their empirical results indicated that entrepreneurs tended to be NPs, whereas managers tended toward SJ. Similarly, Ginn and Sexton (1990) found that fast growth entrepreneurs showed significantly higher N, P, and NP orientations than managers. Furthermore, Routamaa, Vesalainen, and Pihlajaniemi (1996) found more ENs than ISs among internationally oriented entrepreneurs.



Reynierse (1995) suggested that the MBTI is particularly useful for examining both entrepreneurship and bureaucracy. Reynierse (1997) compared business entrepreneurs with samples of small business owners, business managers, and business executives using the MBTI. According to his study, entrepreneurs had significantly higher levels of P and lower levels of J. In addition, entrepreneurs had consistently more (entrepreneurial) EPs, NPs, and TPs, but fewer (bureaucratic) IJs, SJs, and FJs. When compared with business executives, there were no differences on the S-N preference, except entrepreneurs had more NPs but fewer NJs. According to Reynierse (1995), the J-P preference of the MBTI represents a broad continuum of entrepreneurship and bureaucracy in which the entrepreneurial P preference tends to initiate and promote change, whereas the bureaucratic J preference tends to encourage the established order and resist change. According to the study of Reynierse (1997), the alternative theory of entrepreneurs as NTs presented by Carland and Carland (1992) was rejected.

Garden (1997) studied MBTI profiles and career paths of software workers and found support for the notion that S-N and J-P dichotomies are relevant to the choice of starting one's own company, with both Ns and Ps significantly choosing this route relative to Ss and Js. In contrast, Es, Ss, Ts, and Js chose a managerial career path more often than Is, Ns, Fs, and Ps did. In the same study, Garden examined the relation between MBTI dichotomies and motivation profiles and found Ss to rate structure and security higher than Ns and autonomy less, Ts to rate money and comfort and power and responsibility more than Fs, and friendship less than Fs. Also Js rated structure and security higher than Ps and autonomy less. Correspondingly, Järilström (2000) found support for the notion that Ns and Ps chose relatively more entrepreneurship (creativity) and autonomous career anchors than Ss and Js in the sample of business students. Managerial competence was predicted to be selected by Ts and Js more than Fs and Ps, but the results indicated that Es, Ss and Js will select this career anchor more than Is, Ns, and Ps. A security career anchor including for example, the aspects of company loyalty, was more closely associated with Ss and Js than with their opposites, Ns and Ps.

Roach (1986) has reviewed several studies based on the MBTI related to managers. These studies show that thinking-judging types predominate in business and industry decision-making (e.g., Gaster, Tobacyk, & Dawson, 1984; Mosley & Pietri, 1985). Similarly, the TJs predominate at all organizational levels among American managers (Reynierse, 1993; Roach, 1986), whereas Ss predominate among lower managers but with the frequency of Ns increasing gradually with successive management levels and with Ns predominating at the executive level (Reynierse, 1993; Roach, 1986). Additionally, Finnish managers were predominantly STJs (Routamaa, Honkonen, Asikainen, & Pollari, 1997).

Even though the career intentions concerning organizational employment versus entrepreneurship have been studied among business students (e.g., Kolvereid, 1996), entrepreneurial or organizational employment aspirations of

business students have not been explained by MBTI. As shown earlier, the study of Reynierse (1995) concerning entrepreneurship and bureaucracy and the study of Carland (1982) have focused on real employment position rather than on aspirations.

The studies related to entrepreneurship and organizational employment have led to uniform results that are possible to associate in S-N and J-P dichotomies of the MBTI. Thus, we can predict that S-N and J-P dichotomies are statistically related to the selection of employment status choice. To be precise, we make the following predictions:

*Prediction 1. Sensing is more associated with organizational employment aspiration than intuition.*

*Prediction 2. Intuition is more associated with entrepreneurial aspiration than sensing.*

*Prediction 3. Judging is more associated with organizational employment aspiration than perceiving.*

*Prediction 4. Perceiving is more associated with entrepreneurial aspiration than judging.*

Thus, N and P are expected to be more related to entrepreneurial employment aspiration than are S and J, and correspondingly S and J are expected to be more related to organizational employment aspiration than are N and P. The E-I and T-F dichotomies will be reported without predictions, as the earlier studies have not been uniform with regard to these dichotomies. Logically the types with preference for intuition and perceiving, INFP, INTP, ENFP, and ENTP, are expected to be more related to entrepreneurial aspiration than other types; whereas types with preference for sensing and judging, ISTJ, ISFJ, ESTJ, and ESFJ, are expected to be more related to organizational employment aspiration than other types.

In this study, career aspirations were defined as the desire to work as an entrepreneur or organizational employment if there was no reality constraint. An entrepreneur is a person who aspires to found or buy his or her own enterprise, who aspires to work as a self-employed person, or who aspires to continue a family business. An organizational employment aspiration describes a person who aspires to enter an established organization as an employee or manager.

## METHOD

### Participants

The sample consisted of 533 business students from the University of Vaasa. Within this group there were 292 males (55%) and 241 females (45%). Their branches of study were mainly accounting (39%), marketing (18%), and

management and organization (18%). The mean age of the subjects was 22, with a range from 18 to 47.

### Instruments

Two instruments were used: the career orientation questionnaire and a Finnish (research) version of the Myers-Briggs Type Indicator, Form F. According to Carlyn (1977), Buros (1978), and Murray (1990), the construct validity and reliability of the MBTI have been examined across age groups, genders, occupations and cultures and are well established. The Myers-Briggs Type Indicator (Form F) is a 166-item forced choice questionnaire aimed at measuring the Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving dichotomies described earlier. In completing the MBTI, the respondent chooses between two or sometimes three alternatives per item. The choices are based on how the respondent usually feels or acts or, in some cases, on which alternative is more appealing. In a sample of 533 participants, the alpha coefficient on the scales varied from .79 to .86 (Järnlström, 2000); thus, the results on reliability indicated relatively good internal consistency. For the validity of the MBTI studied, varimax rotated factor analysis was performed. The results suggested that the items in the inventory consistently measure the same thing (see Järnlström, 2000).

*The Career Orientation Questionnaire* included external variables (gender, age, major, father's and mother's occupations) and an open-ended question about career aspirations: "Next, describe as accurately as possible your future job. The job does not have to be realistic or practical. Write frankly about your dreams, what you would like to do, when and how." For example Armstrong and Crombie (2000) included a similar question in their study concerning career aspirations of students.

### Procedure

The data were collected in September 1996 and 1997 from a management and organization course at the University of Vaasa. Students filled in the MBTI and the short questionnaire described above. Because the questionnaires were a compulsory part of the studies, students who did not attend the first lecture filled in the questionnaires later on their own time. Students were told that the questionnaires would be used for research purposes. Some of the subjects were excluded from this study because their psychological preferences were unclear (i.e., less than the standard 9-point differential between preferences within each dichotomy).

The answers about career expectations were read carefully and classified as organizational employment aspirations or entrepreneurial aspirations according to their thematic similarity by two raters: e.g., if a student wanted to work in the future as an entrepreneur, whether founding, buying or inheriting an enterprise, the answer was classified as "entrepreneurial aspirations" and, correspondingly, if

a student recorded a desire to enter an established organization, e.g., as a manager in an executive team, the answer was classified as "organizational employment aspiration." The main rater and the second rater read and analyzed all of the data. (The material is available from the author.) The analyses were done separately without the raters knowing each other's results. The level of interrater agreement was .93, which means that 86% of the open answers were analyzed similarly by the raters (e.g., Hennessey & Amabile, 1988). The raters discussed the disagreements and a classification (organizational employment versus entrepreneurship) was assigned to the remaining answers if possible.

In this study we performed chi-square analysis by cross-tabulation. Each personality dichotomy is used as an independent variable, and organizational employment or entrepreneurial aspirations as dependent variables. For categorial variables, cross-tabulation is one commonly used method of analysis (Ghuri, Gronhaug, & Kristianslund, 1995).

## RESULTS

### Sample

Table 1 shows an SRTT (Granade & Myers, 1987) comparison of the type distribution of the Finnish MBA's sample (N=533) with the sample of Australian postgraduate students in business administration found in the Manual (Myers & McCaulley, 1985). As shown in Table 1, the preferences E (67%), N (53%), T (67%), and J (64%) were overrepresented in the Finnish sample. The most frequent types were ESTJs (15%), ISTJs (12%), and ENTJs (13%). These TJ types are called logical decision-makers and they also have been overrepresented in U.S. working MBA students (Power, Kummerow, & Lundsten, 1999), in Australian postgraduate students in business administration (Myers & McCaulley, 1985) and in managerial data (e.g., Routamaa et al., 1997; Walck, 1992).

















Compared with the Australian postgraduate students, E ( $p < .001$ ), F ( $p < .001$ ), EP ( $p < .001$ ), EJ ( $p < .01$ ), SF ( $p < .01$ ), NF ( $p < .001$ ), FP ( $p < .001$ ), FJ ( $p < .001$ ), EN ( $p < .001$ ), ES ( $p < .01$ ), ENFP ( $p < .001$ ), and ENFJ ( $p < .01$ ) are significantly overrepresented. The main source of the greater preference for extraversion and feeling in the Finnish sample is less clear. One possible reason for this might be the high number of women in the Finnish sample besides those of different cultures. The gender split in Australian data was not available. These results support mostly the earlier findings of Järnlström (in press). In her study, the Finnish MBA students were compared with U.S. MBA students' data. In the Finnish and Australian samples, STs and NTs outnumbered SFs and NFs as expected from business students' data.

### Career Aspirations

The business students' career aspirations were divided into organizational employment and entrepreneurial aspirations. Altogether 81% (327) of the business students preferred organizational employment and 19% (76) preferred

entrepreneurship as their career aspiration. These results are in line with Hammer (1997) and Uljas (2001), and suggest that most of the business students enter in organizational employment instead of entrepreneurship. Interestingly, even though only 19% aspired to an entrepreneurial career, the result is much higher than expected based on the results of Uljas (2001), which suggest that only 4% of MBAs work as entrepreneurs. It is possible to claim that in the future there will be more potential entrepreneurs among MBAs.

**Table 1. Type Distribution of Finnish Business Students (N = 533) and SRTT Comparison with the Australian Postgraduate MBA Students (N=228)**

<b>ISTJ</b> N = 66 % = 12.38 I = 0.50** 	<b>ISFJ</b> N = 12 % = 2.25 I = 0.73 	<b>INFJ</b> N = 11 % = 2.06 I = 1.57 	<b>INTJ</b> N = 30 % = 5.63 I = 0.41*** 	E 358 67.17 1.52** I 175 32.83 0.59**
<b>ISTP</b> N = 15 % = 2.81 I = 0.46* 	<b>ISFP</b> N = 7 % = 1.31 I = 0.00 	<b>INFP</b> N = 9 % = 1.69 I = 1.92 	<b>INTP</b> N = 25 % = 4.69 I = 0.46** 	S 249 46.72 0.99 N 284 53.28 1.01
<b>ESTP</b> N = 22 % = 4.13 I = 1.88 	<b>ESFP</b> N = 11 % = 2.06 I = 4.71 	<b>ENFP</b> N = 51 % = 9.57 I = 3.64*** 	<b>ENTP</b> N = 52 % = 9.76 I = 1.17 	T 359 67.35 0.76** F 174 32.65 2.98**
<b>ESTJ</b> N = 80 % = 15.01 I = 1.10 	<b>ESFJ</b> N = 36 % = 6.75 I = 5.13** 	<b>ENFJ</b> N = 37 % = 6.94 I = 5.26** 	<b>ENTJ</b> N = 69 % = 12.95 I = 0.89 	J 341 63.98 0.92 P 192 36.02 1.17
				U 119 22.33 0.58*** IP 56 10.51 0.61* EP 136 25.52 1.88*** EJ 222 41.65 1.36**
				ST 183 34.33 0.81* SF 66 12.38 2.57** NF 108 20.26 3.30*** NT 176 33.02 0.71***
				SJ 194 36.40 0.94 SP 55 10.32 1.18 NP 137 25.70 1.17 NJ 147 27.58 0.90
				TJ 245 45.97 0.74*** TP 114 21.39 0.80 FP 78 14.53 3.71*** FJ 96 18.01 2.57***
				IN 75 14.07 0.54*** EN 209 38.21 1.47*** IS 100 18.76 0.63*** ES 149 27.95 1.59**
				Sdom 111 20.83 0.79 Ndom 144 27.02 1.04 Tdom 189 35.46 0.80* Fdom 89 16.70 4.76***

\* < .05, \*\* < .01, \*\*\* < .001

The Selection Ratio Type Table was devised by Isabel Myers as a way of displaying the distribution of types within a sample and for comparing different samples. It makes either the chi-square or Fisher's test depending on the number in each cell. If the Index is greater than 1, the proportion in the sample is larger than the proportion in the base. If the Index is less than 1, the proportion in the sample is smaller than the proportion in the base (Moody, Granada, & Myers, 1993, pp. 25-26).

The chi-square analysis compared the frequencies of the career aspirations across the two personality preferences in each MBTI dichotomy. There were significant differences in career aspirations for one of the MBTI dichotomies, i.e., judging-perceiving [ $X(1, n = 322) = 5.119, p = .02$ ], as measured by the chi-square statistic.

#### The Extraversion-Introversion Dichotomy

Table 2 depicts the numbers and percentage frequencies of organizational employment and entrepreneurship aspirations, both overall and broken down according to preference for extraversion or introversion. Table 2 shows that the frequencies between the preferences were about the same. Eighty percent of Es and 81% of Is preferred organizational employment whereas 20% of Es and 19% of Is selected entrepreneurship. These percentage results are in line with the overall data. As expected, the results indicate that the E-I dichotomy is not statistically related to the selection of employment status choice ( $p = .908$ ). The theoretical prediction is that extraverts are more attracted to fields requiring more active involvement with the world and introverts are more attracted to fields where conceptualization and individual work are important. Both entrepreneurship and organizational employment have fields for introverts and extraverts.

**Table 2. Employment Status Choice for Extraverted Types Compared with Introverted Types**

Career aspirations	Overall ( $n = 336$ )	E ( $n = 241$ )	I ( $n = 95$ )
Organizational employment	271 (81%)	194 (80%)	77 (81%)
Entrepreneurship	65 (19%)	47 (20%)	18 (19%)

Note: Chi-square (1,  $n=336$ )=0.013,  $p=0.9077$ . Only students with clear preferences (score>9) in the E-I scale were included in the analysis.

#### The Sensing-Intuition Dichotomy

As can be seen in Table 3, both Ss and Ns selected organizational employment more often than entrepreneurship; 84% of Ss compared with 81% of Ns preferred organizational employment and correspondingly 19% of Ns compared with 16% of Ss preferred entrepreneurship. We predicted that more Ss would select organizational employment than Ns and that Ns would select entrepreneurship more than Ss. The results support our predictions although not very strongly. The chi-square indicates that the S-N dichotomy was not statistically ( $p = .498$ ) related to the selection of employment status choice as had been predicted.

Brenner, Pringle, and Greenhaus (1991) found that students with entrepreneurial aspirations attach greater importance to creativity, risk-taking and autonomy, and students with organizational employment aspirations attach

importance to job clarity, regular routine and clear rules and procedures. Because intuitive types prefer looking for new possibilities and relationships, are patient in complicated situations and are partial to autonomy and creativity (Myers et al., 1998), it is possible that it is easier for them than for sensing types to produce business ideas and thus aspire to an entrepreneurial career. On the other hand, sensing types prefer established ways of doing things and are patient with routine details. The relation between sensing and organizational preference is appropriate. Even though no strong support was found for the predictions, the results are in the line with Brenner et al. (1991).

**Table 3. Employment Status Choice for Sensing Types Compared with Intuitive Types**

Career aspirations	Overall (n = 284)	S (n = 149)	I (n = 141)
Organizational employment	234 (82%)	120 (84%)	114 (81%)
Entrepreneurship	50 (18%)	23 (16%)	27 (19%)

Note: Chi-square (1,  $n = 284$ ) = 0.46,  $p = .4977$ . Only students with clear preferences (score > 9) in the S-N scale were included in the analysis.

#### The Thinking-Feeling Dichotomy

As shown in Table 4, both Ts and Fs selected organizational employment more often than entrepreneurship. The results indicate that organizational employment is more preferred by Fs (84%) than Ts (78%), whereas entrepreneurship is more preferred by Ts (22%) than Fs (16%), which was not predicted. The chi-square indicates that the T-F dichotomy is not statistically ( $p = .258$ ) related to the selection of employment status choice.

According to Kolvereid (1996), security and social environment among other things were reasons for organizational employment, and economic opportunity and authority the reasons for entrepreneurship. In addition, Garden (1997) reported that in her study of reasons for working, Ts rated money and comfort, and power and responsibility more than Fs did, and friendship less than Fs did. As feeling types enjoy pleasing people, like harmony and are more people oriented than thinking types, it is possible that organizational employment can offer more important relationships for these people than entrepreneurship can. Ts may have stressed the possibility of making money in entrepreneurship.

The results are in line with Carland (1982), Hoy and Boulton (1983), Barbato and Durlabhji (1989), Carland and Carland (1992), and Reynierse (1997). According to these studies, preference for thinking is more related to entrepreneurship than is feeling. However, organizational employment was selected by many students preferring managerial positions, and thus the relation between organizational employment and preference for thinking could have been expected on the basis of earlier studies (e.g. Walck, 1992). Organizational employment includes many other positions that may be related to preference for feeling, such as marketing, personnel management, and education tasks.

**Table 4. Employment Status Choice for Thinking Types Compared with Feeling Types**

Career aspirations	Overall (n = 313)	T (n = 215)	F (n = 98)
Organizational employment	250 (80%)	168 (78%)	82 (84%)
Entrepreneurship	63 (20%)	47 (22%)	16 (16%)

Note: Chi-square (1, n = 313) = 1.282,  $p = .2575$ . Only students with clear preferences (score > 9) in the T-F scale were included in the analysis.

#### The Judging-Perceiving Dichotomy

Js and Ps also preferred organizational employment to entrepreneurship. A chi-square test revealed a significant result ( $p = .028$ ), showing that frequencies differed in employment status choice depending on the judging-perceiving dichotomy as expected. As can be seen from Table 5, 85% of Js compared with 74% of Ps preferred the organizational employment, whereas 26% of Ps compared with 15% of Js selected entrepreneurship. This dichotomy supported our predictions.

In theory, occupations requiring system and order are expected to attract judging types and occupations requiring adaptability to change are expected to attract perceptive types (Myers et al., 1998). Brenner et al. (1991) found that those who preferred organizational employment have a greater desire for job clarity and they prefer jobs with a regular routine and clearcut procedures. They further found that creativity, risk taking, and independence were more related to self-employment. In addition, according to Reynierse (1995), preference for judging represents bureaucracy and preference for perceiving represents entrepreneurship. The relation between perceiving and entrepreneurship and, correspondingly, between judging and organizational employment, seems understandable.

**Table 5. Employment Status Choice for Judging Types Compared with Perceiving Types**

Career aspirations	Overall (n = 322)	J (n = 209)	P (n = 113)
Organizational employment	261 (81%)	177 (85%)	84 (74%)
Entrepreneurship	61 (19%)	32 (15%)	29 (26%)

Note: Chi-square (1, n = 322) = 5.119,  $p = .0237$ . Only students with clear preferences (score > 9) in the J-P scale were included in the analysis.

#### The Sixteen Types

The career aspiration preferences for the sixteen types are presented in Table 6. As can be found in Table 6, all types preferred organizational environment to entrepreneurship. Nevertheless, there were types that preferred entrepreneurship more than other types: INFPs (33%), ENTPs (31%), INTJs (30%), INTPs (26%), and ENFPs (23%). All these types share a similar preference



for intuition, and four of five types share a similar preference for perceiving. As it was predicted that intuition and perceiving types would be more related to entrepreneurship than other types, predictions 2 and 4 were supported as all types with intuition and perceiving preferences selected entrepreneurship relatively more than other types (exceptionally so for INTJ). The results at the type level also give support to a finding at the preference level, namely that entrepreneurship is preferred more by Ts than Fs.

The types that selected entrepreneurship less than other types were INFJs (0%), ESFJs (7%), ESFPs (11%), ENTJs (12%), ISFJs (13%) or ENFJs (13%). All excluding ESFP have a judging preference, and five of the six share a similar decision-making style, i.e., preference for feeling. In addition, three of the six types have a similar data gathering style, i.e., sensing. Logically, the types with a preference for sensing and judging were expected to be more inclined to organizational employment than the types preferring intuition with perceiving. Even though all types preferred organizational employment to entrepreneurship, Table 6 shows that especially INFJs (100%), ESFJs (93%), ESFPs (89%), ISFJs (88%), ENTJs (88%), and ENFJs (87%) preferred organizational employment relatively more so than e.g., INFPs (67%), ENTPs (69%), INTJs (70%), INTPs (74%), or ENFPs (77%). These results support the prediction that judging types are more inclined to organizational employment than perceiving types.

However, the prediction concerning the relation between sensing and organizational employment was not rejected even though ISTJs and ESTJs were not among those selecting organizational employment more than other types. Nevertheless, as all four FJ types were among those more often selecting organizational employment, the results indicated that types with feeling and judging are more inclined toward organizational employment aspirations than are types with sensing and judging. This is consistent with the findings at the preference level. This result supports the finding of Reynierse (1997) that entrepreneurs had more TPs and less FJs. Myers et al. (1998) have called FJs the benevolent administrators. They are observant about people and their needs. They spend energy in making people happy and in bringing harmony into relationships. Obviously, organizational employment is appropriate for many feeling types.

## CONCLUSIONS

Personality influenced the status of employment choice in the sample of business students. Most of the students preferred organizational employment that is in the line with Hammer's (1997) findings. Security, social environment and career opportunities (see Kolvereid, 1996) are possible reasons for preferring organizational employment to entrepreneurship. Extraversion and feeling preferences were overrepresented in the Finnish sample of business students compared with Australian postgraduate MBA students.

Table 6. Employment Status Choice for the Sixteen MBTI Types

		Organizational employment	Entrepreneurship
ISTJ	( <i>n</i> = 50)	84 %	16 %
ISFJ	( <i>n</i> = 8)	88 %	12 %
INFJ	( <i>n</i> = 7)	100 %	0 %
INTP	( <i>n</i> = 20)	70 %	30 %
ISTP	( <i>n</i> = 12)	83 %	17 %
ISFP	( <i>n</i> = 6)	83 %	17 %
INFP	( <i>n</i> = 6)	67 %	33 %
INTP	( <i>n</i> = 19)	74 %	26 %
ESTP	( <i>n</i> = 19)	79 %	21 %
ESFP	( <i>n</i> = 9)	89 %	11 %
ENFP	( <i>n</i> = 39)	77 %	23 %
ENTP	( <i>n</i> = 35)	69 %	31 %
ESTJ	( <i>n</i> = 62)	77 %	23 %
ESFJ	( <i>n</i> = 30)	93 %	7 %
ENFJ	( <i>n</i> = 31)	87 %	13 %
ENTJ	( <i>n</i> = 50)	88 %	12 %
Total	( <i>N</i> = 403)	81% ( <i>n</i> = 327)	19% ( <i>n</i> = 76)

Note: Chi-square (15, *n* = 403) = 15.508, *p* = .4155.

As expected, the results of this study (see also Ginn & Sexton, 1990; Reynierse, 1995; Garden, 1997) stressed the J-P dichotomy of the MBTI as playing the most important role in separating entrepreneurial aspirations from organizational employment aspirations. In this sample, the S-N dichotomy of the MBTI was not statistically significant, though it was expected. Even so, the results were in line with the predictions. Intuitive and perceiving preferences were more associated with entrepreneurial aspirations, whereas sensing and judging were more associated with organizational employment aspirations. In theory, S-N and T-F dichotomies of the MBTI have been emphasized in career choice, whereas the E-I and the J-P dichotomies of the MBTI have had a supportive role in career choice. According to this study, there are career choices in which the role of the J-P dichotomy is unquestionable.

Contrary to expectations, the results related to status of employment choice in the T-F dichotomy of the MBTI were more distinct than in the S-N dichotomy, even though not statistically. The main reason for the finding is less clear even though the result partly supports the findings of Reynierse (1997). Thinking types are more risk-oriented than feeling types (Myers & McCaulley, 1985), which may partly explain the results of the study.

Overall, the results indicated that entrepreneurship is associated more with preferences for intuition, thinking, and perceiving, whereas organizational employment is more associated with preferences for sensing, feeling, and judging. As predicted, the types with intuition and perceiving selected entrepreneurship relatively more than other types did, which is in line with studies by Garden (1997), Ginn and Sexton (1990), and Reynierse (1997). Contrary to predictions, the types with feeling and judging selected organizational employment relatively more often than other types did, which supports the findings of Reynierse (1997).

There are potential entrepreneurs among business students. The barriers (see Vesalainen & Pihkala, 2000) to selecting entrepreneurship as a career should be lowered. It might also be fruitful to inform these potential candidates about barriers to entrepreneurship but emphasize the advantages and possibilities entrepreneurship can provide.

### DISCUSSION

The results concerning the aspirations to the status of employment choice seemed to be in line with reality. Thus, it is possible that aspirations have value in predicting potential behavior in the future. Even though some psychological preferences or types are overrepresented among entrepreneurs or organizational employees, it should be remembered that all psychological types can select an entrepreneurial career. However, for example, SJs as entrepreneurs may be better in local and traditional areas with low risk, whereas NPs as entrepreneurs may be more suitable in global and new business areas with high risk (see Routamaa et al., 1996). Also, different values, motives, and talents behind the idea of starting business may differ by psychological types.

### PRACTICAL IMPLICATIONS AND FUTURE RESEARCH

Among the students, the entrepreneurial types should be encouraged to select an entrepreneurial career. Courses suggesting business ideas could be useful as well as challenging teaching methods for these enterprising entrepreneurial types. A supportive infrastructure needs to be developed to increase academic entrepreneurship. At the university level, an entrance examination could also be more effective in attracting students with NP preferences. The academic entrepreneurship can grow only if there are potential entrepreneurs among the students.

Obviously entrepreneurial types have a lot to offer organizations also. For example, what is important is their orientation toward the future, wide vistas, and creative ideas, as well as openness to new ideas, methods and things. Reynierse and Harker (1995) implied the existence of frustrated Ps in bureaucratic environments. How could organizations encourage these types?

Further research could also focus more precisely on the positions business students aspire to enter, especially in organizations. For example the managerial positions in different areas and at different levels might be investigated. Based on the earlier research (Reynierse, 1993; Roach, 1986), it is expected that sensing types aspire to lower level managerial positions and intuitive types to higher level managerial positions. Similarly, HRM positions may attract different personality types than accounting positions do. Because the present research deals with intentions, research on people who actually implement their preferred career options would be helpful. Only a longitudinal study will determine who actually selects an entrepreneurial or organizational career or both. Even when the career aspiration is entrepreneurial, a lack of business ideas, financial resources, or experience may direct individuals to select organizational employment. Barriers to entrepreneurship should be minimized at societal level. Future research could focus on whether there are some other special groups besides entrepreneurship and organizational employment in which the J-P or E-I dichotomy of the MBTI plays the most important role.

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