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Personality and Strategy

Cognitive Styles and Strategic Decisions of Managers
and Top Management Teams

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Julkaisun nimike Persoonallisuus ja strategia. Johtajien ja johtoryhmien kognitiivinen tyyli ja strategiset päätökset		
Tiivistelmä Tässä väitöstutkimuksessa tutkitaan kognitiivista tyyliä ja strategiaa johtajien ja johtoryhmien strategianäkemysten näkökulmasta. Johtajien käyttäytymisen ja kognitiivisen tyylin luokittelussa käytetään Myers-Briggs tyyppi-indikaattoria. Strategiaa analysoidaan hyödyntäen Milesin ja Snown organisaatiotypologiaa. Tutkimuksen tavoitteena on selvittää vaikuttaako johtajan ja johtoryhmän kognitiivinen tyyli heidän strategianäkemyksiinsä. Ensimmäisessä artikkelissa tarkastellaan johtajan ja strategian välistä suhdetta käsitteleviä tutkimuksia ja kuvataan malli kognitiivisen tyylin ja strategian välisestä suhteesta. Toisessa artikkelissa arvioidaan ehdotettua mallia kuvaamalla alustavia tutkimustuloksia. Kolmannessa artikkelissa analysoidaan kolmentoista kylpylätoimialan yrityksen johtoryhmän jäseniltä kerättyä empiiristä aineistoa sekä esitellään tutkimuksen tuloksia. Neljännessä artikkelissa arvioidaan johtajan ja strategian välistä suhdetta tarkastelemalla johtoryhmien näkemyksiä elinkelpoisesta strategiasta. Tulokset osoittavat, että johtajan kognitiivinen tyyli ja erityisesti tapa havainnoida ympäristöä (tosiasiallinen tai intuitiivinen) vaikuttaa hänen strategianäkemyksensä. Tosiasialliset tyypit pitävät parempana analysoijan tai puolustajan strategiaa ja intuitiiviset tyypit analysoijan tai kullankaivajan strategiaa. Tutkimuksen mukaan tosiasialliset ja ajattelevat johtoryhmät puolestaan ovat taipuvaisia valitsemaan analysoijan tai puolustajan strategian. Intuitiiviset ja ajattelevat johtoryhmät suosivat joko analysoijan tai kullankaivajan strategiaa. Kokonaisuutena tulokset tukevat johtajien ja johtoryhmien itsetuntemuksen merkitystä. Johtamis- ja strategiakoulutuksissa sekä käytännön strategisessa päätöksenteossa tulisi ottaa huomioon johtajien ja johtoryhmien itsetuntemuksen tärkeys.		
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Abstract <p>In this dissertation, cognitive style and strategy is studied with regard to managers and views of viable strategies. Myers-Briggs Type Indicator (MBTI) is used to classify managers' behaviour and particularly cognitive style. Strategy is analyzed using Miles and Snow's organizational typology. The main research question is: does the cognitive style influence the strategy type managers and top management teams prefer?</p> <p>In the first article, previous studies dealing with manager-strategy –relationship are reviewed and the proposed model of the relationship between the cognitive style and the strategy type is presented. The second article concentrates on evaluating the proposed model by describing some preliminary results. In the third article, a more detailed analysis is done using empirical data which was collected from members of the top management teams in thirteen different spas. Finally in the fourth article, manager-strategy –relationship is studied by analyzing top management teams and their views of the viable strategies.</p> <p>The results indicate that cognitive style and particularly, manager's way of perception (sensing or intuition) has an effect on his or her view of the viable strategy. Sensing types prefer analyzer or defender strategy and intuitive types prefer analyzer or prospector strategies. Based on ten cases, sensing-thinking top management teams prefer analyzer or defender strategy and intuitive-thinking teams either analyzer or prospector strategy.</p> <p>On the whole, the results support the importance of the self-understanding of the managers and top management teams. This should be taken into consideration in leadership and strategy trainings as well as in actual strategic decision-making situations.</p>		
Keywords Strategy, Decision-making, Managers, Personality		

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1 INTRODUCTION

“To become inspired management innovators, today’s executives must learn how to think explicitly about the management orthodoxies that bound their thinking – the habits, dogmas, and conceits they’ve never taken the trouble to challenge.”

Gary Hamel (Barsh 2008)

In order to succeed in today’s intensive competition, companies need to know their competencies, develop them and create new business opportunities continuously. Strategic decision-making has been one area of interest in understanding differences companies have in their strategic capability. Strategic decisions can be seen as reflections of a company’s top managers. Members of the top management team can either prohibit or hinder the success of the company. Because of this essential role, the self-understanding of the managers is important and will be even more crucial factor in future.

According to Hambrick and Mason (1984), organizational outcomes are partially predicted by psychological and observable background characteristics of managers. Different observable characteristics such as age, tenure or socioeconomic roots have been proposed to effect strategic choices and organizational performance (e.g. Rajagopalan & Datta 1996; Thomas & Litschert & Ramaswamy 1991). However, there are not many studies linking psychological characteristics of managers with strategies.

Jungian psychological types have been used in classifying managers’ behaviour in some of the previous studies (e.g. Haley & Pini 1994; Haley & Stumpf 1989). Myers Briggs Type Indicator (MBTI) has been often used to measure the psychological types. Typically only a part of the psychological type, cognitive style, has been used in studies concerning decision-making (e.g. Henderson & Nutt 1980; Hough & Ogilvie 2005; Stumpf & Dunbar 1991).

In the creative management model Hurst, Rush and White (1989) combine the business strategies with the four modes of the cognition. According to them, the composition of the top management team (TMT) is the key to understanding the concept of strategy. They propose links between Jungian cognitive modes and the strategic types of Miles and Snow (1978) typology. Despite long practical and theoretical experience of the authors, the idea of the creative management model still requires theoretical explanations as well as empirical evaluation.

This study attempts to provide new perspectives and empirical evidence of the relationship between managers and strategies. A theoretical model about the relationship between the cognitive style and the strategy type is developed and evaluated. Finally, the relationship between the composition of the top management team and the strategy types is studied using ten cases.

Because of the contradictory evidence of the importance of the demographic characteristics on strategies, this study emphasizes personality of the managers. As a universal and widely used in management studies (e.g. Gardner & Martinko 1996), Jungian cognitive styles are chosen to classify managers' personality. The strategy is analyzed by utilizing Miles and Snow (1978) organization typology which consists of three generic strategies, which are defender, analyser and prospector strategies and of a "residual" reactor strategy.

This study aims at providing new information of the manager-strategy – relationship. The results may help to understand differences in perspectives of the viable future strategy. This is important as in analyzing strategies and in the development of the top management teams. Also furthermore, this study emphasizes the importance of forming a shared view of the chosen strategy in the organizations.

1.1 Research question and objectives of the study

On the whole, this study seeks to contribute to the research on strategic decision-making by extending knowledge about manager-strategy –relationship in individual and top management team level. This study focuses on the relationship between the cognitive style and strategy types. The main research question of the study is: *Does the cognitive style influence strategy type managers and top management teams prefer?*

As mentioned earlier, this study aims at increasing understanding about the effect of the psychological characteristics on strategies. Since this study consists of four independent articles, each of them gives their own part in answering the research question and reaching the objectives.

The first objective is to form a theoretical model of the relationship between cognitive style and strategy. This is done by combining previous studies about strategic decision-making, cognitive styles and Miles and Snow (1978) typology. The model is described in the first article and it forms a conceptual construction of the whole study.

In the second article, the objective is to present some preliminary results of the manager-strategy –relationship using data which is collected from 70 members of the top management teams. In this connection, MBTI type table and some descriptions of strategy types are portrayed.

In the third article, the model is evaluated. Using empirical data, which is collected from members of thirteen top management teams, the relationship between the cognitive style and strategy type is studied. Also moreover, descriptions of the three viable strategy types in the spa industry are presented. The third objective can be formulated as evaluating the model and describing the strategy types of the Miles and Snow (1978) typology in the spa industry.

In addition, the fourth objective is to study the phenomenon on the top management team level and discover that how the composition of the TMTs influences strategies they prefer. The fourth article concentrates on the top management teams and their views of viable strategies. The qualitative research approach is used to analyze ten cases.

1.2 Background theories of the study

In this chapter, the key concepts of this study are briefly presented and the study is positioned among the studies in strategic management. First, different schools of strategy and the upper echelons perspective are described. Then Miles and Snow (1978) typology and studies using it are reviewed. Third, Myers Briggs Type Indicator and particularly four different cognitive styles are described. Finally, the earlier studies concerning managers and strategies are reviewed.

1.2.1 *Strategic management and the upper echelons perspective*

Traditionally, strategy has been explained by looking at how strategies should be formulated. The design school focuses on strategy formation as a process of informal design. The planning school sees strategy making as a more detached and systematic process of formal planning. Strategy formation is seen as an analytic process by the positioning school and the emphasis is on actual content of strategies. (Mintzberg, Ahlstrand & Lampel 1998: 5.)

In addition to these prescriptive schools, strategy formation has been studied by looking at specific aspects of the process and describing how strategies actually get made. The entrepreneurial school looks strategy formation as a visionary process, the learning school as an emergent process and the power school as a

process of negotiation. The fourth way to look at the strategy is to look at the strategist's mind. This school, called cognitive school, uses cognitive psychology in order to understand strategic thinking. (Mintzberg et al. 1998: 6, 149-173.)

The cognitive school is more a loose collection of research than a tight school (Mintzberg et al. 1998: 150-151). It consists of two rather different wings. Processing and structuring of knowledge is seen as an effort to produce a sort of objective motion picture of the world by the more positivistic wing. The other more subjective wing sees strategy as a kind of interpretation of the world. Mintzberg et al. (1998: 151-155) present the cognitive styles as a representative of the more objective wing under the heading cognition as construction.

On the other hand, the cultural school sees strategy formation as a collective and cooperative process and the environmental school as a reactive process where the initiative lies in organization's external context. Finally, the configurational school combines the ideas of other schools and strategy formulation is seen as a process of transformation. One of the popular studies of configuration is that of Miles and Snow (1978). (Mintzberg et al. 1998: 6, 319.)

Mintzberg et al. (1998) do not refer to the studies of Hambrick and his colleagues in their first edition of the book *Strategy Safari*. However, Lampel (2009) agrees with this study that upper echelons perspective is an important addition to strategy. In the second edition of *Strategy Safari*, Hambrick and Fredrickson (2005) is referred to in connection with design school (Mintzberg, Ahlstrand & Lampel 2009: 27, 47) and upper echelons perspective under the power school (Mintzberg et al. 2009: 257-258).

However, even the idea of the upper echelons perspective is applied; this study emphasized more the personality of the decision makers than the power of them. Because of this, this study follows more the ideas of the cognitive school together with the configurational school.

Twenty five years ago Hambrick and Mason (1984) proposed a new emphasis in macro organizational research by suggesting that organizational outcomes are partially predicted by managerial background characteristics. Actually already March and Simon (1958) argued that decision maker brings his or her own set of "givens" to the decision making situation. March and Simon (1958: 6) also proposed that organization's members are decision-makers and problem-solvers and that perception and thought processes are central to the explanation of behavior in organizations.

According to the upper echelons perspective, the situation that the organization faces affects the characteristics of the top managers. The core of their theory is however the effect of upper echelon characteristics on strategic choices and through them on organizational performance. Observable characteristics such as age, functional background, and educational experiences are proposed to be proxies that provide reliable indicators of the unobservable psychological constructs. (Hambrick & Mason 1984.)

Carpenter, Geletkanycz and Sanders (2004) reviewed numerous studies citing the upper echelons perspective. They also present the “second-generation” upper echelons perspective which extends the original model by using the results of the recent research in the area. For example, they include the identification of major organizational and environmental antecedents of top management team composition and suggest the most significant intervening variables to the upper echelons framework.

Hambrick and Mason (1984) as well as Carpenter et al. (2004) mention that in addition to observable characteristics also personality variables should be included in the studies. This study attempts to extend the upper echelons perspective by looking at the cognitive style of the individual managers and the cognitive composition of the TMT and their influence on firm’s strategy.

1.2.2 Miles and Snow typology

Miles and Snow (1978) proposed a theoretical framework which consists of a general model of the process of adaptation and organizational typology. They had three cornerstones in their studies. First, they view organizations as organic and according to them organizations act to create their environment. Second, management’s strategic choices are seen to shape the organization’s structure and process. Third, they have taken strategy-structure interactions into accounts and share the view of many other scholars according to which structure and process constrain strategy.

Based on their studies on four different industries, Miles and Snow (1978) suggested that it is possible to predict with some reliability the structural and process characteristics which are connected with a chosen strategy. Also, if you know an organization’s management’s choice of strategy you can partly be able to predict its future development.

On the whole, Miles and Snow (1978) organization typology provides a strategy typology that is based on the assumption that strategy is based on three choices:

entrepreneurial, technological and administrative problems. On this basis, Miles and Snow identified three viable strategies: defender, prospector and analyzer (table 1). The fourth one, reactor, is not a consistent strategy.

The defenders are concerned with stability and they are organizations which have a stable set of products or services and compete primarily on the basis of price, quality, service and delivery. In contrast, the prospectors actively search out innovative new product and market opportunities and they typically have a very broad product-market definition. The analyzers have characteristics from both of the prior strategies and they seek to minimize the risk and in the same time maximize the opportunity for profit. Reactors react to their environment and reactor is an inconsistent and unstable strategy which may arise because one of the main strategies is inappropriately pursued. (Miles & Snow 1978.)

Table 1. Strategy types in Miles and Snow typology (1978)

	Strategy type			
Dimension	Defender	Prospector	Analyzer	Reactor
Product – market domain	Narrow and stable	Broad and continuously expanding	Segmented and carefully adjusted	Possibilities
Technological goal	Cost-efficiency	Flexibility and innovativeness	Technological synergy	Developing projects and finishing them
Structure	Functional and line authority	Product and/or market oriented	Matrix oriented	Tight formal authority

On the whole, researchers have debated the merits of different research methods and the use of different strategy typologies (Parnell 1997). For example Zajac and Shortell (1989) found that generic strategies in Miles and Snow typology may not be equally viable as could be expected. On the other hand, Hambrick (1982) found that contrary to Miles and Snow typology executives seldom discussed strategy in terms of product/market change.

Miles and Snow (1978) typology originally was limited in the nature of industries studied – college textbook publishing, electronics and food processing and hospitals. According to Hambrick (1983), typology's generic nature ignores industry and environmental specific characteristics. However, Miles and Snow typology has been a subject of considerable attention and as Desarbo, Benedetto, Song & Sinha (2005) write based on Hambrick's (2003) academic commentary: "*Authors attribute the typology's longevity and excellence to its innate parsimony, industry-independent nature, and to its correspondence with the actual strategic postures of firms across multiple industries and countries.*"

Miles and Snow's organization typology has been cited in numerous scholarly works since its publication (Ketchen 2003). Typology concentrates on strategies within one industry and is used for example to study the relationship between strategic types and organizational performance (Conant, Mokwa & Varadarajan 1990; Dvir, Seger & Shenhar 1993). What comes to the interrelationships with the several theoretically relevant variables, Miles and Snow typology been re-examined using data from 709 firms in China, Japan and United States (Desarbo et al. 2005). Typology has been found suitable also for studying SMEs (e.g. O'Regan & Ghobadian 2005).

Similarly in this study, strategy is seen as a reflection of the top managers. Strategy is defined as a set of choices a manager or a TMT does in order to reach the common goals. In addition to "objective" analyses, strategic choices are affected by managers' natural preferences to emphasize some part of the knowledge and to use intuition in decision-making.

1.2.3 *The cognitive style as a measure of personality*

Atkinson, Atkinson, Smith, Bem and Nolen-Hoeksama (1996: 421) define personality as the distinctive patterns of thought, emotion, and behaviour which define an individual's style of interacting with the social and physical environment. The psychoanalytic approach, the behaviouristic approach and phenomenological approach can be considered as theories which have dominated the history of personality psychology in the twentieth century. However, today differences in approaches are no longer as sharp as they were before and approaches have become more "cognitive" lately.

Robbins (2005) defines individual's personality as the combination of psychological traits, which we use to classify that person. However, Atkinson et al. (1996) do not see trait approaches as a personality theory because they do not tell us anything about the dynamic processes of personality functioning. According to

McAdams (2001: 249-301), psychologists have traditionally disagreed about the trait and particularly their technical nature. Some argue that traits are neuropsychic structures and they have a causal influence on the person's behaviour. Others think that traits are more like cognitive categories which observers use to make sense of social life.

McAdams (2001) presents Jung's theory under the heading "*Freud and the psychoanalytic traditions*" and describes it as a rival psychoanalytic approach. However, he does not present any extensions of the Jung's typology but concentrates more on one of the famous trait theories, Big Five. Big five consists of five dimensions: extraversion-introversion (E), neuroticism (N), conscientiousness (C), and agreeableness (A). First of the dimensions, extraversion-introversion, was originally introduced by Carl Jung and Hans Eysenck.

Jung (1921/1971) described extraversion and introversion, two different attitudes, in his book *Psychological Types*. Later he subdivided these two into eight types by identifying two pairs of opposite mental functions. Two opposite perceiving functions were called sensation and intuition and functions of judging thinking and feeling. (Myers, McCaulley, Quenk & Hammer 1998.)

Jung's theory has been further developed by Isabel Briggs Myers and her mother Katharine Briggs (Myers et al. 1998) by adding the J-P (Judging and Perceiving) dimension which was implicit but undeveloped in Jung's work. Myers Briggs Type Indicator (MBTI) has been developed to measure Jungian psychological types. It consists of four preference pairs: Extraversion-Introversion (E-I), Sensing-Intuition (S-N), Thinking-Feeling (T-F) and Judging-Perceiving (J-P).

According to the theory around the MBTI, the first and fourth dichotomies (E-I and J-P) are called attitudes or orientations. Extraverted people direct their energy and attention primarily to the external world and introverted people to their inner world of ideas, values and experience. Judging-Perceiving dichotomy refers to how people like to organize their external environment. Judging attitude refers to preference for decisiveness and closure. On the other hand, perceiving people like flexibility and spontaneity. (Kirby 1997; Myers et al. 1998: 5-27.)

Second and third dichotomies (T-F and S-N) are called functions or processes. Thinking and Feeling are two different ways in which people organize and structure information and make decisions. Thinking people typically decide impersonally on the basis of logical consequences. Those who prefer feeling to thinking like to make decisions to their values based. Each individual also has a natural preference for gathering information either using sensing or intuition. Sensing people focus on what is current in the present and on data available through

senses. Those who prefer intuition to sensing focus mainly on perceiving patterns and interrelationships. (Kirby 1997; Myers et al. 1998: 5-27.)

The purpose of the MBTI is to make the theory of Jungian psychological types more easily understandable and useful in people's lives. The core of theory is that *"much seemingly random variation in behaviour is actually quite orderly and consistent, being due to basic differences in the way individuals prefer to use their perception and judgment"* (Myers et al. 1998: 3). According to the MBTI theory, people naturally prefer one function from another (for example extraversion to introversion). There are 16 possible types (such as INFJ or ESTP) and they all have different interactions among the four preferences.

Many studies of the relationship between personality and strategic decision processes and performance have used MBTI as the measure of the cognitive style (Hough & Ogilvie 2005). Cognitive style or decision-making style is based on one's way of perception (Sensing or Intuition) and one's way of making decisions (Thinking or Feeling). There are four cognitive styles: ST, SF, NF and NT (table 2).

Table 2. The Combinations of perception and judgment (Myers et al. 1998: 41)

People who prefer	Sensing & Thinking (ST)	Sensing & Feeling (SF)	Intuition & Feeling (NF)	Intuition & Thinking (NT)
Focus attention on	Facts	Facts	Possibilities	Possibilities
And handle these with	Nonpersonal analysis	Personal warmth	Personal warmth	Nonpersonal analysis
They tend to become	Practical and matter-of-fact	Sympathetic and friendly	Enthusiastic and insightful	Logical and ingenious
And find scope for their abilities in	Technical areas with facts and objects	Practical help and services for people	Understanding and communication with people	Theoretical and technical developments

There are several reasons why the MBTI and the cognitive styles are widely used in studies of strategic decision-making (Hough & Ogilvie 2005). First, it is widely

known and used in organizations (e.g. Robbins 2006; Trompenaars & Woolliams 2002). It can be easily transferred from research to practice. Second, the functions of MBTI are related to the information gathering and information evaluation which are essential parts in decision-making. Third, there is a lot of research supporting its conceptual, construct and predictive validity (e.g. Rosenak & Shontz 1988; Myers et al. 1998).

For example Koskinen (2005) has studied differences between managers and leaders using MBTI. According to his study, managers, who prefer thinking for judging, are issue-oriented and better organizers than feeling managers. Sensing types are more aware of facts and manage better with things than intuitive types. On the whole, that study supported that using cognitive styles can help to better understand differences between managers and leaders.

Support has been found for the existence of the relationship between personality and transformational leadership (Hautala 2006). According to Hautala (2006), extraverted, intuitive and perceiving types favor transformational leadership based on leaders' self-ratings. The expectations regarding leaders' behavior differ according to type (Hautala 2007). These studies also support the use of personality in management and leadership studies.

1.2.4 Earlier studies concerning manager-strategy -relationship

In addition to the previously presented upper echelons perspective (Hambrick & Mason 1984), there are several other studies in which the relationship between managers and strategies has been studied. Over 30 years ago, Mitroff and Killmann (1975) proposed that personality type is predictive of organizational preferences for problem-solving and decision-making. Their study was conducted by analyzing stories managers tell. According to their study, ST type's ideal organization is bureaucratic with centralized and well-defined authority. On the other hand, flexible and adaptive organization is preferred by NF types. NT type's ideal organization is matrix-structured and SF type's familiar and personally idealistic.

Classifications of the strategies and of the management archetypes were presented by Wissema, Van der Pol and Messer (1980). Wissema et al. (1980) identified six strategy types based on life-cycle theory: explosive growth, expansion, continuous growth, consolidation, slip strategy and contraction and combined certain managerial characteristics with them. For example creativity and intuitive-irrational thinking were combined with explosive growth strategy.

Top executive's locus of control and its relationship to strategy making, structure and environment was studied by Miller, Kets De Vries and Toulouse (1982). They found support for the proposition that executive's personality influences his strategies and that influences structure and environment.

Herbert and Derensky (1987) developed a list of important managerial requirements for three generic strategies. Hough and Ogilvie (2005) examined how cognitive style affects decision outcomes. They found that cognitive style influences actual decision outcomes and also how others perceive one's decision performance. Similarly, Cools and Ven Den Broeck (2008) found qualitative evidence for cognitive styles' influence on managerial behavior. On the other hand, Jennings and Disney (2006) found some inconsistent evidence for the importance of psychological type in their study of the strategic planning process.

Kauer, zu Waldeck and Schäffer (2007) studied the effects of the top management team's characteristics on strategic decision-making. The results of their study support the use of more deep-level measures than age or tenure in studying TMT's characteristics and also the importance of the mediating process. According to them, personality factors, such as flexibility, have clearer impact on decision speed than the diversity of the experience.

One of the most important prior studies, which encouraged starting this particular study, is the creative management model described by Hurst, Rush & White (1989). Hurst et al. (1989) combined Miles and Snow (1978) typology with the four modes of the cognition in their creative management model. According to them, a prospecting organization has TMT which consists mostly of intuitives with some feelers. TMT of the preserver (analyzer in Miles and Snow typology) organization has got mostly feelers and some intuitives. Analyzing organization is proposed to have a top management team in which there are mostly thinkers with some sensors. Finally, mostly sensors are proposed to be found from the TMT of the reflexing organization (reactor in Miles and Snow typology).

On the whole, the model still lacks some theoretical and empirical explanations. First, in the creative management model the focus is on the dominant function of manager's personality. However, researchers do not totally agree on that part of the theory. Secondly, approach lacks empirical evidence. As Hurst et al. (1989) conclude, more studies are needed. The theoretical model of the cognitive style and strategic decisions of managers presented in this study attempts to define the relationship between personality and strategy more thoroughly. The relationship is also empirically studied in individual and team level.

1.3 Research methodology

In this chapter, the research strategy is presented. Also data gathering is described and analysis and instruments, which were used in this study, are explained.

1.3.1 Research strategy

In this study, a combination of quantitative and qualitative methodologies is used. One variation of the mixing of methods is to use quantitative and qualitative elements sequentially (Rudestam & Newton 2007: 51-54). In the third article, managers' views of the viable strategies are analyzed using categories of Miles and Snow typology. In this way, extended descriptions of strategy types in the spa industry can be achieved. In addition, propositions are evaluated using coded chi-square test. Statistical methods can be considered as useful when we are looking at relationships (Rudestam & Newton 2007: 26-32). In the fourth article, there are elements from positivism and case study.

1.3.2 Sample

The spa industry is part of the hotel and restaurant business. Further, hotels can be classified based on their target group. One of these target groups is spas which can be further divided into spas & entertainment spas and rehabilitation & health spas (Ammattinetti 2009, referred 7.10.2009). Originally in this study, the spa industry was chosen because even it can be considered as fairly stable industry, it has been in some kind of transformation phase in Finland. The amount of the old war veterans has been decreasing and because of that particularly the smaller spas have been trying to find new customer groups. On the whole, spas in the Finland have been quite alike compared to each other and the differentiation has proceed relatively slowly.

Spas in Finland are typically small companies in terms of the amount of personnel. However, even many of them can be classified as SMEs (under 250 employees and annual revenue is under 50 million Euros), they still are enough big to have a functioning top management team. Managers' knowledge of the strategy issues is not considered as a crucial factor because managers are asked about their views of the viable future strategies. Last, availability is one of the important elements for choosing the spa industry.

The data was collected during the year 1996. Altogether 39 companies in the spa industry were contacted by e-mail and then by phone. Thirteen companies wanted

to participate in this study. Those thirteen spas represented all different size categories of spas: big, medium and small. Size classification was made using already existing categorization that is based on the water area of the pools and the number of saunas, rooms and customer seats in the restaurant (e.g. the spa industry study 1993). The sample can be considered as geographically representative because spas were situated in the different parts of the Finland.

Usable data (MBTI and strategy description) was received from 70 members of the top management teams. The age of the respondents varied from 30 to 64 and the biggest age group was 41-50 years (43 % of all respondents). They represented very different areas of expertise such as marketing, finance, restaurant business or medicine. Most of them (51 %) had college degrees and 14 % had university degrees. Commercial education was the most typical field of the education (44 %). Restaurant business (21 %) was the second most typical field of education and the health care (20 %) was the third one.

The data was collected primarily in qualitative form for several reasons. One reason is that respondents have varying knowledge and understanding of the word strategy (see also Hambrick 1982: 169). Also, the use of questionnaires in strategy research has been questioned (e.g. Ireland, Hitt, Bettis & De Porras 1987). Despite attempts to build a questionnaire to measure Miles and Snow strategy types (e.g. Conanat et al. 1990), qualitative data collection was chosen in this study because it gives richer information of the strategy and makes possible to form descriptions of the different strategy types in the spa industry.

1.3.3 Procedure

In every spa, a meeting for the top management team was arranged during the spring and autumn of 1996. First, the members of the TMTs were asked to fill in the MBTI form. After that, they were given a short description of the exercise and a blank piece of paper. They were asked to describe what kind of strategy a company should pursue in the spa industry in order to succeed in the future. Particularly, they were asked to consider what kind of services should be available, to whom they would be offered, and what opportunities and threats there might be.

Next, managers were asked to answer the same question as a top management team. They had max. 45 minutes to discuss and form their common view of the viable future strategy. All these discussions were taped and ten of them were finally used in the analysis. Three spas were excluded from this last part because of the taping problems in two of them and because CEO was missing in one of

them. Finally, they were asked to choose the paragraph description which best corresponds their view of the viable strategy.

During the whole data collection process, it was emphasized that the researcher is interested in their views and that there are not wrong or right answers. They were also encouraged to describe a viable future strategy for a company in the spa industry on the whole because it is easier for managers to talk or write a story about their ideal organization (see Mitroff & Kilmann 1975: 20). It is also clearer to concentrate on the views of the viable strategy because the power perspective is not analysed.

1.3.4 Analysis

In this study, personality and especially cognitive style is measured by using Myers Briggs Type Indicator (MBTI), translated into Finnish and validated by professor Routamaa's research team in the University of Vaasa. In this study, form F, which is 166-item forced choice questionnaire, was used. Respondents choose between two or sometimes three alternatives per item. Questionnaire measures four dichotomies: Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling and Judging-Perceiving. In this study, dichotomies Sensing-Intuition and Thinking-Feeling are used and based on them four cognitive styles Sensing-Thinking, Sensing-Feeling, Intuition-Thinking and Intuition-Feeling are identified.

Descriptions of the views of the viable future strategies were read through two times. First, an overall picture of the contents was formed. Then important statements and themes were identified (see Easterby-Smith, Thorpe & Lowe 1991: 104-108). Miles and Snow typology (1978) was used as a framework in data analysis. Miles and Snow's typology suits well in analysing spas because it focuses on the industries with more competitors compared to some other typologies (Segev 1989). Descriptions of the different strategy types were formed and each answer was classified as a defender, prospector or analyser. None of the answers were classified as a reactor.

Because of the nature of the data and small sample size, it was not possible to use many statistical tests. According to Easterby-Smith et al. (1991: 129), the chi-square test is one useful way of examining differences or associations between groups. However, because the expected frequency is less than 5 in more than 20 % of the cells, the relationship between the cognitive style and strategy type cannot be studied using chi-square test. The chi-square test is however used in studying the relationship between the way of perception and strategy type.

1.3.5 Reliability and validity

The MBTI

Construct internal and external validity and reliability can be considered as criteria for judging the quality of the research design (Yin 1991: 40-45). Particularly in personality research, construct validity, which refers to the way that a measure relates to other variables (Stewart, Hetherington & Smith 1984), is important. For example, Rosenak and Shontz (1988) have found support for MBTI's construct validity. As theory predicts, MBTI scores generally correlate with other measures and do not correlate with measures theory does not predict (Myers and McCaulley 1985; see also Järnlström 2002).

On the other hand, reliability refers to how consistently an instrument measures what it is supposed to measure (Zeisset 1996). With the MBTI split-half reliability and test-retest reliability can be performed. According to Järnlström (2000), the results of the MBTI form F version indicate relatively good internal consistency. Test-retest reliability was not measured in this study.

Wurster (1993) concludes that MBTI should be used carefully and only with volunteer subjects who can verify their type. Coffield, Mosely, Hall and Ecclestone (2004) refer to several prior studies and conclude that research evidence to support MBTI is inconclusive. According to them, the stability of the types is less impressive and construct validity is controversial.

However, there has been a considerable academic debate around the MBTI and estimated 2000 articles have been written about it between years 1985 and 1995 (Coffield et al. 2004). As strengths of the MBTI Coffield et al. (2004: 51) mention that reliability co-efficients are high for individual pairs of scores relating to each of the scales. Also the face validity of the MBTI is generally accepted."

Strategy types

According to Inch, Moore and Murphy (1997), consistency of accurate classification should be verified by assessing reproducibility reliability and stability reliability (test-retest by the same coder). In this study, the qualitative data was first analysed in the summer of 1997 and later in the autumn of 1998. Between two analyses, part of the data (16 answers) was also analysed by professor Routamaa. Based on his analysis and comments, classifications were discussed and modified.

Based on previous peer review, nine challenging cases were selected from the data. Another colleague analysed them using information of Miles and Snow typology described in the third article. The sample covered all the four cognitive

styles and the three strategy types. The results of the analysis were compared to that made by the researcher. Three cases conformed to researcher's analysis. In other cases, there were differences in classification between analyser and prospector (four cases) or between analyser and defender (two cases). Based on this classifications were discussed and better-explained and final reproducibility was eight of nine cases.

1.4 Main results and conclusions

In this chapter, the main results of the whole study are presented. Academic as well as practical contribution of the articles is considered. In addition to that, some ideas for further studies are discussed.

Table 3. The main ideas and results of the four articles

	Main theme	Type of article	Independent variable	Main result
Article 1	Cognitive style and strategic decisions	Theoretical review	Manager's cognitive style	Theoretical model
Article 2	Cognitive style and strategic thinking	Descriptive empirical study	Manager's cognitive style	Preliminary results of the manager-strategy - relationship
Article 3	Managers and strategies	Empirical study	Manager's cognitive style	The way of perception has effect on strategies managers prefer
Article 4	Top management teams and strategic decisions	Empirical study	Cognitive composition of the top management team	Cognitive composition has effect on strategies top management teams prefer

The main focus of this study was on managers and strategies. Specially, the effect of managers' way of perception and top management team's cognitive composition on their views of viable strategies was studied. The main focus of each article is briefly presented in table 3.

First, based on the previous studies, connections between personality and strategy were identified. Many similarities between the ideal organizations of managers with different cognitive styles and Miles and Snow's typology were found. Logically reasoned propositions of the manager- strategy –relationship were made. Finally, proposed model of the relationship between cognitive style and strategy type was presented.

Preliminary results indicated that there are some differences in the way manager's with different cognitive styles describe their views of the viable strategies (the second article). For example, ST (sensing-thinking) managers mentioned quite a few potential customer groups and preferred to compete with quality (like in defender strategy). Many NFs wanted to be different from their competitors and provide memorable experiences and many-sided services. These answers were similar with the descriptions of prospector strategy. NT managers mentioned for example marketing and need to differ from competitors (like in analyzer or prospector strategies). Concentration and specialization were mentioned by SF types. Sensing-feeling (SF) types had features from as well from defender as analyzer strategies.

Next, proposed relationships were evaluated using data from seventy managers. Based on the study, it can be seen that manager's cognitive style and particularly the way of perception affects his or her view of the viable strategy. ST (sensing-thinking) managers typically described defender as the most viable strategy type. Contrary to the proposition, NF (intuitive-feeling) types chose analyzer strategy more often than prospector strategy. NT (intuitive-thinking) managers described analyzer strategy most often. Proposed relationship between SF (sensing-feeling) type and reactor strategy was not studied because reactor strategy was not able to be identified from the data.

In summary, results indicated that intuitive (N) managers prefer analyzer or prospector strategy to defender strategy. Sensing (S) managers prefer defender or analyzer strategy to prospector strategy. These results were also confirmed by chi-square test. In this connection, also examples of how managers with different cognitive styles describe different strategy types were presented.

When manager-strategy –relationship was studied on the top management team level, results indicated that the composition of TMT affects strategies it prefers.

Defender strategy was preferred by two out of seven sensing-thinking teams. Five ST teams and two NT teams preferred analyzer strategy. Only one team, the most heterogeneous one with majority of NT style managers, chose prospector strategy. On the whole, the results support the importance of the TMT in strategic decision-making.

These findings indicate that cognitive style has an important role in understanding the strategies managers and top management teams prefer. The ideas of the upper echelons perspective were supported (Hambrick & Mason 1984) what comes to the effect of the psychological characteristics on strategies. Carpenter et al. (2004) and Hambrick (2007) have mentioned that this has been a relatively unexplored perspective and could be a necessary extension to the study of TMTs and strategies.

In the practical level, this study emphasizes the importance of the self-understanding. Managers should know themselves and their basic patterns of behavior. In addition to self-understanding, managers should understand each other and be able to use differences constructively. In the TMT level, the cognitive style offers a lot of possibilities to develop teamwork and make more broadly considered decisions which take into consideration logical perspectives as well as human considerations.

The results of this study can be applied in management education and consultancy. In addition to the tools such as Belbin's team roles (e.g. Higgs 2006/2007), there is need to use also psychological type to help leaders to meet the needs of the future. For example Blass and Hackston (2008) found that there is discrepancy between the importance of the ability to empower and the most common type among European senior managers' (ESTJs') behavior under stress.

In the strategic decision-making, the cognitive composition of the TMTs should be taken into consideration. In a recent study, Lewis and Smith (2008) found that dominance of problem-solving styles was related to negative team outcomes. Kellermanns, Walter, Floyd, Lechner and Shaw (2010) found empirical support for the positive effect of strategic consensus on organizational performance. Cognitive composition of the TMTs could be an interesting perspective to the studies of the strategic consensus too.

Overall, homogeneous TMTs could use consultants who have different cognitive styles than the majority of the team members. This could help to avoid bias in decision-making and to better use of both qualitative and quantitative information. However, as O'Keefe and Wright (2010) mentioned in their article about an unsuccessful scenario planning intervention: "*Critical voices can go unheard.*"

So we should remember that respect for other team members and ability to figure on others opinions is also needed.

This study supports Miles and Snow typology and its use in strategy research. Descriptions of the three viable strategy types in the spa industry were formed in this study. The same research setting could be applied in other industries too in order to extend knowledge about strategy types in different settings. Applying qualitative methods makes it possible to get richer information about the strategies managers and top management teams prefer.

In the introduction to the second edition of their book *Organizational strategy, structure and process*, Miles and Snow (2003) suggested that a rich mix of strategy types may be associated with the overall health of an industry. All three different viable strategy types were identified in this study. In the spa industry, only a few described the prospector strategy as the most viable one. If this study had been done in some of the new industries, there probably would have been more prospectors and more intuitive managers.

In the further studies, new industries and data from different cultures could be used in order to extend our understanding of the effect of the managers and the TMT's composition on the firm's strategy. Also some kinds of strategy simulations could provide us interesting information about manager's actual strategic decision-making behavior.

REFERENCES

- Ammattinetti (2009). *Majoituspalvelut*. [online]. Helsinki: työ- ja elinkeinotoimisto. Available from World Wide Web: <<http://www.ammattinetti.fi/web/guest/alat>>.
- Atkinson, R., Atkinson, R., Smith, E., Bem, D. & Nolen-Hoeksema, S. (1996). *Hilgard's Introduction to Psychology*. 12th ed. FL: Harcourt Brace College Publishers.
- Barsh, J. (2008). Innovative management: A conversation with Gary Hamel and Lowell Bryan. *McKinsey Quarterly* 1, 24-35.
- Blass, E. & Hackston, J. (2008). Future skills and current realities. How the psychological (Jungian) type of European business leaders relates to the needs of the future. *Futures* 40:9, 822-834.
- Carpenter, M.A., Geletkanycz, M.A. & Sanders, W.G. (2004). Upper echelons research revisited: antecedents, elements, and consequences of top management team composition. *Journal of Management* 30:6, 749-778.
- Coffield, F., Moseley, D., Hall, E. & Ecclestone, K. (2004). *Learning Styles and Pedagogy in Post-16 Learning. A Systematic and Critical Review*. UK: Learning and Skills Research Centre.
- Conant, J.S., Mokwa, M.P. & Varadarajan, P.R. (1990). Strategic types, distinctive marketing competencies and organizational performance: A Multiple measures-based study. *Strategic Management Journal* 11, 365-383.
- Cools, E. & Van Den Broeck, H. (2008). Cognitive styles and managerial behaviour: a qualitative study. *Education + Training* 50:2, 103-114.
- Desarbo, W.S., Benedetto, C.A., Song, M. & Sinha, I. (2005). Revisiting the Miles and Snow strategic framework: uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance. *Strategic Management Journal* 26, 47-74.
- Dvir, D., Segev, E. & Shenhar, A. (1993). Technology's varying impact on the success of strategic business units within the Miles and Snow typology. *Strategic Management Journal* 14:2, 155-162.
- Easterby-Smith, M., Thorpe, R. & Lowe, A. (1991). *Management Research: An Introduction*. London: Sage.
- Gardner, W.L. & Martinko, M.J. (1996). Using the Myers-Briggs Type Indicator to study managers: a literature review and research agenda. *Journal of Management* 22:1, 45-83.

- Haley, U.C.V. & Pini, R. (1994). Blazing international trails in strategic decision-making research. *Conference Proceedings: The Myers-Briggs Type Indicator and Leadership*. An International Research Conference, January 12-14.
- Haley, U.C.V. & Stumpf, S.A. (1989). Cognitive trails in strategic decision-making: linking theories of personalities and cognitions. *Journal of Management Studies* 26:5, 477-497.
- Hambrick, D.C. (1982). Environmental scanning and organizational strategy. *Strategic Management Journal* 3:2, 159-174.
- Hambrick, D.C. (1983). Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. *Academy of Management Journal* 26:1, 5-26.
- Hambrick, D.C. (2003). On the staying power of defenders, analyzers, and prospectors. *Academy of Management Executive* 17:4, 115-118.
- Hambrick, D.C. (2007). Upper echelons theory: An update. *Academy of Management Review* 32:2, 334-343.
- Hambrick, D.C. & Fredrickson, J.W. (2005). Are you sure you have a strategy? *Academy of Management Executive* 19:4, 51-62.
- Hambrick, D.C. & Mason, P.A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review* 9:2, 193-206.
- Hautala, T.M. (2006). The relationship between personality and transformational leadership. *Journal of Management Development* 25:8, 777-794.
- Hautala, T.M. (2007). Impact of followers' type on their expectations of leaders: An individual consideration in transformational leadership. *Journal of Psychological Type* 67:4, 30-37.
- Henderson, J.C. & Nutt, P.C. (1980). The influence of decision style on decision-making behavior. *Management Science* 26:4, 371-86.
- Herbert, T.T. & Deresky, H. (1987). Should general managers match their business strategies? *Organizational Dynamics* 16:3, 40-51.
- Higgs, M. (2006/2007). How do top teams succeed? Factors that contribute to successful senior management team performance. *Journal of General Management* 32:2, 77-99.
- Hough, J.R. & Ogilvie, D.T. (2005). An empirical test of cognitive style and strategic decision outcomes. *Journal of Management Studies* 42: 2, 417-448.
- Hurst, D.K., Rush, J.C. & White, R.E. (1989). Top management teams and organizational renewal. *Strategic Management Journal* 10, special issue, 87-105.

Inch, G.S., Moore, J.E. & Murphy, L.D. (1997). Context analysis in leadership research: examples, procedures, and suggestions for future use. *Leadership Quarterly* 8:1, 1-25.

Ireland, R.D., Hitt, M.A., Bettis, R.A. & DePorrás, D.A. (1987). Strategy formulation processes: differences in perceptions of strength and weaknesses indicators and environmental uncertainty by managerial level. *Strategic Management Journal* 8, 469-485.

Jennings, D. & Disney, J.J. (2006). Designing the strategic planning process: does the psychological type matter. *Management Decision* 44:5, 598-614.

Järnlström, M. (2000). Personality preferences and career expectations of Finnish business students. *Career Development Journal* 5:3, 144-154.

Järnlström, M. (2002). Organizational employment versus entrepreneurship: the personality approach to business students' career aspirations. *Journal of Business and Entrepreneurship* 14:1, 103-123.

Kauer, D., Prinzessin zu Waldeck, T.C. & Schäffer, U. (2007). Effects of top management team characteristics on strategic decision making. Shifting attention to team member personalities and mediating processes. *Management Decision* 45:6, 942-67.

Kellermanns, F., Walter, J., Floyd, S., Lechner, C. & Shaw, J. (2010). To agree or not to agree? A meta-analytical review of strategic consensus and organizational performance. *Journal of Business Research*, forthcoming.

Ketchen Jr., D.J. (2003). Introduction: Raymond E. Miles and Charles C. Snow's organizational strategy, structure and process. *Academy of Management Executive* 17:4, 95-96.

Kirby, L. K. (1997). Introduction. Psychological type and the Myers-Briggs Type Indicator. In: *Developing Leaders, Research and Applications in Psychological Type and Leadership Development*, 3-31. Eds C. Fitzgerald & L. K. Kirby. California: Palo Alto.

Koskinen, O. (2005). *Asia- ja ihmisohtajien eroavuudet*. Acta Wasaensia 134. Vaasa: University of Vaasa.

Lampel, J. (2009). Missing part in Strategy Safari. Unpublished e-mail message 11.10.2009.

Lewis, T.L. & Smith, W.J. (2008). Creating high performing software engineering teams: the impact of problem solving style dominance on group conflict and performance. *Journal of Computing Sciences in Colleges* 24:2, 121-129.

March, J.G. & Simon, H.A. (1958). *Organizations*. New York: Wiley.

- McAdams, D.P. (2001). *The Person. An Integrated Introduction to Personality Psychology*. USA: Hartcourt College Publishers.
- Miles, R.E. & Snow, C.C. (1978). *Organizational Strategy, Structure, and Process*. New York: McGraw-Hill.
- Miles, R.E. & Snow, C.C. (2003). *Organizational Strategy, Structure, and Process*. 2nd ed. California: Stanford University Press.
- Miller, D., Kets De Vries, M.F.R. & Toulouse, J. (1982). Top executive locus of control and its relationship to strategy-making, structure, and environment. *Academy of Management Journal* 25:2, 237-253.
- Mintzberg, H., Ahlstrand, B. & Lampel, J. (1998). *Strategy Safari*. USA: The Free Press.
- Mintzberg, H., Ahlstrand, B. & Lampel, J. (2009). *Strategy Safari*. 2nd ed. Gosport: Ashford Colour Press Ltd.
- Mitroff I.I. & Kilmann, R.H. (1975). Stories managers tell. A new tool organizational problem solving. *Management Review* 64:7, 18-28.
- Myers, I.B & McCaulley (1985). *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologist Press, Inc.
- Myers, I.B., McCaulley, M.H., Quenk, N.L. & Hammer, A.L. (1998). *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. 3.ed. Palo Alto, CA: Consulting Psychologist Press, Inc.
- O'Keefe & Wright, G. (2010). Non-receptive organizational context and scenario planning interventions: A demonstration of inertia in the strategic decision-making of a CEO, despite strong pressure for a change. *Futures* 42, 26-41.
- O'Regan, N. & Ghobadian, A. (2006). Perceptions of generic strategies of small and medium sized engineering and electronics manufacturers in the UK. *Journal of Manufacturing Technology Management* 17:5, 603-20.
- Parnell, J.A. (1997). New evidence in the generic strategy and business performance debate: a research note. *British Journal of Management* 8, 175-181.
- Rajagopalan, N. & Datta, D.K. (1996). CEO characteristics: does industry matter? *Academy of Management Journal* 39:1, 197-215.
- Robbins, S. (2005). *Essentials of Organizational Behavior*. New Jersey: Prentice Hall.

Rosenak, C.M. & Shontz, F.C. (1988). Jungian Q-sorts: demonstrating construct validity for psychological type and the MBTI. *Journal of Psychological Type* 15, 33-45.

Rudestam, K.E. & Newton, R.R. (2007). *Surviving your Dissertation. A Comprehensive Guide to Content and Process*. USA: Sage Publications, Inc.

Segev, E. (1989). A Systematic comparative analysis of two business-level strategic typologies. *Strategic Management Journal* 10:5, 487-505.

Stewart, B., Hetherington, G. & Smith, M. (1984). Survey Item Blank: Volume 1 Measures of Satisfaction. *Quality of Working Life* 1:2.

Stumpf, S.A. & Dunbar, R.L.M. (1991). The effects of personality type on choices made in strategic decision situations. *Decision Sciences* 22, 1047-1069.

Thomas, A.S., Litschert, R.J. & Ramaswamy, K. (1991). The performance impact of strategy manager coalignment: an empirical examination. *Strategic Management Journal* 12:7, 509-522.

Trompenaars, F. & Woolliams, P. (2002). Model behaviour. *People Management* 5 (December), 30-35.

Wissema, J.G., Van der Pol, H.W. & Messer, H.W. (1980). Strategic management archetypes. *Strategic Management Journal* 1, 37-47.

Wuster, C.D. (1993). *Myers-Briggs Type Indicator: A Cultural and Ethical Evaluation*. Executive Research rapport S86, The Industrial College of the Armed Forces.

Yin, R.K. (1989). *Case Study Research: Design and Method*. USA: Sage Publications.

Zajac, E.J. & Shortell, S.M. (1989). Changing generic strategies: likelihood, direction, and performance implications. *Strategic Management Journal* 10, 413-430.

Zeisset, R. (1996). *Statistics and Measurement*. An Introduction to MBTI users. FL: Center for Applications of Psychological Type, Inc.

THE COGNITIVE STYLE AND STRATEGIC DECISIONS OF MANAGERS

Tiina Gallén

Abstract

Researchers have for a long time attempted to understand the concept of strategy. One way to examine strategy is to approach it through managers. According to the theory of cognitive style, there are differences in the ways people perceive things and make judgments. Based on these consistent differences, it can be proposed that there is consistent variation in the ways managers see strategy. Strong evidence of the relationship between cognitive style and strategy can be found in past research. Makes propositions concerning that relationship and suggests some guidelines for empirical research.

Introduction

The importance of knowing oneself and his competitors was already found to be extremely important in ancient war strategies. More than 2000 years ago it has been said:

“Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant both of your enemy and of yourself, you are certain in every battle to be in peril.” (Sun 1971: 84)

Similarly, organizations should know themselves as well as their competitors in order to succeed.

Many researchers have noticed the importance of the CEO in influencing the strategic direction of a firm (e.g. Beatty & Zajac 1987; Miles & Snow 1978). The CEO's characteristics such as age, education, tenure or socio-economic roots have been proposed to have an effect on strategic choices as well as on organizational performance (e.g. Hambrick & Mason 1984; Rajagopalan & Datta 1996; Thomas, Litschert & Ramaswamy 1991). However, as Haley and Stumpf (1989) concluded, those particular characteristics seem unlikely to influence the diagnosis and development of strategic issues directly. Instead of concentrating on observable characteristics, they suggested that personality is the link between cognitive processes and strategic decisions. In a similar vein, Hambrick and Mason (1984: 203) mentioned the importance of psychological characteristics.

Jungian psychological types have been used to provide more integrated views of managers' behavior in some studies (Haley & Pini 1994; Haley & Stumpf 1989; Nutt 1979; Pollay 1970; Stumpf & Dunbar 1991). Henderson and Nutt (1980) used Jungian typology in their study of the influence of decision style on decision making behavior. Chanin and Schner (1984) combined personality dimensions with conflict-handling behavior (see also Kilmann & Thomas 1977). Stumpf and Dunbar (1991) got results which generally supported the proposed relationship between personality-type preferences and the pattern of choices made in strategic decision situations.

Emphasis has also been put on the fit between managerial characteristics and strategy. It has been found that different CEO profiles are associated with different strategic types (Thomas et al. 1991; Herbert & Deresky 1987; Wissema, van der Pol & Messer 1980). Hurst, Rush and White (1989) combined creative management process, cognitive mode and behaviors in their creative management model. Their model is built on the assumption that different compositions of top management teams are needed in organizational renewal. They also proposed links between Jungian cognitive modes and the strategic archetypes of Miles and Snow's (1978) typology. However, their propositions have got only partial empirical support (Saarimaa 1995).

The purpose of this article is to further develop the idea of the relationship between managers' cognitive style and strategic decisions. It is assumed that individual managers' way of gathering information and evaluating it is reflected in their strategic choices. The subject will be studied theoretically by examining the phenomenon on an individual level. Further theoretical as well as empirical examination of the topic provides deeper understanding of managers' behavior and differences in strategic decisions. Based on prior research, propositions concerning the personality-strategy relationship are made. First, research linking managerial characteristics to strategies will be reviewed.

Linking managerial characteristics to strategies

Wissema et al. (1980) proposed classifications of strategies and of management archetypes. Their classifications were based on the assumption that leaders can change their styles even though they may be inflexible in doing so. The market situation (external potential) and the situation of the company in the market (internal potential) were used as starting points for their description of strategies. Based on the life-cycle theory, six strategy types were identified: explosive

growth, expansion, continuous growth, consolidation, slip strategy and contraction.

Managerial characteristics like creativity and intuitive-irrational thinking were combined with explosive growth strategy (Wissema et al. 1980). Expansion strategy, which is applied in a saturated market, requires a conqueror type of manager, who is described as creatively oriented towards anything new, generalist and rationalist. A solid and systematic ruler with common sense and sound judgment was suggested to be the type of manager who corresponds to growth strategy. According to Wissema et al. (1980), consolidation strategy ('nil-growth on a stabilized market') suits a stable-static administrator well. An economiser, whose behavior is reactive and legalistic, has the most adequate set of capabilities required for the realization of slip strategy (the company has low internal potential). Contraction strategy, which has negative growth, demands an insistent diplomat manager whose style of thinking is described as broad and many-sided and who takes others into account. In the last case, a firm's activity is considerably reduced or ended.

Miller, Kets de Vries and Toulouse (1982) studied top executives' locus of control and its relationship to strategy making, structure and environment. They found the strongest relationship between locus of control and strategy making. Internal executives, who see the outcomes of their behavior as results of their own efforts, were found in innovative firms and they tended to place greater emphasis on product design. On the other hand, external executives, who think that the events in their lives are beyond their control, were typically found in firms which operated in more stable environments. External executives made only incremental product modifications. Support was found for personality-based congruence (an executive's personality influences his strategies, which in turn influence structure and environment), particularly in small firms.

Herbert and Deresky (1987) developed a list of important managerial requirements for generic strategies which they named the develop, stabilize, and turnaround strategies. Managers implementing develop strategy were found to have skills in marketing and R & D. These managers were typically aggressive, competitive, innovative, creative and flexible. If the company had stabilize strategy, managers had skills in areas such as production and engineering. Primary personal factors found were conservativeness, carefulness and "quantitativeness". Turnaround strategy demanded managers with ability to handle crises, to make tough decisions, to plan new directions and to operate under conditions of complexity and uncertainty. The personal factors of managers were to be autonomous, risk- and challenge-oriented. According to Herbert and Deresky (1987), manag-

ers' perception and means of implementing the company's objectives must be aligned with the perception and methods of top management.

Overall, the results suggest that creative, active and competitive managers are found in innovative firms. On the other hand, stable firms have managers who are more bureaucratic, conservative and stable than their colleagues in innovative firms. Turnaround strategy is implemented by autonomous and challenge-oriented managers (Herbert and Deresky 1987). Wissema et al. (1980) also defined contraction strategy (negative growth) which is best pursued by many-sided, considerate and human managers.

However, all of these studies have some limitations. First of all, Wissema et al. (1980) based their typology not on emergent but on possible business strategies. They also ignored the reasons why some managers function badly in a particular strategy. On the other hand, Herbert and Deresky (1987) as well as Miller et al. (1982) collected their data from several industries. This kind of data collection can be defended by better generalizability, but as Miles and Snow (1978) pointed out, industry characteristics play a certain role. According to Miles and Snow, patterns of behavior begin to emerge when competing organizations within a single industry are observed. As a conclusion, the manager-strategy relationship has been studied, but a really comprehensive explanatory model, which could be further developed and tested in different countries and industries, seems still to be missing. Next, a widely used method of classifying managers' behavior, Myers Briggs Type-Indicator, and the theory on which it is based is presented.

Cognitive style in classifying behavior

There are dozens of different theories of personality which all have advantages as well as disadvantages. Even though Jung's theory of personality fails to meet many of the criteria for the evaluation of scientific theories, the evidence for the validity of his theory of psychological types has been consistently supportive (Ryckman 1989). Myers-Briggs Type Indicator (MBTI) has been developed in order to make the theory of Jung's psychological types understandable and useful in people's lives Myers and McCaulley (1990). Despite certain limitations concerning the use of MBTI (e.g. Coe 1992; Zemke 1992), there are studies which support its construct validity (Rosenak & Shontz 1988) and use in management research (Gauld & Sink 1985).

The core of the theory around the MBTI is that much seemingly random variation in behavior is actually quite orderly and consistent. According to the theory, peo-

ple prefer to use either sensing (S) or intuition (N) for perception. Sensing refers to perceptions observable through one or more of the five senses. Perception of possibilities, meanings, and relationships by way of insight are typical of intuition-oriented persons. Thinking (T) or feeling (F) is used for purposes of judgment. Thinking-oriented people use the logical decision-making function. The feeling type relies on understanding values and is more subjective than the thinking type. Extraversion (E) and introversion (I) are seen as complementary attitudes or orientations to life. Extraverts tend to focus on people and objects. Introverts are more interested in concepts and ideas. Orientation to the outer world is measured by a judgment (J)/perception (P) attitude, which is a major contribution by Myers and Myers to the theory of psychological types (Myers & McCaulley 1990; Lawrence 1993).

Everyone uses all the previously described functions (S/N, T/F) and attitudes (E/I, J/P), but favors or more naturally adopts the preferred ones. When different ways of perception and judgment are combined, four cognitive styles can be defined: ST (sensation-thinking), SF (sensation-feeling), NT (intuition-thinking) and NF (intuition-feeling). Further, distinguishing eight preferences (E/I, S/N, T/F, and J/P), sixteen MBTI types can be identified (for example ESTJ or INFP). However, many researchers have selected cognitive style instead of the whole type in classifying managers' behavior (e.g. Haley & Stumpf 1989; Henderson & Nutt 1980). This may be partly due to difficulties in data collection: it might be difficult to gather enough extensive data on managers to cover all the 16 MBTI types. Naturally, selecting cognitive style can be defended when a decision making process or its outcomes are the subjects of the study.

Cognitive style has been typically used in studies of information processing in order to develop decision making systems. Among many others, Macintosh (1985) pointed out the importance of understanding individual differences in the way managers gather, process and utilize information. Similarly, Mason and Mitroff (1973) and Henderson and Nutt (1980) based their studies on cognitive style. In addition to descriptions of cognitive styles provided by Myers and McCaulley (1990), some of these studies of decision making have been selected for closer examination in this paper in order to make a review of the knowledge of managers' actual behavior. Each cognitive style is presented in the next section.

The Sensing-Thinking Type (ST)

ST people rely on sensing for purposes of perception and on thinking for purposes of judgment. ST types deal best with concrete, objective problems. They conserve valued resources and protect practices that work and find scope for their abilities in technical skills with facts and objects. Their best chances of success and satis-

faction lie in fields that demand impersonal analysis of concrete facts, such as economics, law, business, accounting, production, and the handling of machines and materials (Myers & McCaulley 1990: 33-35). Past research suggests (Mitroff & Kilmann 1975) that, in the ST managers' ideal organization complete control, certainty and specificity are emphasized. Work roles are well defined. The ideal organization is authoritarian and there is a well-defined hierarchical line of authority. Organizational goals are realistic, down-to-earth, limited and narrowly economic. Kilmann and Herden (1976) argued that the ST component of organizational effectiveness is achieved by internal efficiency.

Because STs are supposed to be affected by a bias towards anchoring functions, they may fail to alter their judgment sufficiently in the light of new information (Haley & Stumpf 1989). Functional fixedness bias refers to the reliance of STs on certain problem solving methods (such as standard operating procedures). The hypothesis, according to which the actions of STs tend to be quick-fix solutions to problems, involve low levels of risk, and reflect standard operating procedures, has not received support in the study made by Stumpf and Dunbar (1991). However, it has been found that the STs see high risk and are reluctant to adopt new projects as compared to the SF executives who are risk tolerant and more likely to adopt such projects (Henderson & Nutt 1980; Nutt 1986; Nutt 1990).

The Sensing-Feeling Type (SF)

Relying primarily on sensing for perception and feeling for judgment, the SF people approach their decisions with personal warmth. They like working in harmonious, familiar and predictable situations. They are most likely to succeed and be satisfied in work where their personal warmth can be applied effectively to the immediate situation, as in nursing, teaching (especially elementary teaching), social work and the selling of tangibles (Myers & McCaulley 1990: 33-35). Instead of caring about theory or general issues, SF types are concerned with the detailed human relations in their organization (Mitroff & Kilmann 1975). The physical work environment is important to SF types. Their ideal organization is realistic.

According to Kilmann and Herden (1976), internal effectiveness and employee turnover and commitment are considered important by SF types. Haley and Stumpf (1989) suggest that one of their weaknesses is availability bias. This refers to the SF types' tendency to pay more attention to people-oriented information. They may restate viewpoints to shape arguments used by others. They view people as dynamic and interesting and situations as static and pallid in themselves. The SF types' actions tend to conform to socially accepted norms and values, express social approval, and satisfy the wants of others (Stumpf & Dunbar 1991).

The Intuitive-Feeling Type (NF)

NFs possess the same personal warmth as SF people because their judgment is based on feeling, but because they prefer intuition to sensing, they focus on possibilities. They are both enthusiastic and insightful and may excel in advertising, the selling of intangibles, counseling, psychiatry, and writing (Myers & McCaulley 1990: 33-35). Broad, global themes and issues are typical of NF managers (Mitroff & Kilmann 1975). The ideal organization for NFs is organically adaptive, personally idealistic and flexible. An NF organization is completely decentralized with no clear lines of authority. The emphasis of NFs is on the most general personal and human goals of organizations. The heroes of NF organizations create new lines of direction (such as new products and objectives) and give the organization a new sense of direction in the human or personal sense.

The NF component of organizational effectiveness is claimed to be external effectiveness (Kilmann & Herden 1976). External effectiveness emphasizes social responsibility and satisfaction of the interested parties. According to Haley and Stumpf (1989), NF types may overestimate the feasibility of their plans based on vivid data. A reasoning-by-analogy bias means that NFs enjoy creative problem-solving but may provide extremely simplistic overviews of complex situations. Stumpf and Dunbar (1991) proposed that NF types engage in actions which often involve substantial, radical changes that affect the organization-environment interface.

The Intuitive-Thinking Type (NT)

The NT people also use intuition but trust thinking when making judgments. They are most successful in solving problems in fields of special interest, whether scientific research, electronic computing, mathematics, the more complex aspects of finance, or any sort of development or pioneering in technical areas (Myers & McCaulley 1990: 33-35). Mitroff and Kilmann (1975) found that the NT's ideal organization is impersonal but instead of being realistic like an ST organization, it is idealistic. Impersonally conceptual, broad and ill-defined macro-economic issues are found essential by NTs. Their heroes are broad conceptualizers who take an organization designed to accomplish a very specific, limited set of goals and create new goals.

NT types see organizational effectiveness as a result of external efficiency and find new product development important (Kilmann & Herden 1976). According to Haley and Stumpf (1989), NTs are affected by biases emphasizing perseverance. They may adhere to their prior beliefs and ignore subsequent, contradictory evidence. Longer-term and open-ended projects interest them. NTs tend to seek

opportunities, focus on the positive aspects of an opportunity, and ignore the risks or threats involved in implementing some action (Stumpf & Dunbar 1991).

As previously described studies confirm, there seem to be clear differences in behavior between managers of different cognitive styles. Practical and matter-of-fact ST types seem to differ quite a lot from enthusiastic and insightful NF types, who are at the other end of the continuum compared with STs. Similarly, logical and ingenious NT types are the exact opposites of sympathetic and friendly SF types. In the next section, the Miles and Snow (1978) typology and some of the studies confirming and extending it will be reviewed.

Organization typology

According to Hambrick and Mason (1984: 197), the environment and growth of an industry can affect the types of managers found in top positions. Because of the impact of such industry related factors, the Miles and Snow (1978) typology, which concentrates on strategies within one industry, is chosen. Compared for example with Mintzberg's typology, it is more widely used in research (Segev 1987: 574). The relationship between strategic types and organizational performance has been studied intensively (Conant, Mokwa & Varadarajan 1990; Dvir, Segev & Shenhar 1993; Segev 1987; Smith, Guthrie & Chen 1989). Banking (James & Hatten 1995; McDaniel & Kolari 1987) as well as hospital care (Beekun & Ginn 1993; Hambrick 1981; Shortell & Zajac 1990) have been popular subjects of prior research. As Miller (1996) stated, Miles and Snow's typology is among the most prominent of strategic typologies.

Using field research in several industries, Miles and Snow (1978) identified a theoretical framework which consists of the adaptive process and the organization typology. It is based on the assumption that organizations see what they want to see in the external environment and can be proactive dealing with it. It views the organizations as complete and integrated systems in dynamic interaction with its environment. Miles and Snow agree with many other researchers that an organization's structure and process are shaped by the management's strategic choices. According to Miles and Snow, organizations align themselves with the environment by an adaptive process which includes solving entrepreneurial, engineering and administrative problems.

Miles and Snow (1978) found that there are three generic strategies: defender, prospector and analyzer. Defenders are organizations that offer a stable set of products or services and compete primarily on the basis of price, quality, service

and delivery. Prospectors are “first in the market”, have a very broad product-market definition and focus on innovation and change. Analyzers have characteristics from the defender and the prospector. Analyzers make fewer and slower product/market changes than prospectors, and they are somewhat less committed to stability and efficiency than defenders. Any one of these strategies can be successful in a given environment if the firm acts consistently in all areas of its operation. In addition to three viable strategies, Miles and Snow (1978) defined a 'residual' reactor strategy. Reactors make inconsistent entrepreneurial, engineering, and administrative choices.

Miles and Snow (1978: 116-129) suggested that traditional and human relations managerial beliefs are more likely to be found in defender and reactor organizations. Policies in the traditional management model define supervision and control as basic managerial tasks. Detailed work routines and procedures are needed. According to the policies of the human relation model, the manager's basic task is to make each worker feel useful and important. Subordinates should be kept informed and their objections to proposed plans should be listened to. On the contrary, Miles and Snow suggest that managerial beliefs involving human resources model will be found in analyzer and prospectors organizations. The manager's basic task is to make use of his "untapped" human resources and all members should be allowed to contribute to the limit of their ability.

Prospectors' strong marketing orientation was supported in the research on distinctive marketing competence made by Conant et al. (1990). McDaniel and Kolar (1987) arrived at similar results in their research in the marketing strategy implications of the Miles and Snow typology. Marketing officers of prospector and analyzer banks were found to view new product development activities and pricing as being more important to organizational strategy than their colleagues in defender banks. Promotional activities were generally viewed as being less important by defenders than by prospectors and analyzers. However, the most consistent findings were those related to personal selling activities. Prospectors and analyzers were found to view personal selling in general, telephone solicitation, sales training for employees and sales managers to supervise sales personnel as being more important than defenders.

According to Hambrick (1982), strategic differences between prospectors and defenders occur primarily through internal analysis and political processes and not through unequal possession of information. Distinctive competences are the results of propensity and ability to act on certain items of environmental information. Executives scan according to their own personal or functional interests. The pattern of coupling between an organization and the external environment has

been found to be a function of strategic type and type of coupling. In the resource exchange and information domains prospectors were the most tightly coupled externally.

The CEOs of prospector firms have been found to be significantly younger than those of defender firms. Prospector firms have CEOs with shorter tenure regarding both the employment and position and with more education than those in their defender counterparts. When organizational performance was considered, firms with a greater degree of alignment between their strategy and the profiles of top managers, generally achieved superior performance outcomes (Thomas et al. 1991). According to Reponen, Pärnistö and Virtanen (1994), personality has a significant effect on strategy formulation. Since people use and perceive the framework of strategic planning differently, those models alone cannot solve problems of strategic planning. If we want to support both innovativeness and efficiency in the strategy process various types of personality should be involved in the planning.

Towards a model of cognitive style and strategy type

In this section, theories about cognitive styles and strategic types will be combined. Propositions are made based on similarities between managers of different cognitive styles and strategic types. Finally, a framework which could be used as a basis for studying the personality-manager -relationship, will be presented.

The Sensing-Thinking Type and the Defender Organization

Based on their studies, Mitroff and Kilmann (1975) concluded that the ideal organization for ST people is bureaucratic and has centralized well-defined authority. Similarly, Miles and Snow (1978) described defender organizations which have a tendency towards functional structure and centralized control. ST types as well as defender organizations do not usually want to run any risk in business (table 1). As described in table I, ST component and the defender's view of organizational effectiveness are achieved through efficiency. The focus is on output/input, and units produced per work hour are measured. A certain preference for stability is typical of ST types and defenders. The most powerful members of the dominant coalition in defender organizations are financial and production experts. Those are areas in which STs are often interested too (table 1). On the basis of the similarities between the ST type's ideal organization and the defender organization the following proposition is made:

Proposition 1. ST managers tend to view defender strategy as viable more often than other managers.

Table 1. Some perceived and hypothesized combinations between ST type and defender strategy

	ST	Defender
1. Organization	Bureaucratic, impersonally realistic, detailed and factual	Narrow and stable product-market domain
2. Structure	Well-defined authority	Functional and line authority
3. Control	Centralized	Centralized
4. Planning	Operational problem solving	Problem solving, completed before action is taken
5. Goals	Realistic, down-to-earth, limited, narrowly economic	Maintenance of domain, cost-efficient technology
6. Organizational effectiveness	Internal efficiency, focus on output and input, units produced per work hour	Efficient (do the things right), performance measured against previous years
7. Weaknesses	May fail to incorporate new qualitative data, action-averse and risk-averse, preference for established practices and the status quo	Inefficient in responding to possible changes in market environment, inflexible because of heavy technological investments
8. Dominant areas	Accounting, business, production and handling of machines and material	Finance and production experts

Notes: Statements about ST type: (1)-(5) Mitroff and Kilmann (1975), (6) Kilmann and Herden (1976), (7) Haley and Stumpf (1989) and (8) Myers and McCaulley (1990: 33-35)

Statements about defender: Miles and Snow (1978: 31-48)

The Intuitive-Feeling Type and the Prospector Organization

Compared with the defender, the prospector is at the other end of the continuum, in the same way the intuitive-feeling (NF) type compared to the sensing-thinking (ST) type. Mitroff and Kilmann (1975) described the NF type's ideal organization as flexible and adaptive. NF types like to seek new possibilities. Similarly, the

prospector organization has a broad and continuously developing product-market domain (Miles & Snow 1978) which could easily be maintained and developed by the NF type. The structure typical of both the NF type's ideal organization and the prospector is decentralization (table 2). In prospector organizations, performance is measured against important competitors and NF organizations focus on external effectiveness (table 2). The risk in NF organizations and the prospector is connected with profitability. Marketing is found to be an important area in both of them (see also McDaniel & Kolari 1987; Segev 1987). The following proposition is made:

Proposition 2. NF managers tend to view prospector strategy as viable more often than other managers.

Table 2. Some perceived and hypothesized combinations between NF type and prospector

	NF	Prospector
1. Organization	Organically adaptive, personally idealistic and flexible	Broad and continuously expanding product-market domain
2. Structure	Delegation to decentralized units	Product and/or market oriented
3. Control	Decentralized	Decentralized
4. Planning	Long-range human goals	Problem finding, comprehensive
5. Goals	New lines of direction (general and personal)	Find and exploit new opportunities
6. Organizational effectiveness	External effectiveness, focus on societal satisfaction, social responsibility	Effectiveness (do the right things right), performance measured against important competitors
7. Weaknesses	May overestimate feasibility and implementability of plans on vivid data, may not rigorously test their ideas	Risk of low profitability and overextension of its resources, administrative system may underutilize and misutilize resources
8. Dominant areas	Advertising, selling of tangibles, counseling	Marketing and R&D

Notes: Statements about NF type: (1)-(5) Mitroff and Kilmann (1975), (6) Kilmann and Herden (1976), (7) Haley and Stumpf (1989) and (8) Myers and McCaulley (1990: 33-35)

Statements about prospector: Miles and Snow (1978: 49-67)

The Intuitive-Thinking Type and the Analyzer Organization

The logical and ingenious intuitive-thinking (NT) type's ideal organization is matrix structured (table 3) which, according to Miles and Snow (1978), is eminently suitable for an analyzer too. NT types create new goals like NF types but concentrate on a limited set of goals. A bargaining position with the environment is in the center of the NT type's aim to achieve external efficiency. NT types emphasize new product development and cost of capital (table 3). NT types are a kind of calculated followers of change just as analyzers are too. Even they use intuition for purposes of perception, their thinking may prevent them from being the first change agents. The following proposition is made:

Proposition 3. NT managers tend to view analyzer strategy as viable more often than other managers.

Table 3. Some perceived and hypothesized combinations between NT type and analyzer

	NT	Analyzer
1. Organization	Impersonally conceptual broad and ill-defined macro-economic issues	Segmented and carefully adjusted product-market domain
2. Structure	Matrix	Matrix oriented
3. Control	Centralized with formal liaison to key power centres	Moderately centralized
4. Planning	Long-range strategic planning	Comprehensive and intensive
5. Goals	A very specific, limited set of goals, create new goals	Balanced between stable and changing domains
6. Organizational effectiveness	External efficiency, focus on bargaining position with environment	Effectiveness and efficiency
7. Weaknesses	May adhere to their prior beliefs and ignore subsequent, contradictory evidence or nuances of data	Inefficiency and ineffectiveness, it may be difficult to balance the administrative system
8. Dominant areas	Scientific research, electronic computing, more complex aspects of finance	Marketing, applied research, production

Notes: Statements about NT type: (1)-(5) Mitroff and Kilmann (1975), (6) Kilmann and Herden (1976), (7) Haley and Stumpf (1989) and (8) Myers and McCaulley (1990: 33-35)

Statements about analyzer: Miles and Snow (1978: 68-80)

The Sensing-Feeling Type and the Reactor Organization

Sympathetic and friendly sensing-feeling (SF) types have described their ideal organization as familiar and personally realistic (table 4). SF types find participative decision making important but like clear roles and work rules (table 4). Planning is done mostly on a daily basis. The reactor strategy, which is inconsistent and unstable, is a result of unsuccessfully pursuing one of three stable strategies (Miles & Snow 1978: 81-93). An organization can become a reactor one for several reasons. The top management may not have a clearly articulated strategy or there might not be any fit between structure, process and strategy. Last, reactor strategy may be due to changes in the organizational environment which have not been taken into consideration in the strategy-structure relationship. Since SF types concentrate on organizational effectiveness through internal effectiveness (table 4), they may fail to take environmental changes in strategy formulation into account. Haley and Stumpf (1989) found that SF types are the most risk tolerant of all four types. They were more often willing to adopt risky projects than others. More often than in business, SF types are found in areas such as nursing and teaching which are the kind of areas where trouble-shooters are needed (table 4). The following proposition is made:

Proposition 4. SF managers tend to choose reactor strategy more often than other managers.

Table 4. Some perceived and hypothesized combinations between SF type and reactor

	SF	Reactor
1. Organization	Familiar, personally realistic, human qualities of specific people work roles	
2. Structure	Clear-cut roles and rules of work	Tight formal authority
3. Control	Participative decision making	Loose operating design
4. Planning	Day-to-day human relations	Crisis oriented and disjointed
5. Goals	The organization is like home	Stable strategy
6. Organizational effectiveness	Internal effectiveness, employee turnover and commitment	
7. Weaknesses	May concentrate on data about people at the expense of ideas, do what they think other want them to do	Perceptual instability, responds inappropriately to environmental change and uncertainty
8. Dominant areas	Nursing, teaching, social work	Troubleshooters

Notes: Statements about SF type: (1)-(5) Mitroff and Kilmann (1975), (6) Kilmann and Herden (1976), (7) Haley and Stumpf (1989) and (8) Myers and McCaulley (1990: 33-35)

Statements about reactor: Miles and Snow (1978: 81-93).

Similarities between descriptions of on the other hand different ways of perceiving and judging and on the other hand strategy types were identified. Defenders and prospectors are the opposite poles of a continuum as are ST and NF. In between there is the analyzer strategy, which is suggested to be most likely to be chosen by NTs. SFs, whose type seems to be most uncommon among managers (NF managers 13%, NT managers 37%, ST managers 40% and SF managers 10% in the USA according to Haley and Pini (1994)), is proposed to be the type who most easily slips into reactor strategy. Proposed relationships are summarized in figure 1.

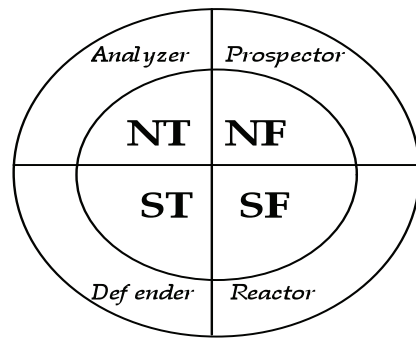


Figure 1. Proposed model of the relationship between cognitive style and strategy type

Conclusions

The purpose of this article was to theoretically develop the idea of the connection between a manager's cognitive style and his strategic decisions. Based on previous studies, a lot of similarities between ideal organizations of managers with different cognitive styles and Miles and Snow's (1978) organization typology were found. Propositions of relationships between cognitive styles and strategic types were made. Finally, proposed relationships were summarized in the model of cognitive style and strategy type.

Theoretically, this is an interesting field of study because past studies using cognitive styles have often concentrated on decision making processes instead of on the content of strategic decisions. Demographically observable characteristics such as age, socioeconomic background or education have been used when there have been attempts to explain strategic choices. However, based on these observable characteristics, it has not been possible to fully explain different strategic choices managers make based on identical information. The cognitive style of a manager seems to be a possible missing link when differences in strategic choices are explained.

Studies of manager-strategy fit have not been able to build a framework which could easily be used and tested in different organizations and cultures around the world. Since Miles and Snow (1978) only suggest possible connections between management theories and strategic types, this kind of research can extend the knowledge of manager-strategy fit and provide a basis for increasing number of studies in the area. This research also provides a chance to extend the upper echelons perspective (Hambrick & Mason 1984) to discover in more detail the psy-

chological characteristics of managers. If the relationship is confirmed at the individual level, the model can be extended to group levels too. That could help top management teams in committing themselves to strategic choices. If a manager understands his own way of making decisions as well as the different views of other people, it would be easier to reach a consensus on and better commitment to strategic issues.

This article emphasizes the importance of the self-understanding of the managers. It is claimed that differences in strategic decisions are not due to different information but different interpretations which managers make according to their cognitive style. Especially for practicing managers, it is important to be able to identify the basic patterns in their behavior. When you know yourself, it is easier to understand others too. In that way managers can learn to see their own bias in decision making and be able to extend their way of thinking. On the other hand, it is important to notice manager's effect on strategy when a new member enters the top management team. Problems may arise particularly if the new manager has cognitive style which has not before been represented in the top management team. However, problems must be solved because the success of the company comes from individuals. Managers are the individuals who matter the most - they make decisions which direct the future success of the company.

The development today is fast, and usually decisions have to be made quickly. Some managers seem to be able to make more successful and profitable decisions than others. Understanding their decisions extends our knowledge of differences in the strategic behavior of firms. Naturally, there are still many questions which cannot be answered in this article. One might doubt usefulness of the cognitive style or Miles and Snow typology in this connection. Despite some limitations, testing the model of cognitive style and strategy type will give us new information about manager's decision making behavior.

When empirical testing is done, it must be carried out so that managers are asked either to describe the best future strategy for a firm or choose from descriptions the one which they find the most promising. Otherwise, it is possible that they do not dare to choose the strategy which best corresponds with their view of viable ideal strategy because of limitations of the present situation in their organization. If the study is done using qualitative strategy descriptions, richer information about managers' view could be received. Then the effect of the attitude to life (Extraversion or Introversion) and to outer world (Judgment or Perception) on decision making behavior could also be taken into consideration if needed. Behavioral simulation as well as participant observation for example could be used to shed more light on manager-strategy relationship in the future.

References

- Beatty, R.P. & Zajac, E.J. (1987). Ceo change and firm performance in large corporations: succession effects and manager effects. *Strategic Management Journal* 8:4, 305-317.
- Beekun, R.I. & Ginn, G.O. (1993). Business strategy and interorganizational linkages within the acute care hospital industry: an expansion of the Miles and Snow typology. *Human Relations* 46:11, 1291-1318.
- Chanin, M.N. & Schneer, J.A. (1984). A Study of the relationship between Jungian personality dimensions and conflict-handling behavior. *Human Relations* 37:10, 863-879.
- Coe, C.K. (1992). The MBTI: potential uses and misuses in personnel administration. *Public Personnel Management* 21:4, 511-522.
- Conant, J.S., Mokwa, M.P. & Varadarajan, R.P. (1990). Strategic types, distinctive marketing competencies and organizational performance: a multiple measures-based study. *Strategic Management Journal* 11, 365-383.
- Dvir, D., Segev, E. & Shenhar, A. (1993). Technology's varying impact on the success of strategic business units within the Miles and Snow typology. *Strategic Management Journal* 14:2, 155-162.
- Gauld, V. & Sink, D. (1985). The MBTI as a diagnostic tool in organization development interventions. *Journal of Psychological Type* 9, 24-29.
- Haley, U.C.V. & Pini, R. (1994). Blazing international trails in strategic decision-making research. *Conference Proceedings: The Myers-Briggs Type Indicator and Leadership: An International Research Conference*, 19-29.
- Haley, U.C.V. & Stumpf, S.A. (1989). Cognitive trails in strategic decision-making: linking theories of personalities and cognitions. *Journal of Management Studies* 26:5, 477-497.
- Hambrick, D.C. (1981). Strategic awareness within top management team. *Strategic Management Journal* 2:3, 263-279.
- Hambrick, D.C. (1982). Environmental scanning and organizational strategy. *Strategic Management Journal* 3:2, 159-174.
- Hambrick, D.C. & Mason, P.A. (1984). Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review* 9:2, 193-206.
- Henderson, J.C. & Nutt, P.C. (1980). The Influence of decision style on decision making behavior. *Management Science* 26:4, 371-386.

Herbert, T.T. & Deresky, H. (1987). Should general managers match their business strategies? *Organizational Dynamics* 16:3, 40-51.

Hurst, D.K., Rush, J.C. & White, R.E. (1989). Top management teams and organizational renewal. *Strategic Management Journal* 10, Special Issue, 87-105.

James, W.L. & Hatten, K.J. (1995). Research notes and communications: further evidence on the validity of the self typing paragraph approach: Miles and Snow strategic archetypes in banking. *Strategic Management Journal* 16:2, 161-168.

Kilmann, R.H. & Herden, R.P. (1976). Towards a systematic methodology for evaluating the impact of interventions on organizational effectiveness. *Academy of Management Review* 1:3, 87-98.

Kilmann, R.H. & Thomas, K.W. (1977). Developing a force-choice measure of conflict-handling behavior: the "Mode" instrument. *Educational and Psychological Measurement* 37:2, 309-325.

Lawrence, G. (1993). *People Types and Tiger Stripes*. Gainesville, Florida: Center Applications of Psychological Type.

Mason, R.O. & Mitroff, I.I. (1973). A program for research on management information systems. *Management Science* 19:5, 475-487.

Macintosh, N.B. (1985). *The Social Software of Accounting and Information Systems*. NY: John Wiley & Sons.

McDaniel, S.W. & Kolari, J.W. (1987). Marketing strategy implications of the Miles and Snow strategic typology. *Journal of Marketing* 51:4, 19-30.

Miles, R.E. & Snow, C.C. (1978). *Organizational Strategy Structure, and Process*. New York: McGraw-Hill.

Miller, D. (1996). Configurations revisited. *Strategic Management Journal* 17:7, 505-512.

Miller, D., Kets De Vries, M.F.R. & Toulouse, J-M. (1982). Top executive locus of control and its relationship to strategy-making, structure, and environment. *Academy of Management Journal* 25:2, 237-253.

Mitroff, I.I. & Kilmann, R.H. (1975). Stories managers tell: a new tool for organizational problem solving. *Management Review*, July, 18-28.

Myers, I.B. & McCaulley, M.H. (1990). *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologist Press, Inc.

Nutt, P.C. (1979). Influence of decision styles on use of decision models. *Technological Forecasting and Social Change* 14, 77-93.

Nutt, P.C. (1986). Decision style and strategic decisions of top executives. *Technological Forecasting and Social Change* 30, 39-62.

Nutt, P.C. (1990). Strategic decisions made by top executives and middle managers with data and process dominant styles. *Journal of Management Studies* 27:2, 173-194.

Pollay, R.W. (1970). The Structure of executive decisions and decision times. *Administrative Science Quarterly*, December, 459-471.

Rajagopalan, N. & Datta, D.K. (1996). CEO characteristics: does industry matter? *Academy of Management Journal* 39:1, 197-215.

Reponen, T., Pärnistö, J. & Virtanen, J. (1994). *Personality and Cognitive Mapping as an Explanatory Device for Executive Decision Making Processes*. Unpublished Study. Turku: University of Turku.

Rosenak, C.M. & Shontz, F.C. (1988). Jungian Q-sorts: demonstrating construct validity for psychological type and the MBTI. *Journal of Psychological Type* 15, 33-45.

Ryckman, R.M. (1989). *Theories of Personality*. A Division of Wadsworth Inc: Brooks/Cole Publishing Company.

Saarimaa, T. (1995). *Johtoryhmän kokoonpanon vaikutus yrityksen strategiaan* (The effect of the top management team on firm's strategy). Unpublished Master Thesis. Vaasa: University of Vaasa.

Segev, E. (1987). Strategy, strategy-making, and performance in a business game. *Strategic Management Journal* 8:6, 565-577.

Shortell, S.M. & Zajac, E.J. (1990). Perceptual and archival measures of Miles and Snow's strategic types: A comprehensive assessment of reliability and validity. *Academy of Management Journal* 33:4, 817-832.

Smith, K.G., Guthrie, J.P. & Chen, M.-J. (1989). Strategy, size and performance. *Organizational Studies* 10:1, 63-81.

Stumpf, S.A. & Dunbar, R.L.M. (1991). The effects of personality type on choices made in strategic decision situations. *Decision Sciences* 22, 1047-1069.

Sun, Tzu (1971). *The Art of War* (S. B. Confit translation). New York: Oxford University Press.

Thomas, A.S., Litschert, R.J. & Ramaswamy, K. (1991). The performance impact of strategy manager coalignment: an empirical examination. *Strategic Management Journal* 12:7, 509-522.

Wissema, J.G. , Van der Pol, H.W. & Messer, H.M. (1980). Strategic management archetypes. *Strategic Management Journal* 1, 37-47.

Zemke, R. (1992). Second thoughts about the MBTI. *Training* 29:4, 43-47.

THE COGNITIVE STYLE AND STRATEGIC THINKING

Tiina Gallén

Summary

The relationship between cognitive style and strategy type is studied on the theoretical basis. Theoretical review is extended by presenting some preliminary analysis of the data collected from the spa industry. It seems that some support for the idea of personality-strategy relationship can be found but however, thorough qualitative analysis is needed.

Introduction

The importance of knowing oneself and his competitors was already found to be extremely important in ancient war strategies. More than 2000 years ago it has been said:

“Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant both of your enemy and of yourself, you are certain in every battle to be in peril.” (Sun 1971: 84)

There have been several attempts to combine manager and strategy. One of the most common themes in studies of the relationship between managers and strategic issues has been different strategic decision making styles (e.g. Haley & Stumpf 1994; Haley & Pini 1989; Henderson & Nutt 1980; Nutt 1986). However, those studies do not help to explain differences in the content of the strategic decisions. The purpose of this study is to explain why companies facing similar situations choose different strategies by looking at the personality and especially cognitive style of the manager (see Gallén 1997). The cognitive style (ST, NT, NF, SF) is measured by using Myers-Briggs Type Indicator (Myers & McCaulley 1990).

Miles and Snow (1978) typology consists of generic strategies, defender, prospector and analyzer, and reactor, which is not a consistent strategy type. Defenders offer stable set of products or services and compete primarily on the basis of

price, quality, service and delivery. Prospectors have very broad product-market definition and focus on innovation and change. Analyzers have characteristics from both of these strategy types. Some similarities between Miles and Snow (1978) typology and the theory of the cognitive style can be identified (Gallén 1997). Next propositions are made by combining cognitive styles of the managers and strategy types.

The relationship between cognitive styles and strategy types

The Sensing-Thinking Type and the Defender Organization

Based on their studies, Mitroff and Kilmann (1975) concluded that the ideal organization for ST people is bureaucratic and has centralized well-defined authority. Similarly, Miles and Snow (1978) described defender organizations which have a tendency towards functional structure and centralized control. ST types as well as defender organizations do not usually want to run any risk in business. ST component and the defender's view of organizational effectiveness are achieved through efficiency. A certain preference for stability is typical of ST types and defenders. The most powerful members of the dominant coalition in defender organizations are financial and production experts. Those are areas in which STs are often interested too. On the basis of the similarities between the ST type's ideal organization and the defender organization the following proposition is made:

Proposition 1. STs tend to view defender strategy as viable more often than other managers.

The Intuitive-Feeling Type and the Prospector Organization

Compared with the defender, the prospector is at the other end of the continuum, in the same way the NF type compared to the ST type. Mitroff and Kilmann (1975) described the NF type's ideal organization as flexible and adaptive. NF types like to seek new possibilities. Similarly, the prospector organization has a broad and continuously developing product-market domain (Miles and Snow, 1978) which could easily be maintained and developed by the NF type. The structure typical of both the NF type's ideal organization and the prospector is decentralization. In prospector organizations, performance is measured against important competitors and NF organizations focus on external effectiveness. The risk in

NF organizations and the prospector is connected with profitability. Marketing is found to be an important area in both of them. The following proposition is made:

Proposition 2. NFs tend to view prospector strategy as viable more often than other managers.

The Intuitive-Thinking Type and the Analyzer Organization

The logical and ingenious intuitive-thinking type's ideal organization is matrix structured which, according to Miles and Snow (1978), is eminently suitable for an analyzer too. NT types create new goals like NF types but concentrate on a limited set of goals. A bargaining position with the environment is in the center of the NT type's aim to achieve external efficiency. NT types emphasize new product development and cost of capital. NT types are a kind of calculated followers of change just as analyzers are too. Even they use intuition for purposes of perception, their thinking may prevent them from being the first change agents. The following proposition is made:

Proposition 3. NTs tend to view analyzer strategy as viable more often than other managers.

The Sensing-Feeling Type and the Reactor Organization

Sympathetic and friendly SF types have described their ideal organization as familiar and personally realistic. SF types find participative decision making important but like clear roles and work rules. Planning is done mostly on a daily basis. The reactor strategy, which is inconsistent and unstable, is a result of unsuccessfully pursuing one of three stable strategies (Miles & Snow 1978: 81-93). An organization can become a reactor one for several reasons. The top management may not have a clearly articulated strategy or there might not be any fit between structure, process and strategy. Last, reactor strategy may be due to changes in the organizational environment which have not been taken into consideration in the strategy-structure relationship. Since SF types concentrate on organizational effectiveness through internal effectiveness, they may fail to take environmental changes in strategy formulation into account. Haley and Stumpf (1989) found that SF types are the most risk tolerant of all four types. They were more often willing to adopt risky projects than others. More often than in business, SF types are found in areas such as nursing and teaching which are the kind of areas where trouble-shooters are needed. The following proposition is made:

Proposition 4. SFs tend to choose reactor strategy more often than other managers.

Similarities between descriptions of on the other hand different ways of perceiving and judging and on the other hand strategy types were identified. Defenders and prospectors are the opposite poles of a continuum as are ST and NF. In between there is the analyzer strategy, which is suggested to be most likely to be chosen by NTs. SFs, whose type seems to be most uncommon among managers (NF managers 13%, NT managers 37%, ST managers 40% and SF managers 10% in the USA according to Haley and Pini (1994)), is proposed to be the type who most easily slips into reactor strategy. Based on similarities between the cognitive style of the manager and Miles and Snow (1978) organization typology proposed model of the relationship between cognitive style and strategy type is proposed (figure 1).

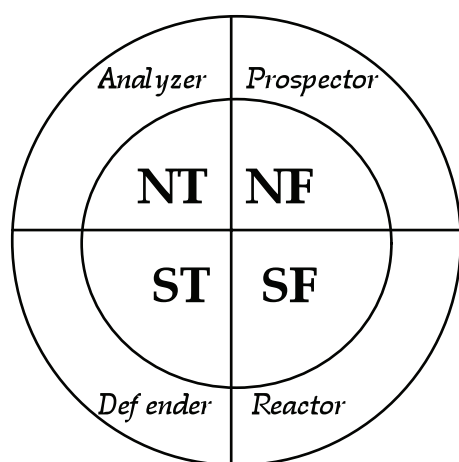


Figure 1. Proposed model of the relationship between cognitive style and strategy type

Some preliminary analysis of the data

Instruments

A research version of Form F of the Myers-Briggs Type Indicator was used to find out the cognitive styles of the respondents. They were also given feedback and asked to confirm the type and special attention was paid to those who had weak preferences. Reliability of the form F was considered to be sufficient (Asikainen 1996).

Strategic decisions were studied by asking the respondents to write an answer to the question: "What kind of strategy a company should pursue in the spa industry in order to succeed in the future?" They were especially asked to write down what

kind of services would be available, to whom they would be offered, and what opportunities or threats there will be.

Subjects

The spa industry was chosen for the study. The sample consisted of 71 managers from 13 different spas. The researcher visited every spa in order to get as reliable answers as possible. The managers had quite different vocations: they ranged from cook to doctor. Their age varied from 30 to 64 years and nearly half of them (45 %) were between 41-50 years. 50 % of them had college degree and 19 % university degree. Commercial education was the most typical for them (44 %), the second was hotel and restaurant business (22 %) and the third health care (19 %). The type distribution is presented in Table 1. ST was the most typical cognitive style (21 %).

Description of the data

The views of the viable strategies were just read through and some guidelines are presented here. According to the answers, ST managers wanted to have segmented groups of customers in the future. This can reflect orientation for stability. However, STs typically mentioned quite a few potential customer groups which suggest a desire for a large volume of their services (like defenders). STs supposed that people in the future value environment, free-time and many-sided services, however, the importance of money was recognizable in many answers. As pointed out before, STs are interested in finance as well as defenders. STs were also afraid of price competition, and would prefer to compete with quality. STs typically wanted to specialize, provide basic services and co-operate with other spas in order to be able to offer additional services as well.

NFs wanted to be different from their competitors. They found that it is important to provide possibilities of many-sided services. They were willing to produce the additional services themselves, as well as use outsiders. In NFs' opinion, people value the environment, and want every kind of memorable experiences. Although they found profitability as a threat in the future, NFs emphasized the dangers of becoming a mass company more than the strait costs. These are mostly consistet with prospector strategy.

Table 1. Type distribution of managers

The Total Sample

N = 71

				N	%
ISTJ N = 6 %= 8.45 *****	ISFJ N = 2 %= 2.82 **	INFJ N = 1 %= 1.41 *	INTJ N = 2 %= 2.82 **	E	55 77.46
ISTP N = 3 %= 4.23 ***	ISFP N = 0 %= 0.00	INFP N = 1 %= 1.41 *	INTP N = 1 %= 1.41 *	I	16 22.54
ESTP N = 4 %= 5.63 ****	ESFP N = 2 %= 2.82 **	ENFP N = 3 %= 4.23 ***	ENTP N = 5 %= 7.04 *****	S	37 52.11
ESTJ N = 16 %= 22.54 ***** *****	ESFJ N = 4 %= 5.63 ****	ENFJ N = 6 %= 8.45 *****	ENTJ N = 15 %= 21.13 ***** *****	N	34 47.89
				T	52 73.24
				F	19 26.76
				J	52 73.24
				P	19 26.76
				IJ	11 15.49
				IP	5 7.04
				EP	14 19.72
				EJ	41 57.75
				ST	29 40.85
				SF	8 11.27
				NF	11 15.49
				NT	23 32.39
				SJ	28 39.44
				SP	9 12.68
				NP	10 14.08
				NJ	24 33.80
				TJ	39 54.93
				TP	13 18.31
				FP	6 8.45
				FJ	13 18.31
				IN	5 7.04
				EN	29 40.85
				IS	11 15.49
				ES	26 36.62
				Sdom	14 19.72
				Ndom	11 15.49
				Tdom	35 49.30
				Fdom	11 15.49

Environment, free-time and individuality were the values mentioned by NTs. NTs mentioned marketing more often than other managers as could be expected (analyzer strategy). Emphasizing many-sided, distinctive services they focused on the need to differ from competitors. When NTs mentioned competitors as a threat, they generally meant competitors abroad or providers of other leisure time services. They also found cost efficiency and high prices compared with competitors are threats in the future. Like analyzers have characteristics from defender strategy and prospector strategy, NT managers' answers had similar things with both STs and NFs.

SFs relied most on the idea that demand in the spa industry will grow. This can be interpreted as a sign of their risk tolerance (Haley and Stumpf 1989). Environment and safety were among the values which they shared. They were also worried for the price compared with other competitors, who they found to be mostly abroad. Concentration and specialization were also found to be important by SFs in the future. Without more analysis, it is impossible to say if their view of the viable strategy is like reactor more often than other managers'.

The answers varied in some degree despite of the cognitive style of the manager. The answers need to be coded to different strategy types and then the propositions need to be studied more carefully. However, the idea of personality-strategy relationship seemed to get some support. The typical components of their cognitive styles were reflected in some degrees in their answers. It is also possible that some other preference of their personality explains better their answers than the cognitive style. For example, temperaments have been used in the study of the influence of cognitive-based group composition on decision-making process and outcome (Volkema & Gorman 1998).

Discussion

Theoretically, this is an interesting field of study because past studies using cognitive styles have often concentrated on decision making processes instead of on the content of strategic decisions. Demographically observable characteristics such as age, socioeconomic background or education have been used when there have been attempts to explain strategic choices. However, based on these observable characteristics, it has not been possible to fully explain different strategic choices managers make based on identical information. The cognitive style of a manager seems to be a possible missing link when differences in strategic choices are explained.

This study emphasizes the importance of the self-understanding of the managers. It is claimed that differences in strategic decisions are not due to different information but different interpretations which managers make according to their cognitive style. Especially for practicing managers, it is important to be able to identify the basic patterns in their behavior. When you know yourself, it is easier to understand others. In this way managers can learn to see their own bias in decision making and to extend their way of thinking. On the other hand, it is important to notice manager's effect on strategy when a new member enters the top management team. Problems may arise particularly if the new manager has cognitive style which has not before been represented in the team.

Only description of the empirical data is presented in this paper. Final conclusions cannot be made before the data is analyzed. However, the answers show that the cognitive style of the managers might have effect on his view of the viable strategy - the consistency of the relationship will be found in studies in the future.

References

- Asikainen, V. (1996). *Personality Types and Creativity Orientations of Managers*. Licentiate thesis in management and organization. Unpublished. Vaasa: University of Vaasa.
- Gallén, T. (1997). The cognitive style and strategic decisions of managers. *Management Decision* 35:7, 541-551.
- Haley, U.C.V. & Pini, R. (1994). Blazing international trails in strategic decision-making research. *Conference Proceedings: The Myers-Briggs Type Indicator and Leadership*. An International Research Conference, 19-29.
- Haley, U.C.V. & Stumpf, S.A. (1989). Cognitive trails in strategic decision-making: linking theories of personalities and cognitions. *Journal of Management Studies* 26:5, 477-497.
- Henderson, J.C. & Nutt, P.C. (1980). The Influence of decision style on decision making behavior. *Management Science* 26:4, 371-386.
- Miles, R.E. & Snow, C.C. (1978). *Organizational Strategy Structure, and Process*. New York: McGraw-Hill.
- Mitroff, I.I. & Kilmann, R.H. (1975). Stories managers tell: a new tool for organizational problem solving. *Management Review*, July, 18-28.
- Myers, I.B. & McCaulley, M.H. (1990). *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologist Press, Inc.
- Nutt, P.C. (1986). Decision style and strategic decisions of top executives. *Technological Forecasting and Social Change* 30, 39-62.
- Sun, Tzu (1971). *The Art of War* (S. B. Confitt translation). New York: Oxford University Press.
- Volkema, R.J. & Gorman, R.H. (1998). The Influence of cognitive-based group composition on decision-making process and outcome. *Journal of Management Studies* 35:1, 105-120.

MANAGERS AND STRATEGIC DECISIONS: DOES THE COGNITIVE STYLE MATTER?

Tiina Gallén

Abstract

Purpose - *The purpose of this paper is to find out that does the cognitive style of the manager affect his view of the viable strategy for a firm.*

Design/methodology/approach - *Using data from 70 managers in the spa industry this study concludes that managers' cognitive style and particularly their way of taking in information (sensing or intuition) has effect on strategies they tend to prefer. Intuitive managers tend to view the prospector or the analyzer strategy as the most viable future alternative for a firm. The analyzer or the defender strategy is preferred by the sensing managers.*

Originality/value - *For managers, the results of this study emphasize the importance of knowing oneself and especially one's way of perception and understanding its suggested effect on the strategic decision making. This paper also attempts to inspire researchers to include the cognitive style in studying the effects of the managers and top management team on firm's strategy.*

Keywords: *Decision making, Cognition, Managers, Strategic management, Management styles*

Paper type *Research paper*

Introduction

"When executives create strategy, they project themselves and their organizations into the future, creating a path from where they are now to where they want to be some years down the road" (Luehrman 1998)

Managers have been criticized because of their inability or unwillingness to consider the variety of strategic options open to the company (e.g. Johnson & Scholes 1993: 201). One reason for this limited way of thinking is alleged to be the personality of the manager (e.g. Gallén 1997; Nutt 1986; Miller & Toulouse 1986). As Hambrick, Geletkanycz & Fredrickson (1993: 402) put it, some executives are

only interested in "what is" while others are more able to accept new untested ideas about "what might be". The present paper attempts to extend the knowledge of the manager-strategy relationship by studying how managers with different cognitive styles see the viable strategy for a firm.

In past research, different CEO profiles have been connected with different strategy types. Wissema, van der Pol and Messer (1980) described types of managers corresponding to six strategy types. Miller, Kets de Vries and Toulouse (1982) found support for the idea that an executive's personality has an effect on his strategy making. More recently, Papadakis, Lioukas and Chambers (1999) also arrived at results which support the idea that, in addition to demographic characteristics, the CEO personality is connected with aspects of the strategic decision-making process.

Similarly, Carpenter, Geletkanycz and Sanders (2004) discuss the use of personality variables in their review of the studies dealing with the upper echelons perspective. The upper echelons perspective, originally described by Hambrick and Mason (1984), is also extended by incorporating the role of context (Carpenter et al. 2004). In this study, the effect of the contextual factors will be considered in the discussion and conclusions chapter.

In order to understand manager-strategy relationship better, this study presents and tests a model in which managers' cognitive styles (or decision making styles) and their strategy choices are combined. The point is that when you know the cognitive styles of managers, you can assume that their processes of strategic decision-making are different if their perception and judgment are different from each other. But do they also prefer some strategies to others?

This paper is divided into three sections. After a short theoretical review, data derived from 70 managers from 13 different spas will be analyzed in order to find out if there are consistent differences in the views of viable strategies between managers with different cognitive styles. Qualitative data will be put in quantitative form in order to be able to test the propositions. The article finishes with discussion and conclusions.

Combining cognitive style and the view of viable strategy

Jungian psychological types have been widely used in studies of the decision-making styles of managers (e. g. Henderson & Nutt 1980; Stumpf & Dunbar 1991). In theory, everyone favors or rather naturally adopts either of the alternatives in functions S (sensing) or N (intuition) and T (thinking) or F (feeling). If

one prefers sensing (S) to intuition (N) and thinking (T) to feeling (F), his cognitive style is ST (sensing-thinking). In this way, four cognitive styles (ST, SF, NT and NF) can be identified (Myers, McCaulley, Quenk & Hammer 1998). The use of MBTI (Myers Briggs Type Indicator) as a measure of Jungian personality dimensions has received sufficient support to be adopted in this connection (e.g., Gardner & Martinko 1996; Myers et al. 1998; Rosenak & Shontz 1988).

According to Miles and Snow (1978), organizations see what they want to see in the external environment and can be proactive in dealing with it. Management's strategic choices are found to shape an organization's structure and process. Their typology has received support in a wide variety of studies (e.g., Conant, Mokwa & Varadarajan 1990; Dvir, Segev & Shenar 1993; Hambrick 1981; Miller 1996). The typology consists of three generic strategies, defender, prospector and analyzer, and one "residual", reactor strategy. Prospectors have typically a very broad product-market domain and are "first-to-the-market". Defenders offer a stable set of products or services and compete primarily on the basis of value and/or cost. Analyzers have characteristics of both the defender and the prospector: they pursue a "second-in" strategy. Reactors have made inconsistent entrepreneurial, engineering and administrative choices. Next, different cognitive styles are combined with strategy types described by Miles and Snow (1978).

The ST (sensing-thinking) type and defender strategy

According to MBTI theory (Myers et al. 1998: 40-41), ST people focus their attention on facts which can be collected and verified directly by the senses. They use nonpersonal analysis and are practical and matter-of-fact. According to Haley and Pini (1994), they typically use problem-solving models that have worked in the past. Regularity, structure, and "fit" with standard practices form the basis for their decisions.

Mitroff and Kilmann (1975) found that ST people's ideal organization would be bureaucratic with centralized, well-defined authority. Similarly, Miles and Snow's (1978: 31-48) defender organization tends to be functionally structured and have centralized control. ST people (Henderson & Nutt 1980; Nutt 1986; Nutt 1990) as well as defenders are usually risk-averse. The ST component of organizational effectiveness is achieved by internal efficiency (Kilmann & Herden 1976), which is quite similar to that of defenders, who measure efficiency (Miles & Snow 1978: 46). Rogers, Miller and Judge (1999) also found that defenders focus their information processing on critical internal efficiency information. According to Miles and Snow (1978), the dominant coalition of defenders has typically powerful members who are production or financial experts. Production and finance are areas which STs are interested in too (Myers et al. 1998).

Based on similarities between ST type and defender organization, the following proposition is made:

Proposition 1. ST managers tend to view defender strategy as the most viable strategy type.

The NF (intuition-feeling) type and prospector strategy

The enthusiastic and insightful NF types focus their attention on possibilities (Myers et al. 1998: 42-43). New projects typically interest them and they also feel attracted by things that have never happened but might be made to happen. In decision-making, they may ignore practical things but seek information from symbols, imaginary and metaphors. Their decisions are based on associations with similar experiences or their vision of the future (Haley & Pini 1994).

The prospector is at the other end of the continuum compared with the defender; similarly, the NF (intuition-feeling) type is the opposite of the ST (sensing-thinking) type. The NF type's ideal organization is flexible, adaptive and personally idealistic (Mitroff & Kilmann 1975); the heroes of NF organization lay down new broad outlines. Similarly, prospectors value the development of new products (Miles & Snow 1978: 49-67). Decentralization is popular in the NF type's ideal organization (Mitroff & Kilmann 1975) and with prospectors (Miles & Snow 1978: 49-67). Performance is measured against important competitors by prospectors (Miles & Snow 1978: 64), and in terms of external effectiveness in NF organization (Kilmann & Herden 1976). Prospectors value information of all types (Rogers et al. 1999). Marketing is valued by both NF types (Myers et al. 1998) and prospectors (Miles & Snow 1978; McDaniel & Kolari 1987; Segev 1987). Hence, the following proposition is made:

Proposition 2. NF managers tend to view prospector strategy as the most viable strategy type.

The NT (intuitive-thinking) type and analyzer strategy

Intuitive-thinking (NT) types focus on possibilities, theoretical relationships and abstract patterns but use a nonpersonal, cause-and-effect perspective when judging (Myers et al. 1998: 43-44). Logical and ingenious NT types as managers may ignore cases that negate their beliefs, may resort to quick, superficial studies and persevere in beliefs despite contradictory evidence (Haley 1997). In decision-making, they use logical categorization based on their conceptual pattern (Haley & Pini 1994).

The NT type's ideal organization is matrix-structured (Mitroff & Kilmann 1975), which is also suggested to be well suited to an analyzer (Miles and Snow 1978: 68-80). New product development is found important by NTs (Kilmann & Herden 1976) as well as by analyzers who try to quickly imitate and improve upon the product offerings of their competitors (Miles & Snow 1986). Like analyzers, NT types may not be the first change agents because their thinking function may restrict their wildest ideas. Based on similarities between NT types' ideal organization and analyzer strategy the following proposition is made:

Proposition 3. NT managers tend to view analyzer strategy as the most viable strategy type.

The SF (sensing-feeling) type and reactor strategy

SF types focus their attention on facts. However, because they use feeling for purposes of judgment, they approach decisions with a subjectivity that is based on their personal value system (Myers et al. 1998: 41). Their abilities can be best used in areas such as in selling tangibles, teaching or nursing. Haley and Pini (1994) found that opinions of specific people are important for them when making decisions. SF types base their decision on what people in a given situation need or want.

According to Henderson and Nutt (1980), SF executives are more risk tolerant than others. Their ideal organization is familiar and personally idealistic (Mitroff & Kilmann 1975). Stumpf and Dunbar (1991) found that SF types' actions tend to conform to what is socially approvable, satisfying the desires of others. Since SF types concentrate on organizational effectiveness through internal effectiveness, SFs may fail to take environmental changes in strategy formulation into account (Kilmann & Herden 1976). Likewise, reactor strategy may be a consequence of not taking the changes in organizational environment into consideration (Miles & Snow 1978: 81-93). Based on these characteristics, the following proposition is suggested:

Proposition 4. SF managers tend to view reactor strategy, if any, as the most viable strategy type.

Overall, the aim of this study is to shed some more light on the manager-strategy relationship. The proposed relationships are presented in Figure 1. Next, managers' views of the viable strategies are analyzed in order to discover the main characteristics of their strategy views. Qualitative data is put in quantitative form by coding. Based on the results, preliminary testing of the propositions is done. Fi-

nally, some examples, which describe how managers with different cognitive styles define different strategy types, are presented.

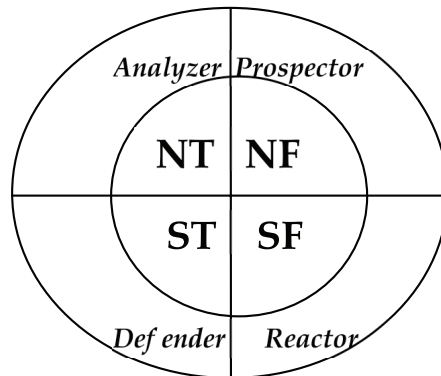


Figure 1. Proposed model of the relationship between cognitive style and strategy type (Gallén 1997)

Methodology

Industry

According to Segev (1989), Porter's typology (1980) focuses mainly on more concentrated industries with larger business units. On the other hand, Miles and Snow's typology focuses on industries with more competitors (Segev 1989). This was taken into consideration when the spa industry was selected for the study. The next criterion was that there should be enough large number of SMEs with the functioning top management team. As previously (e.g. Haleblan & Finkelstein 1993; Ng & Khatri 2000), the role of the senior management in strategic issues is emphasized. Finally, availability was an essential factor in choosing the process.

In order to minimize the effects of the industry, all the data was collected from managers working in the spa industry. In a similar vein, Judge and Miller (1991) preferred concentration on a single industry in the studies of the strategic decision making processes.

Sample

CEOs from 39 companies in the spa industry (spa hotels, entertainment spas, health spas) were contacted by mail and then by phone. They were given a short description of the study and asked if their company was willing to participate. 33 % of them (13 companies) gave a positive answer. The sample can be considered

to be sufficiently representative with regard to size distribution (table 1). Spas of all different size categories, big, medium and small, are represented in the sample. Size classification was made based on the water area of the pools and the number of saunas, rooms and customer seats in the restaurants. Perceptual size distribution (table 1) is also quite similar compared with the industry study which was presented in 1993.

Table 1. Size distributions of the spas

The size of the spa	The industry study		This study	
Big	6	(21%)	2	(15%)
Medium	11	(38%)	4	(31%)
Small	12	(41%)	7	(54%)
	29	(100%)	13	(100%)

Usable data was received from 70 members of the top management teams. Typically, the members represented very different areas of expertise. Their ages varied from 30 to 64, and 43% of all respondents belonged to the age group 41-50. Half of them (51%) had college degrees and 14% had university degrees. The most typical field of education (44%) was commercial; the second was hotel and restaurant business (21%) and the third health care (20%).

Data collection

The data was collected by arranging a meeting for the top management team in every spa. First, the members of the top management team were asked to fill in the MBTI form. Then all the respondents got a short description of the exercise and a blank piece of paper. They were asked to describe what kind of strategy a company should pursue in the spa industry in order to succeed in the future. They were particularly asked to consider what kind of services should be available, to whom they would be offered, and what opportunities or threats there might be. These additional questions were asked because it has been found that when executives discuss strategy they do so more in terms of quality, modernization, ethics or other themes than in terms of product/market change, the key dimension of the Miles and Snow typology (Hambrick 1982).

It was emphasized that the researcher was interested in their views, and that there were no wrong or right answers. Emphasis was on the views regarding the future strategy because the respondents might not have been willing to criticize the strategy of their current employer. The same problem has been considered by other researchers too. As Mitroff and Kilmann (1975: 20) said: *"We have found that it is much easier for managers to talk or write a story about their ideal organization than about their current (or real) organization."* Naturally, the managers were guaranteed total anonymity. The length of the answers varied from a few words to three pages.

The data of the views of the viable strategies was collected in qualitative form for several reasons. First, it could be expected that the respondents would have very different kinds of knowledge and understanding of the word strategy (Hambrick 1982: 169). Hambrick (1982: 169) also emphasized the importance of being aware of the differences between "realized" and "intended" strategy. This problem was solved in the study by concentrating on the view of the viable strategy, which naturally meant more emphasis on the "intended" strategy. Second, the data was collected in this way because the descriptions were restricted to four strategy types and influence by the researcher's own ideas was attempted to be avoided. The use of questionnaires in strategy research has also been questioned by Ireland, Hitt, Bettis and de Porras (1987).

Criteria for judging the quality of the research design are construct, internal and external validity and reliability (Yin 1991: 40-45). These were taken into consideration during the research process. Especially reliability issues were emphasized in this study. According to Insch, Moore and Murphy (1997), consistency of accurate classification should be verified by assessing reproducibility (interrater) reliability and stability reliability (test-retest by the same coder). The data was first analyzed in the summer of 1997 and later in the autumn of 1998. Between these analyses, some of the data, 16 descriptions covering all the four cognitive styles and strategy types, were also analyzed by a colleague. The classifications were discussed and modified based on these discussions.

Later, based on previous peer review nine challenging cases were selected from the data and another colleague analyzed them using information of Miles and Snow (1978) typology from this paper. Cases were selected so that there were three answers from ST and NT managers, two from NF managers and one from SF manager. All three strategy types (3 prospectors, 4 analyzers and 2 defenders) were also included.

The analysis made by the colleague was compared to that made by the researcher (see also Jago & Vroom 1980). Only three cases conformed to researcher's analy-

sis. However, they represented different cognitive styles (ST, NT and NF) and different strategy types. In other cases, there were differences in classification between analyzer and prospector (four cases) or between analyzer and defender (two cases). Based on this, classifications were discussed and better-explained and final reproducibility was eight of nine cases.

MBTI and description of the data

In this study, decision making style was measured by the Myers-Briggs Type Indicator using 166-item forced choice questionnaire (Form F). The Finnish version has been translated and validated by the professor Routamaa's research team at the University of Vaasa (e.g. Järnlström 2000). Because the data was collected in the research setting, the respondents received a feedback of the type on paper by mail. The feedback consisted of four pages describing the idea of the MBTI and their own type description. In addition to that, they were asked to contact the researcher if they disagreed with their type description. Specially those respondents, who had received low scores (7 points or under that) on one dimension, were asked to consider their type descriptions carefully (see also Järnlström 2002).

Eight respondents contacted the researcher and they were sent the questions measuring the uncertain dimension to be filled in again. Based on these new results, the type descriptions of these eight respondents were changed. The cognitive style differed from the original results in five cases. One ST type was altered to an intuitive-thinking type, one SF type to a sensing-thinking type, one SF type to an intuitive-thinking type, one SF type to an intuitive-feeling type and one NF type to an intuitive-thinking type.

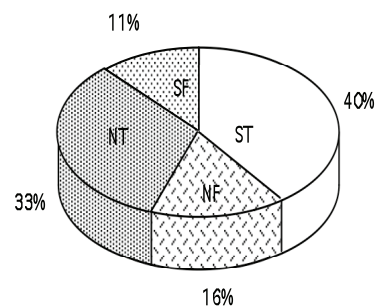


Figure 2. The Cognitive styles of the respondents

Because psychological type is considered to be universal (Myers et al. 1998), it could be expected that the cognitive style of most managers would be ST or NT based on the study made by Haley and Pini (1994). In their data concerning US managers, 13% had NF as a cognitive style, 37% NT, 40% ST and 10% SF. The distribution of cognitive styles of 111 Finnish managers was similar: 52 % STs, 25 % NTs, 13 % NFs and 10 % SFs (Asikainen & Routamaa, 1997). The results indicated that in this study there were 28 ST managers, 23 NT managers, 11 NF managers and 8 SF managers. The perceptual distribution is presented in the Figure 2.

Analysis

The answers were first read through in order to get an overall picture of the contents. When the reading was done for the second time, the important themes and statements were identified (Easterby-Smith, Thorpe & Lowe 1991: 104-108). Based on this, the descriptions of different strategy types were modified to correspond to the situation in the spa industry. Next, the different strategy types will be briefly described the way they came out in this study. Then propositions are evaluated and some examples of the qualitative data are presented.

According to Miles and Snow (1978), typical defenders have a narrow product market domain and their product development is a simple extension of the current product line or expansion into closely related areas. In this data, it meant concentration on basic services (hotel, restaurant and spa business) with some expansion into additional services (for example hairdressing and beauty treatment). They wanted to offer segmented groups of people service packages which include a full range of services. Price and quality were emphasized and in some answers the way of thinking was that "in the future things are going to be like in the past". Service was an important competitive means for the defenders.

Search for new market opportunities is a characteristic of the prospector, the creator of change (Miles & Snow 1978). Growth is achieved through the location of new markets and the development of new products. Marketing, research, development and flexibility are important for prospectors, who were easily identified from this data too. Those who were classified as prospectors typically mentioned "many-sided services", the importance of figuring out new services and "offering memorable experiences". They also found know-how to be an important thing in the future. Some of the answers included expression like "the best" or "the fast ones win the slow ones".

Analyzers showed characteristics of both defenders and prospectors. They wanted to offer, in addition to basic services, some changing extra services but empha-

sized quality and cost more than prospectors. They found marketing and co-operation to be important. Somehow, their answers were more careful compared with prospectors. They wanted to have financial security based on basic products and to be followers of change. Some of the answers also referred to co-operation with competitors.

Using these descriptions, answers were classified as defenders, analyzers or prospectors. So the unit of analysis was the whole document (Insch et al. 1997). As well as in some other studies, it was found to be impossible to identify reactors because reactors' inconsistent strategic behavior was supposed to be identified only in practice. Based on this analysis, 32 analyzers, 25 defenders and 13 prospectors were identified. The results are presented in table 2.

Table 2. The cognitive style and the view of the viable strategy: results

	NT	NF	ST	SF	<i>Totals:</i>
Analyzer	48 % (11)	45 % (5)	43 % (12)	50 % (4)	46 % (32)
Defender	9 % (2)	27 % (3)	57 % (16)	50 % (4)	36 % (25)
Prospector	43 % (10)	27 % (3)	0 % (0)	0 % (0)	19 % (13)
<i>Totals:</i>	100 % (23)	100 % (11)	100 % (28)	100 % (8)	

According to proposition 1, ST managers tend to choose a defender like strategy. This proposition is verified by the analysis: 57 % of the managers described defender like strategy as a viable future choice (table 2). However, 43 % of the managers' view was analyzer like. Interestingly, not even one ST manager's view of viable strategy represented the prospector. This finding is consistent with the ST managers' unwillingness to take risks (Henderson & Nutt 1980).

Typical expressions that ST managers used when they described defender strategy were:

"... spas should concentrate on hotel business because it is the most profitable..."

"... try to offer good service to present customers..."

"... increase in the cost level is a threat..."

"... there is a risk that the state will not support the services anymore..."

Sensing-thinking (ST) managers who found the analyzer strategy a way to success in the future used expression such as:

"... the key word is specialization - in addition to the basic services we need to offer something special and new..."

"... many-sided traditional rehabilitation services and also some more fashionable services..."

NF managers' proposed tendency to choose prospector strategy can not be confirmed because only 27 % were classified as prospectors and the same number as defenders too. Most NF managers regarded analyzer strategy as the most viable future option (table 2). In spite of the fact that this result is not according to proposition 2, the result is in line with the results of NF types' risk-taking behavior (Henderson & Nutt 1980).

Those NF managers who chose defender strategy wrote for example:

"... we will survive by providing the same friendly and good services as before..."

"... strategy is to keep your position in the market..."

Analyzer strategy was defined by NFs using expressions such as:

"... we have to find our own line of services in the spa industry..."

"... a threat is that we do not have enough marketing..."

Prospectors were described as follows:

"... in the future I believe that spas have to offer more and more experiences to customers..."

"... we have to create the demand..."

"... we need managers who have visions and knowledge of the spa industry..."

In proposition 3, it was supposed that NT managers would choose analyzer strategy, which was found to be true of 48 % of managers while 43 % of NT managers chose prospector strategy. Based on these results, the using of intuition (N) for perceiving can be seen more often than expected. That may be one explanation

for the fact that so many NT managers described prospector strategy as the most viable one.

Analyzer strategy was described by NT managers in following ways:

"... cost efficiency is an important thing when producing services..."

"... have to be able to create a picture of a dynamic company which is also considered safe by the customers..."

"... with good planning and vision, reasonable marketing and development..."

NT managers whose descriptions were classified as typical of the prospector used words such as:

"... unique services and possibilities of trying new things..."

"...have to be best in Europe..."

"... quick ones beat slow ones..."

"... a threat is a too narrow strategy..."

The smallest group of managers, 8 sensing-feeling (SF) types, chose defender or analyzer strategy (table 2). Like the ST types, none of them chose prospector strategy. Proposition 4 cannot be tested based of this data because of inability to identify reactors in this study. However, it seems that their views of the viable strategy are quite similar to ST managers' views.

SF managers who described the defender strategy wrote as follows:

"... constant product development with the old customers - especially concentrating on quality..."

"... to choose two main customer groups, analyze their demands and wishes and check that our services fulfill their demands and wishes..."

Analyzer strategy was in SF managers' words commented on like this:

"... the basic services will remain the core of the business but going to new areas is also important..."

"... overcapacity, the price level and hygiene are threats..."

On the whole, results support both sensing types' (ST and SF) concentration on the present moment (Myers et al. 1998). Their view of the viable strategy is either defender or analyzer strategy. ST managers' concentration on internal efficiency was not so clear in this study. However, comments, which included remarks about quantity and quality issues, were in that direction.

More future-oriented intuitive types' (NT and NF) views of the viable strategies also included the third strategy type, the prospector, which can be explained by the fact that they use intuition for perceiving. One explanation for the NF types choosing the defender strategy might be the fact that both feeling types (NF and SF) try to take into account the effects of decision at hand on the people involved and on what is important to them (Myers et al. 1998: 25).

In order to find out if the differences in contingency table (Table 2) are significant, chi-square test was used. The chi-square test is one useful way of examining differences or associations between groups (e.g. Easterby-Smith et al. 1991: 129). However, because the expected frequency is less than 5 in more than 20 % of the cells, chi-square test can be considered to be inappropriate when the cognitive style is considered. When the relationship between the way of perception (S or N) and the view of the viable strategy is studied, chi-square test can be used (Table 3).

Table 3. Coded Chi-Square test of the relationship between the way of perception (S/N) and the view of the viable strategy

	The way of perception
DF:	2
Total Chi-Square:	21,9608
Significance level:	0,0001
Contingency Coefficient:	0,4887

A significant result is that intuitive types (N) tend to choose analyzer or prospector strategy (table 3). On the other hand, sensing types (S) tend to choose defender strategy (in analyzer strategy observed value is less than expected value). In summary, this study supports more the effect of way of perception than the whole cognitive style on strategic decisions.

Discussion and conclusions

The proposed relationships between managers' cognitive styles and their views of the viable strategies were examined in this paper. As well as in many other studies (e.g. Brouthers, Brouthers & Werner 2000; Hambrick et al. 1993), the data in this study were examined at the individual manager level. Qualitative answers from 70 managers in the spa industry were classified so as to correspond strategy types (defender, prospector and analyzer) identified by Miles and Snow (1978).

As expected, ST managers typically described defender strategy as the most viable future option (proposition 1). Proposition 2 cannot be confirmed because NF types chose analyzer strategy more often than prospector strategy. As it was proposed, NT managers tended to describe most often analyzer strategy. Because reactor strategy was not able to be identified, proposition 4 was not studied. Due to quite small sample size, these results can be considered preliminary.

On the whole, results indicated that intuitive (N) types preferred analyzer or prospector strategies and sensing (S) types defender or analyzer strategies. This means that the ways of perception (S/N) are more important than the ways of judgment (T/F) when decisions about viable future strategy are made. The result was consistent with the proposition that a strong past or present orientation may lead to defender-type strategy and future orientation to prospector strategy (Bateman & Zeitham 1989). In a similar vein, other researchers (e.g. Herbert & Deresky 1987; Thomas et al. 1991; Wissema et al. 1980) have found that different CEO profiles are associated with different strategy types.

As well in the upper echelons' perspective (Hambrick & Mason 1984) as in some other studies (e.g. Rajagopalan & Datta 1996; Thomas et al. 1991; Tyler & Steensma 1998), age and the field of education has been proposed to be among the demographic characteristics which explain differences in strategic decisions. However, the data revealed by this study did not support these ideas. There seemed to be no interdependence between the view of the viable strategy and age or field of education. As Hambrick and Mason (1984) mentioned, studying only observable characteristics might not be enough. In addition to demographic factors, psychological aspects must also be studied (Priem, Lyon & Dess 1999).

Hurst, Rush and White (1989) combined the dominant function (iNtuition, Sensing, Thinking or Feeling) with the strategy types which were modified from the Miles and Snow (1978) typology. They concluded that their proposed relationships require more empirical studies. However, the results of this study indicate that manager's way of perception (sensing or intuition) is more promising factor in understanding the differences in strategic decisions. In addition to that, this

study extends the concept of demographic characteristics of managers used in the stylized model of upper echelons perspective (Carpenter et al. 2004).

As regards Miles and Snow's (1978) typology, this study supported its use in strategy research despite some contrary comments about its applicability in studying managers' own views of strategy (Hambrick 1982). However, more studies of different strategy types in today's business world are needed. It would be interesting to know for example how strategy types differ from each other in networking and co-operation with other companies. Further research would also be needed to shed more light on concepts like balancer strategy (e.g. Parnell 1998) or renewing organizations (Hurst et al. 1989) - do these types really exist or are they after all some forms of the basic strategy types?

In practice, understanding the differences which are connected with the views of strategies is important when members of the top management team are replaced by new ones. It has been found that leaders tend to "clone" themselves when they think about qualities required from their successors (Hambrick et al. 1993). In order to promote change in an organization's strategy, it might be necessary to consider a successor's personality too: sometimes a sensing (S) manager may be replaced by an intuitive (N) manager for example (see also Tyler & Steensma 1998: 960). MBTI can also be used to help managers to better understand different management styles (Martin 1997: 54).

The field of management education might also have benefit from the results of this study. According to Skinner, Tagg and Holloway (2000), managers typically use quantitative techniques when they gather information for example for planning or problem solving. However, qualitative methods could offer a more rich and depth understanding of complex issues. In addition to the support managers need in putting these methods into action (Skinner et al. 2000), increasing self-understanding and awareness of manager-strategy relationship could help managers to consider strategic decisions from different viewpoints.

One limitation in this study was the existence of the "common body of knowledge" (Hambrick 1982) or "industry wisdom" (Hambrick et al. 1993). It was difficult to distinguish the manager's personal view from the industry wisdom that may have partly guided the answers. In the spa industry, the "common body of knowledge" was expressed for example by saying that spas should have segmented markets. However, in practice, managers defined so many market segments that they covered the whole population. Another example could be differentiation which according to common wisdom would be needed in the spa industry. There was an attempt to avoid this limitation by concentrating on the overall picture of the answers instead of on separate words. In a similar vein, the exis-

tence of the industry wisdom has been pointed out in the past studies (e.g. Hambrick 1982; Hambrick et al. 1993).

Another limitation is due to the fact that the data were collected from a single industry (e.g. Boeker 1997). However, as stated earlier, psychological type is considered to be universal (Myers et al. 1998), so the restricted source of data should not cause serious problems to generalization because all the cognitive styles were presented. Of course, the amount of data makes it risky to generalize results too widely. There is also some disagreement about using MBTI in measuring psychological type and cognitive style (Pittenger 1993). It must be remembered that MBTI is a self-measurement tool and that only the person himself can validate the result.

In this study, the effect of the contextual factors were tried to minimize by collecting the data from one industry and asking the managers to describe their view of the viable strategies. However in practice, contextual factors play an important role in the strategic choice process (e.g. Carpenter et al. 2004). Environmental as well as organizational context is important. The importance of the contextual factors (e.g. power or political climate) increases when the effect of the manager's way of perception on strategy is studied in the top management team level. That could be a natural extension from this study in the future.

However, opposite to the results from the U.S. context (Hitt & Tyler 1991), Brouthers et al. (2000) found that managerial characteristics play a bigger role than environmental characteristics in decision making in the Dutch context. According to them, this might be because of cultural differences, methodological or industry differences. When the possibility to generalize the results of this study is concerned, the same differences should be remembered and more studies are needed in order to make the results more reliable.

As regards the views of the viable strategies, more information and from different industries is needed. Qualitative data collecting seemed to be a promising tool in this connection even though there is always the problem of interpretation. In the future, it would be interesting to see how the composition of the top management team affects their view of the viable future strategy. When the development of the management team is considered, it would be valuable to know the cognitive style of the participants and in that way to understand their tendency to prefer certain kinds of choices. Naturally, it would be interesting to study how the cognitive composition of the top management team affects firm's performance.

In short, as Isabel Myers (1998) stated, the MBTI instrument was developed for "constructive use of differences" and hopefully will serve that mission also in business and strategy research in the future.

References

- Asikainen, V. & Routamaa, V. (1997). The relationship between the MBTI and the creativity orientations of managers. *Proceedings of the Leadership and Myers-Briggs Type Indicator*. Second international research conference, Washington, 2-4 April 1997, USA.
- Bateman, T.S. & Zeithaml, C.P. (1989). The Psychological context of strategic decisions: A Model and convergent experimental findings. *Strategic Management Journal* 10:1, 59-74.
- Boeker, W. (1997). Strategic change: The influence of managerial characteristics and organizational growth. *Academy of Management Journal* 40:1, 152-170.
- Brouthers, K.D., Brouthers, L.E. & Werner, S. (2000). Influences on strategic decision-making in the Dutch financial services industry. *Journal of Management* 26:5, 863-884.
- Carpenter, M.A., Geletkanycz, M.A. & Sanders, Wm.G., (2004). Upper echelons research revisited: antecedents, elements, and consequences of top management team composition. *Journal of Management* 30:6, 749-778.
- Conant, J.S., Mokwa, M.P. & Varadarajan, P.R. (1990). Strategic types, distinctive marketing competencies and organizational performance: A Multiple measures-based study. *Strategic Management Journal* 11:5, 365-383.
- Dvir, D., Segev, E. & Shenhar, A. (1993). Technology's varying impact on the success of strategic business units within the Miles and Snow typology. *Strategic Management Journal* 14:2, 155-162.
- Easterby-Smith, M., Thorpe, R. & Lowe, A. (1991). *Management Research: An Introduction*. London: Sage.
- Gallén, T. (1997). The Cognitive style and strategic decisions of managers. *Management Decision* 35:7, 541-551.
- Gardner, W.L. & Martinko, M.J. (1996). Using the Myers-Briggs Type Indicator to study managers: a literature review and research agenda. *Journal of Management* 22:1, 45-83.
- Haleblian, J. & Finkelstein, S. (1993). Top management team size, CEO dominance, and firm performance. *Academy of Management Journal* 36:4, 844-863.

Haley, U.C.V. (1997). The MBTI and decision-making styles: Identifying and managing cognitive trails in strategic decision-making. In Fitzgerald, C. and Kirby, L. K. (eds), *Developing Leaders: Research and Applications in Psychological Type and Leadership Development*. Davies-Black, CA: Palo Alto, 187-223.

Haley, U.C.V. & Pini, R. (1994). Blazing international trails in strategic decision-making research. *Conference Proceedings: The Myers-Briggs Type Indicator and Leadership*. An International Research Conference, January 12-14.

Hambrick, D.C. (1981). Environment, strategy and power within top management teams. *Administrative Science Quarterly* 26:2, 253-276.

Hambrick, D.C. (1982). Environmental scanning and organizational strategy. *Strategic Management Journal* 3:2, 159-174.

Hambrick, D.C., Geletkanycz, M.A. & Fredrickson, J.W. (1993). Top executive commitment to the status quo: some tests of its determinants. *Strategic Management Journal* 14:6, 401-418.

Hambrick, D.C. & Mason, P.A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review* 9:2, 193-206.

Henderson, J.C. & Nutt, P.C. (1980). The Influence of decision style on decision making behavior. *Management Science* 26:4, 371-386.

Herbert, T.T. & Deresky, H. (1987). Should general managers match their business strategies? *Organizational Dynamics* 16:3, 40-51.

Hitt, M.A. & Tyler, B.B. (1991). Strategic decision models: integrating different perspectives. *Strategic Management Journal* 12:5, 327-351.

Hurst, D.K., Rush, J.C. & White, R.E. (1989). Top management teams and organizational renewal. *Strategic Management Journal* 10, Special Issue, 87-105.

Inch, G.S., Moore, J.E. & Murphy, L.D. (1997). Context analysis in leadership research: examples, procedures, and suggestions for future use. *Leadership Quarterly* 8:1, 1-25.

Ireland, R.D., Hitt, M.A., Bettis, R.A. & DePorrás, D.A. (1987). Strategy formulation processes: differences in perceptions of strength and weaknesses indicators and environmental uncertainty by managerial level. *Strategic Management Journal* 8:5, 469-485.

Jago, A.G. & Vroom, V.H. (1980). An Evaluation of two alternatives to the Vroom/Yetton normative model. *Academy of Management Journal* 23:2, 347-355.

Johnson, G. & Scholes, K. (1993). *Exploring Corporate Strategy. Text and Cases*. 3rd edition. Cambridge: Prentice Hall.

Jugde, W.Q. & Miller, A. (1991). Antecedents and outcomes of decision speed in different environmental contexts. *Academy of Management Journal* 34:2, 449-463.

Järnlström, M. (2000). Personality preferences and career expectations of Finnish business students. *Career Development Journal* 5:3, 144-154.

Järnlström, M. (2002). Organizational employment versus entrepreneurship: the personality approach to business students' career aspirations. *Journal of Business and Entrepreneurship* 14:1, 103-123.

Kilmann, R.H. & Herden, R.P. (1976). Towards a systematic methodology for evaluating the impact of interventions on organizational effectiveness *Academy of Management Review*, July, 87-98.

Luehrman, T.A (1998). Strategy as a portfolio of real options. *Harvard Business Review*, September-October, 89-99.

Martin, C. (1997). *Looking at Type: the Fundamentals*. Gainesville: Center for Applications of Psychological Type.

McDaniel, S.W. & Kolari, J.W. (1987). Marketing strategy implications of the Miles and Snow strategic typology. *Journal of Marketing* 51:4, 19-30.

Miles, R.E. & Snow, C.C. (1978). *Organizational Strategy Structure, and Process*. New York: McGraw-Hill.

Miles, R.E. & Snow, C.C. (1986). Organizations: New concepts for new forms. *California Management Review* XXVIII:3, 62-73.

Miller, D. (1996). Configurations Revisited. *Strategic Management Journal* 17:7, 505-512.

Miller, D., Kets De Vries, M.F.R. & Toulouse, J. (1982). Top executive locus of control and its relationship to strategy-making, structure, and environment. *Academy of Management Journal* 25:2, 237-253.

Miller, D. & Toulouse, J. (1986). Chief executive personality and corporate strategy and structure in small firms. *Management Science* 32:11, 1389-1409.

Mitroff I.I. & Kilmann, R.H. (1975). Stories managers tell: a new tool for organizational problem solving. *Management Review*, July, 18-28.

Myers, I.B., McCaulley, M.H., Quenk, N.L. & Hammer, A.L. (1998). *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. 3rd edition. Palo Alto, CA: Consulting Psychologist Press, Inc.

- Ng, H.A. & Khatri, N. (2000). The role of intuition in strategic decision making. *Human Relations* 53:1, 57-87.
- Nutt, P.C. (1986). Decision style and strategic decisions of top executives. *Technological Forecasting and Social Change* 30, 39-62.
- Nutt, P.C. (1990). Strategic decisions made by top executives and middle managers with data and process dominant styles. *Journal of Management Studies* 27:2, 173-194.
- Papadakis, V.M., Lioukas, S. & Chambers, D. (1998). Strategic decision-making processes: the role of management and context. *Strategic Management Journal* 19:2, 115-147.
- Parnell, J.A. (1998). Performance's influence on strategic change: a longitudinal assessment. *Scandinavian Journal of Management* 14:1, 19-36.
- Pittenger, D.J. (1993). The Utility of the Myers-Briggs Type Indicator. *Review of Educational Research* 63:4, 467-488.
- Porter, M. E. (1980). *Competitive strategy*. Ney York: Macmillan Publishing Co.
- Priem, R., Lyon, D., & Dess, G. (1999). Inherent limitations of demographic proxies in top management team heterogeneity research. *Journal of Management* 25:6, 935-953.
- Rajagopalan, N. & Datta, D.K. (1996). CEO characteristics: does industry matter? *Academy of Management Journal* 39:1, 197-215.
- Rogers, P.R., Miller, A. & Judge, W.Q. (1999). Using information-processing theory to understand planning/performance relationships in the context of strategy. *Strategic Management Journal* 20:6, 567-577.
- Rosenak, C.M. & Shontz, F.C. (1988). Jungian Q-sorts: demonstrating construct validity for psychological type and the MBTI. *Journal of Psychological Type* 15, 33-45.
- Segev, E. (1987). Strategy, strategy-making, and performance in a business game. *Strategic Management Journal* 8:6, 565-577.
- Segev, E. (1989). A Systematic comparative analysis of two business-level strategic typologies. *Strategic Management Journal* 10:5, 487-505.
- Skinner, D., Tagg, C. & Holloway, J. (2000). Managers and research: The pros and cons of qualitative approaches. *Management Learning* 31:2, 163-179.
- Stumpf, S.A. & Dunbar, R.L.M. (1991). The effects of personality type on choices made in strategic decision situations. *Decision Sciences* 22:5, 1047-1069.

Thomas, A.S., Litschert, R.J. & Ramaswamy, K. (1991). The performance impact of strategy manager coalignment: an empirical examination. *Strategic Management Journal* 12:7, 509-522.

Tyler, B.B. and Steensma, H.K. (1998). The Effects of executives' experiences and perceptions on their assessment of potential technological alliances. *Strategic Management Journal* 19:10, 939-965.

Wissema, J.G., Van der Pol, H.W. & Messer, H.W. (1980). Strategic management archetypes. *Strategic Management Journal* 1, 37-47.

Yin, R.K. (1989). *Case Study Research: Design and Methods*. USA: Sage Publications.

TOP MANAGEMENT TEAM COMPOSITION AND VIEWS OF THE VIABLE STRATEGIES

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Abstract

Purpose - *The purpose of this paper is to form propositions about the relationship between the cognitive composition of the top management team and its view of the viable strategy for a firm.*

Design/methodology/approach - *The cognitive style of 58 members of ten top management teams were analyzed using MBTI and the strategy types based on Miles and Snow typology were defined using paragraph approach. Descriptive statistics were used in analysis.*

Findings - *Based on the data from ten top management teams in the spa industry this study proposes that the cognitive composition of the top management team affects the strategies they prefer. Further, it is proposed that intuitive-thinking top management teams prefer either prospector or analyzer strategy. Defender or analyzer strategy is preferred by sensing-thinking top management teams. Defining the composition of the top management team using the cognitive style is proposed to be more promising way to explain the homogeneity or heterogeneity of the team than traditional measures such as age or education in this context.*

Practical implications - *For the top management teams, the results of this study emphasize the importance of knowing the cognitive composition of the top management team and especially taking it into consideration in the strategic decision making.*

Originality/value - *This study extends existing research by proposing the relationships between the cognitive composition of the top management team and the strategy type and confirms some of the results of the previous studies concerning manager-strategy –relationship. This paper also attempts to inspire researchers to take the cognitive composition into consideration when studying the effects of the top management team on firm’s strategy.*

Keywords *Corporate strategy, personality, senior management*

Paper type *Research paper*

Introduction

Several studies have concentrated on top management teams (TMTs) and their influence over strategic decisions. The top management team’s effect on the

firm's performance, in particular, has been of ongoing interest to strategy researchers (Certo, Lester, Dalton & Dalton 2006; Koufopoulos, Zoumbos, Argyropoulou & Motwani 2008; Michel & Hambrick 1992). Many variables such as age (Auden, Shackman & Onken 2006), tenure (Carpenter 2002) or functional diversity (Hambrick, Cho & Chen 1996) have been used to analyze the composition of TMTs.

According to the upper echelons perspective (Hambrick & Mason 1984), TMTs, not individuals, are the key decision makers within an organization. Carpenter et al. (2004) reviewed numerous studies which have extended the upper echelons perspective and despite many interesting findings, they still recall new studies in which psychological characteristics are used to describe TMTs. In a similar vein Boal and Hooijberg (2001) suggest that researchers should focus their attention on the behavior and personality characteristics of leaders at the strategic apex instead of using demographic characteristics. However, very little research linking the psychological characteristics of an entire group of decision makers to the strategic-decision making process has been done (Leonard, Beauvais & Scholl 2005).

On an individual level, Jennings and Disney (2006) find that psychological type was less important than the characteristics of specific strategic situations in determining the design of the strategic planning process. On the other hand, Hough and Ogilvie (2005) find support for the assumption that cognitive style influences actual decision outcomes. In addition, the way a manager way of perceives situation has been found to have effect an effect on his or her view of a viable strategy (Gallén 2006).

At the group level, Kauer, Waldeck and Schäffer. (2007) study the effect of the TMT characteristics on strategic decision-making, and find that diversity of experience did not affect the speed of decision making. They found that personality factors, such as flexibility or an achievement motivation, had a clearer impact on decision speed. However, the effect of the cognitive composition of the TMT on strategic decisions is still widely unexplored, and linking the cognitive diversity of the TMTs to strategic outcomes has proved problematic (Pitcher & Smith 2001).

This paper aims to extend knowledge of the effect of the TMT on the firm's strategy. In addition to the demographic characteristics, this study concentrates on the importance of the cognitive composition of the TMT on strategy. It is suggested that the cognitive composition of the TMT especially influences its views of viable future strategy. The cognitive style of the TMT is defined based on the majority of the individual preferences in the team. The TMT's cognitive style is

combined with Miles and Snow typology (1978) which can still be considered as one of the most useful ways for senior managers to understand and respond to organizational challenges (Ghoshal 2003).

First, studies which combine cognitive styles at an individual level with Miles and Snow typology (1978) are reviewed. Next, previous studies linking TMT and strategy are described. Then the cognitive composition of the TMT is linked with Miles and Snow typology. After methods and analysis, propositions about the relationship of the composition of the TMT and strategy are formed using ten cases. Finally, conclusions and recommendations for future research follow.

Cognitive style and strategy types at an individual level

Cognitive style

One of the widely used ways to measure the personality of managers is the cognitive style (Lindblom, Olkkonen & Mitronen. 2008; Stumpf & Dunbar 1991). The cognitive style can be measured using Jung's theory of psychological types and the Myers Briggs Type Indicator (MBTI) (Gardner & Martinko 1996; Myers, McCaulley, Quenk & Hammer. 1998).

The MBTI produces four preference groups: Extraversion (E) versus Introversion (I), Sensing (S) versus iNtuition (N), Thinking (T) versus Feeling (F) and Judgment (J) versus Perception (P) (Myers et al., 1998). Theory states that individuals prefer one over another in each of the pairs, and based on this, 16 different personality types can be identified. However, as is typical in decision-making studies (e.g. Hough & Ogilvie 2005), the emphasis in this study is on the cognitive styles - meaning the processes of perception (Sensing or iNtuition) and the processes of judging (Thinking or Feeling). Four cognitive styles can be identified: sensing-thinking (ST), sensing-feeling (SF), intuition-thinking (NT) and intuition-feeling (NF).

STs tend to approach life and work in an objective and analytical manner (Martin 1997, 53). They are practical, logical and are typically interested in technical concerns (Kirby 1997, 10). SF types share the process of perception with ST types but prefer to use feeling during the process of judging. Sympathetic and friendly SF types like to focus on realities and pursue hands-on kinds of careers (Martin 1997, 53). NT types prefer intuition for the purpose of perception and thinking for the purpose of judgment. They focus on opportunities, theoretical relationships and abstract patterns and judge them from an impersonal, cause-and-effect perspective (Myers et al. 1998, 43-44). Warm and enthusiastic NFs like to focus on

ideas and possibilities (Martin 1997, 53). They value effective communication and usually focus on people in a more global way (Kirby 1997, 10).

Miles and Snow typology

Miles and Snow's (1978) organization typology has been cited in numerous scholarly works from all over the world (Ketchen 2003). It concentrates on strategies within one industry and is used for example to study banking (James & Hatten 1995; McDaniel & Kolari 1987) as well as hospital care (Beekun & Ginn 1993; Hambrick 1981; Shortell & Zajac 1990). More recently the Miles and Snow typology has also been applied in the study of competitive strategy and performance measurement in the Malaysian context (Jusoh & Parnell 2008).

Originally, Miles and Snow (1978) described three generic strategies: defender, prospector and analyzer. In addition to those viable three, they defined a "residual" reactor strategy. Defenders are organizations which have a stable set of products or services and compete primarily on the basis of price, quality, service and delivery. On the contrary, prospectors are defined as organizations which are first in the market and have a very broad product-market definition. Analyzers have characteristics from both of the prior strategies and they seek a balance between stable and changing domains. In their introduction to the classic edition, Miles and Snow (2003) suggested that a rich mix of strategy types may be associated with the overall health of industry.

O'Regan and Ghobadian (2005) studied the perceptions of generic strategies of small and medium sized engineering and electronics manufacturers in the UK and found support for the applicability of Miles and Snow typology to SMEs. The results of their study support previous findings but suggest that particularly prospectors and defenders are the most appropriate categorizations for SMEs. Similarly, Desaro, Benedetto, Song & Sinha (2005) suggest that analyzers do not necessarily form a separate group but can behave like prospectors or defenders.

Kabanoff and Brown (2008) studied the knowledge structures of prospectors, analyzers, and defenders and outlined a theory-based model of the content and structure of strategic knowledge structures. Miles and Snow typology has also been extended by studying the performance outcomes of the alignment between the e-business capabilities of SMEs and their business strategy (Raymond & Bergeron 2008). According to Raymond and Bergeron (2008), ideal e-business profiles vary in relation to the firm's strategic orientation (defender, analyzer or prospector type) in manufacturing enterprises.

Cognitive style and strategy type

The Miles and Snow (1978) typology has been combined with different cognitive styles at the theoretical level (Hurst, Rush & White 1989; Gallén 1997). The proposed model of the relationships between cognitive style and strategy type (Gallén 1997) is based on a review of the studies using Miles and Snow (1978) typology and studies of different cognitive styles.

Detailed and factual Sensing-Thinking types (ST) have been mooted as viewing a defender strategy as more viable more often than other managers (Gallén 1997). According to Mitroff and Kilmann (1975), the ST type's ideal organization is bureaucratic with centralized and well-defined authority. In a similar vein, a defender organization is typically functionally structured and has centralized control (Miles & Snow 1978, 31-48). Production and finance are areas which as well defenders as ST types are often interested in (Miles & Snow 1978; Myers et al. 1998). ST types (Henderson & Nutt 1980) as well as defenders are usually risk-averse.

Familiar, personally realistic, human qualities of specific people work roles are characteristics of SF type's ideal organization (Mitroff & Kilmann 1975). Any weakness they may encounter when making a decision is a risk of concentrating on data about people at the expense of ideas (Haley & Stumpf 1989). According to Kilmann and Herden (1976), they may fail to take environmental changes into account in strategy formulation, in a similar way that a reactor strategy may be a result of a failure to take environmental changes into consideration (Miles & Snow 1978, 81-93). According to Gallén (1997), sensing-feeling type managers (SFs) may view a reactor strategy as a viable future strategy more often than other managers.

Impersonally conceptual broad and ill-defined macro-economic issues are important in NT types' ideal organization (Mitroff & Kilmann 1975). NTs find new product development important (Kilmann & Herden 1976) like analyzers (Miles & Snow 1978). The logical and ingenious intuitive-thinking managers (NTs) have been proposed as viewing analyzer strategy as a viable strategy more often than other managers (Gallén 1997).

An NF type's ideal organization is flexible and concentrates on the most general personal and human goals (Mitroff & Kilmann 1975). Similarly, prospectors value new product development and decentralization (Miles & Snow 1978, 49-67). It has been proposed that intuitive-feeling types (NFs) prefer a prospector strategy over another strategy more often than managers with other cognitive styles (Gallén 1997).

Based on the study of the relationship between the cognitive styles and strategy types (Gallén 2006), a manager's type of perception was found to influence his or her view of viable future strategy. Intuitive (N) managers were found to prefer analyzer or prospector strategies and sensing (S) types, analyzer or defender strategies (Gallén 2006). In addition, Hough and Ogilvie (2005) studied how cognitive style affects the outcome of decisions. They found that intuitive-thinking (NT) managers used their intuition to make cognitive leaps (based on objective information) to make more high-quality decisions than other managers did. Sensing-feeling (SF) types were found to use time to seek socially acceptable decisions, which led to the lowest number of decisions. Cools and Van Den Broeck (2008) found support for the idea that different cognitive styles reveal different decision-making behaviour. Most importantly, these findings indicate that cognitive style influences strategic decisions on an individual level.

TMTs and strategies

Previous studies of TMTs and strategy

Since Hambrick and Mason (1984) presented the upper echelons perspective, numerous studies have concentrated on the relationship between the top management team and strategic issues. For example Bantel and Jackson (1989) find that more innovative banks were managed by more educated teams who were diverse in respect of their functional areas of expertise. On the other hand, Wiersema and Bantel (1992) study the relationship between the demography of TMTs and corporate strategic change and find that TMTs characterized by lower average age, shorter organizational tenure, higher team tenure, higher educational level, higher educational specialization heterogeneity and higher academic training in sciences were more likely to implement changes in corporate strategy than other teams. However, they do not find support for the effect of heterogeneity on age, organizational tenure, and team tenure on strategic change.

Smith, Smith, Sims, O'Bannon, Douglas and Scully (1994) study the effects of the TMT's demography and process on organizational performance. They find that a TMT's demography was indirectly related to performance through process and process directly related to performance. However, they also find some direct effects of team demography, in that there appears to be a negative relationship between heterogeneity of experience and return on investment and between team size and social integration through informal communication. That study also identifies a positive direct relationship between heterogeneity in the years of education and both measures of performance.

More recently, Naranjo-Gil and Hartmann (2007) have studied how TMT heterogeneity affects strategic change both directly and indirectly through the management accounting system. They find that TMT heterogeneity is positively related to the extent of strategic change, particularly when the company is changing its strategy to a prospector type one. However, when the company is moving towards a defender strategy, TMT heterogeneity seems unrelated to strategic change. In line with some previous studies (Bantel & Jackson 1989; Wiersema & Bantel 1992), age and tenure heterogeneity are not found to be related to strategic change.

Goll, Johnson and Rasheed. (2008) provide a longitudinal study of top management team characteristics, business strategy, and firm performance in the US airline industry. They use age, tenure, education and functional background as measures of managerial demographics. Goll et al. (2008) find support for a relationship between TMT demographics and business strategy in the deregulated airline industry but not in the regulated air carrier industry.

In addition, Barker and Patterson (1996) find that the composition of a TMT has an effect on the perception of problems at firms attempting a turnaround from a period of decline. Krishnan, Miller and Judge (1997) study the impact of complementary TMTs on post acquisition performance. The results of their study indicate that complementary backgrounds have a positive impact on post acquisition performance. However, they also suggest that psychological attributes such as cognitive style can affect top management behavior and effectiveness and their role should be investigated in the future.

Miller, Burke and Glick (1998) use cognitive diversity instead of the more commonly used demographic diversity in their study of the strategic decision-making process. They find that cognitive diversity inhibits rather than promotes comprehensive examinations of current opportunities and threats, and extensive long-range planning. Pitcher and Smith (2001) use a case study to extend the understanding of top management team demographics and include personality heterogeneity as one of the variables. In a similar vein, Clark and Soulsby (2007) use narrative materials about the management process in addition to the demographic measures of TMT composition. According to their study, the content as well as the composition of the TMT is important.

After reviewing Upper Echelons studies from the past 10 years, Carpenter et al. (2004) conclude that personality variables have rarely been incorporated in the Upper Echelons studies. However, the cognitive composition of the TMT measured in some other ways indicates that typical demographic variables could be

one universally used measure in studying upper echelons characteristics and increasing our understanding of the strategic decision-making.

Cognitive composition of the TMTs and the strategy types

Hurst et al. (1989) extend the classic strategic management process and combine four modes of cognition with stages which are needed to transform an intuitive insight into action. The creative management model combines these relationships across four modes of cognition (intuition, feeling, thinking and sensing) with seven stages and suggests that different cognitions are dominant in different phases of the process.

Hurst et al. (1989) also combined business strategies with the creative management model (Table 1). According to them, the composition of the TMT is a key in understanding the concept of strategy. They suggest that management groups in prospecting organizations are oriented towards the intuition (N) and feeling (F) levels and their time orientation is in the future. The strategic orientation of a TMT composed mostly of feelers with some intuitives is said to be preserving (defender in Miles and Snow typology). They also propose that an “analyzing” organization has a dominant coalition which has mostly thinkers (T) with some sensors (S). Finally, the same study states that “reflexing” organizations (reactors in Miles and Snow typology), which exist only in the here and now, have mostly sensor-type managers. An ideally composed TMT, it is suggested, would represent all four cognitive modes.

Table 1. Proposed relationships between the cognitive style and the strategy type in previous studies

	Hurst et al. (1989)	Gallén (1997)
Defender	Mostly feelers (F) with some intuitives (N)	Sensing-thinking (ST) managers
Prospector	Mostly intuitives (N) with some feelers (F)	Intuition-feeling (NF) managers
Analyzer	Mostly thinkers (T) with some sensors (S)	Intuition-thinking (NT) managers
Reactor	Mostly sensors (S)	Sensing-feeling (SF) managers

However, as described earlier, Gallén (1997) proposes a different model of the relationship between cognitive style and strategy type at the individual level (table 1). This model has been partly supported. Intuitive managers in particular

have been found to prefer an analyzer or a prospector strategy and sensing managers an analyzer or a defender strategy (Gallén 2006). Similar relationships may be found between the cognitive style of the TMT and strategy at the team level in this study.

When we combine the cognitive composition of the TMT and strategy, it is essential to clarify what we mean by the TMT (Hurst et al. 1989; Carpenter et al. 2004) and how we define its cognitive style. One way to define a TMT is based on the idea of dominant coalition; meaning the group of senior executives who are at a strategic level in the firm (Carpenter et al. 2004). Hambrick et al. (1996) defined the TMT as consisting of all executives above vice president level. Another way is used for example by Papadakis and Barwise (2002) and Smith et al. (1994), who defined TMT as top managers involved in strategic decision-making, as identified by the CEO.

According to organizational demographic researchers, one explanation of a group level construct is to define it by determining the number or average of the individuals' demographic characteristics (Leonard et al. 2005). When this approach is applied to cognitive styles, a TMT comprising two ST types, one SF type and two NT types would be an ST (sensing-thinking) group. On the other hand, the group's cognitive style could be determined by the structure of the group (Leonard et al. 2005). In that case, the group's cognitive style would be based on the highest status member of the group. Based on this, a TMT which has, for example, as many sensing as intuitive types would be classified based on the CEO's cognitive style.

In this study, the results presented in some of the previous studies concerning TMTs and strategies are evaluated using ten cases. Particularly attention is paid to the cognitive composition of the TMTs and their views of viable future strategies. Based on ten cases, the paper presents propositions about the relationship between the cognitive composition of the TMTs and strategies.

Methods and results

Industry

Health and wellness was seen as being one of the most promising markets in the USA two years ago (Harris & McCrea 2007), and in Finland, recent years have seen positive growth for the welfare services. However, at the moment, the economic outlook for the health and wellness industry is not as positive as it was previously.

Originally, the spa industry was selected for the study because there are a sufficient number of firms classified as a Small Medium Enterprise (SME) with a functioning top management team. The Miles and Snow (1978) typology focuses on industries with more competitors (Segev 1989), and it has been estimated that there about one hundred “spas” in Finland (there is no official classification for spas) and another essential factor in the selection process was availability.

Sample

In this study, the concept of a spa incorporates spa hotels, entertainment spas and health (or rehabilitation) spas. CEOs from 39 spas were asked to participate in this study, and a third agreed. Spas were classified as large, medium or small based on area and facilities (surface area of water in pools and the number of saunas, rooms and customer seats in restaurants), and this resulted in a sample consisting of there were two large, four medium-sized and seven small spas.

Data collection

Researcher visited the thirteen spas located in the different parts of Finland and had members of the TMT identified by the CEO complete the MBTI questionnaire. Then they were asked to give a written answer to the question, of what kind of strategy a company should pursue in the spa industry in order to succeed in the future (Gallén 2006). After that a meeting of the whole TMT was arranged at ten of the spas. 58 managers participated in this part of the study. At the meeting, the assembled TMT was asked to answer the same question as a group. First, the respondents were given time to discuss their perspectives. When they thought that they were ready, they were asked to choose one of four descriptions of the Miles and Snow strategy types based on their shared view of a viable strategy (Appendix 1).

The TMTs formed focus groups which were used to collect information about the team’s view of a viable future strategy. Therefore, for each TMT the focus was the same but the composition of the team was different (Gillham 2005, 60). Instead of concentrating on the actual strategy, teams were asked to form a shared view of the viable future strategy for a company in the spa industry. This kind of data collection method was chosen because it has been found that it is easier for managers to talk about their ideal organization than their real organization (Mitroff & Kilmann 1975). The number of participants was determined by the size of the TMT. Because of that, the recommended size of the focus groups was not reached in each case (Gillham 2005, 65).

Strategy type can be analyzed in several ways, such as self-assessment, the paragraph approach and a survey (e.g. Beekun et al. 1993; Conant, Mokwa & Varadarajan 1990). James and Hatten (1995) study the validity of the self-typing paragraph approach in the banking industry using the Miles and Snow typology. According to them, the paragraph approach is a useful measurement instrument with reasonable convergent validity. In addition, more recently, O'Reagan and Ghobadian (2006) have considered the paragraph approach as a suitable and reliable way to classify a firm's strategic orientation. Accordingly, this study adopts the paragraph approach to measure strategy type (Appendix 1).

MBTI and description of data

The MBTI (Myers Briggs Type Indicator) has been developed to measure and categorize the personality of individuals. The MBTI provides a valid, easy and quite universal way of classifying people according to Jung's cognitive theory (Gardner & Martinko 1996; Myers et al. 1998; Rosenak & Shontz 1988; Taggart & Robey 1981). This study measures cognitive style using the MBTI and a 166-item forced choice questionnaire (Form F). The Finnish version of Form F has been translated and validated at the University of Vaasa (Järnlström, 2000).

Later, respondents received hard-copy feedback of their type description, and were advised to contact the researcher if they disagreed with the result. Those respondents, who had received low scores (7 points or under) on one dimension, were asked to consider their type descriptions carefully (see also Järnlström 2002). Eight of the 70 respondents contacted the researcher and were asked to fill in the questions measuring the uncertain dimension again. This stage resulted in five respondents' cognitive styles being changed – one ST type was re-categorized as an NT type, one SF became an ST, one SF an NT, one SF an NF and one NF type was re-designated an NT type. Finally, the results indicated that there were 27 sensing-thinking (ST) managers, 16 intuitive-thinking (NT) managers, 10 intuitive-feeling (NF) managers and 5 sensing-feeling (SF) managers.

Results

Table 2 presents the means of the demographic measures of the TMTs. The size of the TMT varied from two to ten members and the average team size had 5,8 members. This corresponds with the results of previous studies concerning the size of TMTs (for example the average of 5.2 members in the study of Smith et al., 1994). The age of the members of the TMTs varied from 26 to 63 and the average age within each TMT from 38 to 58 years. In case number one, this data item was missing for one respondent. The age of the CEO varied from 40 to 63 years with an average of 51.2 years old.

The level of education was arrived at by counting the percentage of TMT members who had a university degree (table 2). Two of the TMTs had no members with a university degree and in three teams at least half of the members had university degrees. Three percent of the answers were missing this data item.

Most of the TMTs chose an analyzer strategy as being the most viable future strategy for a company in the spa industry (table 2). Only two TMTs chose a defender strategy and one chose a prospector strategy. None of the TMTs chose a reactor strategy. Descriptions of the four strategy types are presented in the Appendix 1.

Table 2. Composition of the TMTs and strategy types

	Size of the TMT	Average age of the TMT	Age of the CEO	Level of education	Strategy type
Case 1	6	38	44	17	Analyzer
Case 2	6	46	55	17	Analyzer
Case 3	7	42	48	29	Defender
Case 4	4	40	55	50	Analyzer
Case 5	5	44	51	60	Analyzer
Case 6	2	58	63	50	Defender
Case 7	3	47	50	0	Analyzer
Case 8	10	40	45	10	Prospector
Case 9	6	39	46	17	Analyzer
Case 10	9	38	55	0	Analyzer

Based on these ten cases, there seems to be no clear connection between the average age of the TMT or the CEO's age and the strategy type. Those TMTs, whose members' age was under the average (43,2 years), chose either prospector, analyzer or defender strategies. In a similar vein, TMTs with an average member age above 43.2 chose either an analyzer or a defender strategy. TMTs led by younger CEOs (aged less than 51.2 years) chose one of these three strategy types. Finally, TMTs led by older CEOs chose an analyzer or a defender strategy but not a prospector strategy. In a similar vein, Thomas, Litschert and Ramaswamy (1991)

found that prospector firms tend to be led by CEOs with a shorter tenure both in terms of employment and in terms of position.

Four out of ten TMTs had a clearly higher level of education, as measured by the percentage of the members having a university degree. Two of these teams chose a defender and two of them an analyzer strategy. A prospector strategy was chosen by a TMT with lower level of education than the average. However, a closer look at the education of the TMT members provides mixed results. Some of the teams had many members with college degrees and some had members with no formal education beyond the compulsory schooling. The education level of the CEO was missing in cases one and three. In cases two and five, the CEO had a university degree in business economics and in case six, in medical sciences. Based on these ten cases, no clear propositions between the measures of education and strategy type can be made.

Table 3 presents the cognitive composition of the TMT together with related strategy types. The TMT's style was defined based on the average of different cognitive styles in each of the teams. When the distribution was equal, the cognitive style of the CEO determined the cognitive style of the TMT (cases one and two). Seven out of ten TMTs were ST (sensing-thinking) teams. The remaining TMTs were classified as intuitive-thinking teams (NT).

Table 3. The cognitive composition of the TMTs

	Size of the TMT	ST	NF	NT	SF	S	N	T	F	CEO's cognitive style	TMT's cognitive style	Strategy type
Case 1	6	3	2	1	0	3	3	4	2	ST	ST	Analyzer
Case 2	6	3	1	2	0	3	3	5	1	ST	ST	Analyzer
Case 3	7	4	2	1	0	4	3	5	2	ST	ST	Defender
Case 4	4	2	0	1	1	3	1	3	1	ST	ST	Analyzer
Case 5	5	1	0	3	1	2	3	4	1	NT	NT	Analyzer
Case 6	2	1	0	0	1	2	0	1	1	ST	ST	Defender
Case 7	3	2	0	0	1	3	0	2	1	ST	ST	Analyzer
Case 8	10	2	2	5	1	3	7	7	3	NT	NT	Prospector
Case 9	6	2	2	2	0	2	4	4	2	NF	NT	Analyzer
Case 10	9	7	1	1	0	7	2	8	1	ST	ST	Analyzer

A large amount of ST teams was to be expected because ST types are common in managerial positions. For example Haley and Pini (1994) have 40 percent ST managers and Asikainen and Routamaa (1997) 52 percent ST managers in their datasets. In addition, intuition-thinking (NT) has been found to be a typical cognitive style for managers. NTs make up 37 percent of the total in one (Haley & Pini 1994) and 25 percent in another study (Asikainen & Routamaa 1997). Sensing-feeling (SF) and intuition-feeling (NF) types are rarer in managerial positions and there were no SF or NF teams among these ten cases.

In previous studies, the sensing-thinking (ST) style has been combined with a defender strategy (Gallén 1997). Based on empirical data, sensing managers have been found to prefer either an analyzer or a defender strategy (Gallén 2006). At the team level, five out of seven sensing-thinking teams chose an analyzer strategy and two of them chose a defender strategy (table 3). On the basis of these seven cases the following proposition is made:

Proposition 1. Sensing-thinking TMTs prefer an analyzer or a defender strategy.

On the other hand, it has been proposed that intuitive-thinking (NT) style managers prefer an analyzer strategy (Gallén 1997). However, there is support for the idea that intuitive types' preference is for analyzer or prospector strategies (Gallén 2006). In this study, two of the NT teams choose an analyzer strategy and one a prospector strategy. Based on these cases, the following proposition is made:

Proposition 2. Intuition-thinking TMTs prefer an analyzer or a prospector strategy.

Table 3 also presents the results of the analysis of the cognitive style of the CEO. The cognitive style of the CEO is the same as the cognitive style of the TMT in all but one case. This supports the idea that managers tend to clone themselves (Hambrick, Geletkanycz & Fredrickson 1993). This also supports the validity of the propositions made from the power perspective. If the TMT had been defined based on the highest status member of the group, the propositions would have been the same. The only exception is case nine in which the TMT was led by an intuitive-feeling manager (NF).

In five of the TMTs, there are no SF types or NF types. However, the only TMT which chose a prospector strategy corresponds to the ideal team described by Hurst et al. (1989). This TMT consists of two ST and NF types, one SF type and five NT types. Naranjo-Gil et al. (2007) also find that TMT heterogeneity was

positively related to the extent of strategic change in the situation of a strategic shift into the prospector strategy. Based on this it is proposed that:

Proposition 3. An intuition-thinking TMT, which has all the cognitive styles represented, prefers a prospector strategy.

Discussion

Previous studies dealing with the relationship between managers' cognitive styles and their strategic decisions were used as a basis for this study of the phenomenon at the TMT level. This paper also reviews studies evaluating TMT diversity using demographic variables. To evaluate some of the results of the earlier studies the paper uses information drawn from ten cases, and then presents propositions about the relationship between the TMT's cognitive composition and preferred strategy types according to the Miles and Snow (1978) typology. On the whole, this study offers insights into how the composition of the TMT affects the strategies it prefers.

Seven of the TMTs chose an analyzer strategy. Two of the ten teams chose a defender strategy and a prospector strategy was preferred by one team. Neither the average age of the TMT, nor the age of the CEO nor the level of education seemed to be promising factors in analyzing the relationship between the composition of the TMT and the view of viable future strategy.

Based on these ten cases, sensing-thinking (ST) teams indicate a preference for either an analyzer or a defender strategy. Intuitive-thinking (NT) teams prefer an analyzer or a prospector strategy. On the whole, this study supports the idea, that as in the individual level, the cognitive composition of the TMT has an effect on strategic decisions at the team level, and thus could prove a more promising measure of heterogeneity than the traditional demographic measures.

Interestingly, this study also shows that the only team which chose a prospector strategy, had managers with all four cognitive styles. This TMT had members with ages under the average, a CEO of less than the average age with a college degree and was the biggest in terms of team size compared with the nine other cases. However, based on these ten cases the clearest difference was that this team was the most heterogeneous in its cognitive composition.

The results of this study support the importance of the composition of the TMT in strategic decisions and extend the upper echelons perspective (Hambrick & Mason 1984) by looking at the cognitive composition of the TMTs. As many re-

searchers have argued (Carpenter et al. 2004; Hambrick 2007), the psychological makeup of the TMT has been a relatively unexplored perspective and could be also a necessary extension to the study of TMTs and their strategies.

At a practical level, when new TMT members are chosen, it should be borne in mind how the composition of the team will affect strategic decisions (see also Kauer et al. 2007). This paper suggests that the cognitive composition is particularly important. Strategic decision-making can be improved by increasing self-understanding and taking into consideration the cognitive composition of the TMT. Similarly Jarzabkowski and Searle (2004) suggest that psychometric assessments such as the MBTI can help TMTs to work more effectively by identifying tendencies or even strategy-making areas which they may otherwise ignore.

In problem-solving situations, all four functions (sensing, intuition, thinking and feeling) are needed and people tend to emphasize their natural preferences (Martin 1997). If there are for example no feeling members in the TMT, the team should pay special attention to that element of decision-making, so teams should remember for example to use time to discuss the HR consequences of their decisions. Volkema and Gorman (1998) suggest that a multi-temperament team can particularly moderate the effect of problem formulation on performance.

Managers should be aware of their natural preferences for certain types of behavior and certain types of strategies. They may not be as objective as they think when analyzing information in a strategic planning phase – even when managers have the same information, they place a different emphasis on it and interpret it differently. Mintzberg (1994) has criticized the traditional strategic planning perspective and argued that it is not able to support strategic thinking. According to him, strategic thinking is about synthesis and also involves intuition and creativity.

Concerning the applicability of the results to TMTs in other cultures, it should be noted that there may be some restrictions. The data in this study were collected from TMTs in Finland. Finland has quite similar rankings in power distance to the USA or Great Britain (Hofstede 1991 26). On the other hand, individualism and masculinity are lower in Finland than in for example, the USA or Great Britain and uncertainty avoidance is higher (Hofstede 1991 53; 84; 113). Despite these differences, psychological type is considered universal (Myers et al. 1998) and the relationships between the cognitive composition of the TMT and strategy types are probably to be found in other cultures too.

This study has some limitations. First, the data was collected from a single industry. However, by concentrating on a single industry the effects of the industry and

contextual factors in it can be minimized. Second, the amount of data is fairly small and due to that, paper only puts forward propositions on the possible relationships. Studies with a larger amount of data are needed in order to test those propositions. Third, in addition to the paragraph approach, other measures could have been used to analyze strategy types.

In an actual decision-making situation, there are many contextual factors that matter.

According to Hambrick (2007), it is also important to consider whether the TMT is the right unit of analysis in all decision-making situations. If the members of the TMT do not collectively process the information or make decisions, it would be more useful to identify sub-groups which are actually responsible for decisions, and use only their characteristics to predict actions. In addition, the leadership style of the CEO may matter in practice. The study of Kauer et al. (2007) has three out of eight TMT's with very authoritarian leaders who did not involve the team in strategic decision-making but made decisions on their own.

Similar studies conducted in different industries and cultures could also extend our understanding of the effect of the TMT's cognitive composition on a firm's strategy. In addition, studies analyzing actual decision-making situations and strategy choices would be beneficial. On the whole, the idea presented by Hambrick (2007) about a new type of strategy simulation game could be one promising way to extend our understanding about the various elements involved in strategic decision-making in the future.

On the whole, the results of this study are important for managers, management consultants and TMTs particularly today. Financial decline means increasing challenges for the TMTs and emphasizes the importance of decision-making. Constructive use of differences in TMTs may help companies to find new ways of doing business to survive, or even excel in, difficult market situations. However, as with all intellectual capital, the decision makers have to first recognize differences in personality and then take advantage of them in a constructive way in order to derive all possible benefit from them.

References

- Asikainen, V. & Routamaa, V. (1997). The relationship between the MBTI and the creativity orientations of managers. *Proceedings of the Leadership and Myers-Briggs Type Indicator*. Second International Research Conference, Washington, 2-4 April 1997, USA.
- Auden, W.C., Shackman, J.D. & Onken, M.H. (2006). Top Management team, international risk management factor and firm performance. *Team Performance Management* 12:7/8, 209-224.
- Bantel, K.A. & Jackson, S.E. (1989). Top management and innovations in banking: does the composition of the top team make a difference? *Strategic Management Journal* 10, Special Issue, 107-124.
- Barker, V. & Patterson Jr., P.W. (1996). Top management team tenure and top manager causal attributions at declining firms attempting turnarounds. *Group & Organization Management* 21:3, 304-336.
- Beekun, R.I. & Ginn, G.O. (1993). Business strategy and interorganizational linkages within the acute care hospital industry: An expansion of the Miles and Snow typology. *Human Relations* 46:11, 1291-1318.
- Boal, K.B. & Hooijberg, R. (2001). Strategic leadership research: moving on. *Leadership Quarterly* 11:4, 515-549.
- Carpenter, M.A. (2002). The implications of strategy and social context for the relationship between top management team heterogeneity and firm performance. *Strategic Management Journal* 23:3, 275-284.
- Carpenter, M.A., Geletkanycz, M.A. & Sanders, W.G. (2004). Upper echelons research revisited: antecedents, elements, and consequences of top management team composition. *Journal of Management* 30:6, 749-778.
- Certo, S.T., Lester, R.H., Dalton, C.M. & Dalton, D.R. (2006). Top management teams, strategy and financial performance: A meta-analytic examination. *Journal of Management Studies* 43:4, 813-839.
- Clark, E. & Soulsby, A. (2007). Understanding top management team and organizational change through demographic and processual analysis. *Journal of Management Studies* 44:6, 932-954.
- Conant, J.S., Mokwa, M.P. & Varadarajan, P.R. (1990). Strategic types, distinctive marketing competencies and organizational performance: A Multiple measures-based study. *Strategic Management Journal* 11:5, 365-383.

Cools, E & Van Den Broeck, H. (2008). Cognitive styles and managerial behaviour: a qualitative study. *Education + Training* 50:2, 103-114.

Desarbo, W.S., Benedetto, C.A., Song, M. & Sinha I. (2005). Revisiting the Miles and Snow strategic framework: uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance. *Strategic Management Journal* 26, 47-74.

Gallén, T. (1997). The Cognitive style and strategic decisions of managers. *Management Decision* 35:7/8, 541-551.

Gallén, T. (2006). Managers and strategies: does the cognitive style matter? *Journal of Management Development* 25:2, 118-133.

Gardner, W.L. & Martinko, M.J. (1996). Using the Myers-Briggs Type Indicator to Study Managers: A Literature Review and Research Agenda. *Journal of Management* 22:1, 45-83.

Ghoshal, S. (2003). Miles and Snow: Enduring insights for managers. *The Academy of Management Executive* 17:4, 109-114.

Gillham, B. (2005). *Research Interviewing: The Range of Techniques*. Berkshire: McGraw-Hill Education.

Goll, I., Johnson, N.B. & Rasheed, A.A. (2008). Top management team demographic characteristics, business strategy, and firm performance in the US airline industry. *Management Decision* 46:2, 201-222.

Haley, U.C.V. & Pini, R. (1994). Blazing international trails in strategic decision-making research. *Conference Proceedings: The Myers-Briggs Type Indicator and Leadership*. An International Research Conference, January 12-14.

Haley, U.C.V. & Stumpf, S.A. (1989). Cognitive trails in strategic decision-making: linking theories of personalities and cognitions. *Journal of Management Studies* 26:5, 477-497.

Hambrick, D.C. (1981). Strategic awareness within top management team. *Strategic Management Journal* 2:3, 263-79.

Hambrick, D.C. (2007). Upper echelons theory: An update. *Academy of Management Review* 32:2, 334-343.

Hambrick, D.C., Cho, T.S. & Chen, M. (1996). The Influence of top management team heterogeneity on firms' competitive moves. *Administrative Science Quarterly* 41:4, 659-684.

Hambrick, D.C., Geletkanycz, M.A. & Fredrickson, J.W. (1993). Top executive commitment to the status quo: some tests of its determinants. *Strategic Management Journal* 14:6, 401-418.

- Hambrick, D.C. & Mason, P.A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review* 9:2, 193-206.
- Harris, W. & McCrea, B. (2007). Best business opportunities for 2007. *Black Enterprise* 37:6, 82-86.
- Henderson, J. C. & Nutt, P.C. (1980). The influence of decision style on decision-making behavior. *Management Science* 26:4, 371-386.
- Hofstede, G. (1991). *Cultures and Organizations*. Glasgow: Omnia Books Ltd.
- Hough, J.R. & Ogilvie, D. (2005). An empirical test of cognitive style and strategic decision outcomes. *Journal of Management Studies* 42:2, 417-448.
- Hurst, D.K., Rush, J.C. & White, R.E. (1989). Top management teams and organizational renewal. *Strategic Management Journal* 10, Special Issue, Summer, 87-105.
- James, W.L. & Hatten, K.J. (1995). Research notes and communications: further evidence on the validity of the self typing paragraph approach: Miles and Snow strategic archetypes in banking. *Strategic Management Journal* 16:2, 161-168.
- Jarzabkowski, P. & Searle, R.H. (2004). Harnessing diversity and collective action in the top management team. *Long Range Planning* 37:5, 399-419.
- Jennings, D. & Disney, J.J. (2006). Designing the strategic planning process: does the psychological type matter? *Management Decision* 44:5, 598-614.
- Jusoh, R. & Parnell J. A. (2008). Competitive strategy and performance measurement in the Malaysian context. *Management Decision* 46:1, 5-31.
- Järnlström, M. (2000). Personality preferences and career expectations of Finnish business students. *Career Development Journal* 5:3, 144-154.
- Järnlström, M. (2002). Organizational employment versus entrepreneurship: the personality approach to business students' career aspirations. *Journal of Business and Entrepreneurship* 14:1, 103-123.
- Kabanoff, B. & Brown, S. (2008). Knowledge structures of prospectors, analyzers, and defenders: content, structure, stability, and performance. *Strategic Management Journal* 29:2, 149-171.
- Kauer, D., Prinzessin zu Waldeck, T.C. & Schäffer, U. (2007). Effects of top management team characteristics on strategic decision making. Shifting attention to team member personalities and mediating processes. *Management Decision* 45:6, 942-967.

- Ketchen Jr., D.J. (2003). Introduction: Raymond E. Miles and Charles C. Snow's organizational strategy, structure and process. *Academy of Management Executive* 17:4, 95-96.
- Kilmann, R.H. & Herden, R.P. (1976). Towards a systematic methodology for evaluating the impact of interventions on organizational effectiveness. *Academy of Management Review*, July, 87-98.
- Kirby, L.K. (1997). Introduction. Psychological type and the Myers-Briggs Type Indicator. In: *Developing Leaders, Research and Applications in Psychological Type and Leadership Development*, 3-31. Eds C. Fitzgerald and L. K. Kirby. California: Palo Alto.
- Koufopoulos, D., Zoumbos, V., Argyropoulou, M. & Motwani, J. (2008). Top management team and corporate performance: a study of Greek firms. *Team Performance Management* 14:7/8, 340-363.
- Krishnan, A., Miller, A. & Judge, W.Q. (1997). Diversification and top management team complementary: is performance improved by merging similar or dissimilar teams? *Strategic Management Journal* 18:5, 361-374.
- Leonard, N.H., Beauvais, L.L. & Scholl, R.W. (2005). A Multi-level model of group cognitive style in strategic decision making. *Journal of Managerial Issues* XVII:1, 119-138.
- Lindblom, A., Olkkonen, R. & Mitronen, L. (2008). Cognitive styles of contractually integrated retail entrepreneurs: a survey study. *International Journal of Retail & Distribution Management* 36:6, 518-532.
- Martin, C. (1997). *Looking at Type: the Fundamentals*. Gainesville: Center for Applications of Psychological Type.
- McDaniel, S.W. & Kolari, J.W. (1987). Marketing strategy implications of the Miles and Snow strategic typology. *Journal of Marketing* 51:4, 19-30.
- Michel, J.G. & Hambrick, D.C. (1992). Diversification posture and top management team characteristics. *Academy of Management Journal* 35:1, 9-37.
- Miles, R.E. & Snow, C.C. (1978). *Organizational Strategy, structure, and process*. New York: McGraw-Hill.
- Miles, R.E. & Snow, C.C. (2003). *Organizational strategy, Structure, and Process*. 2nd ed. California: Stanford University Press.
- Miller, C.C, Burke, L.M. & Glick, W.H. (1998). Cognitive diversity among upper-echelon executives: implications for strategic decision processes. *Strategic Management Journal* 19:1, 39-58.

Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard Business Review*, January-February, 107-114.

Mitroff I.I. & Kilmann, R.H. (1975). Stories managers tell. A new tool organizational problem solving. *Management Review* 64:7, 18-28.

Myers, I.B., McCaulley, M.H., Quenk, N.L. & Hammer, A.L. (1998). *Manual: A guide to the development and use of the Myers-Briggs type indicator*. 3.ed. Palo Alto, CA: Consulting Psychologist Press, Inc.

Naranjo-Gil, D. & Hartmann, F. (2007). Management accounting systems, top management team heterogeneity and strategic change. *Accounting, Organizations and Society* 32:7/8, 735-756.

O'Regan, N. & Ghobadian, A. (2006). Perceptions of generic strategies of small and medium sized engineering and electronics manufacturers in the UK. *Journal of Manufacturing Technology Management* 17:5, 603-620.

Papadakis, V.M. & Barwise, P. (2002). How much do CEOs and top managers matter in strategic-decision-making? *British Journal of Management* 13:1, 83-95.

Pitcher, P. & Smith, A.D. (2001). Top management team heterogeneity: personality, power, and proxies. *Organization Science* 12:1, 1-18.

Raymond, L. & Bergeron, F. (2008). Enabling the business strategy of SMEs through e-business capabilities. *Industrial Management & Data Systems* 108:5, 577-595.

Rosenak, C.M. & Shontz, F.C. (1988). Jungian Q-sorts: demonstrating construct validity for psychological type and the MBTI. *Journal of Psychological Type* 15, 33-45.

Segev, E. (1989). A Systematic comparative analysis of two business-level strategic typologies. *Strategic Management Journal* 10:5, 487-505.

Shortell, S.M. & Zajac, E.J. (1990). Perceptual and archival measures of Miles and Snow's strategic types: A comprehensive assessment of reliability and validity. *Academy of Management Journal* 33:4, 817-832.

Smith, K.G., Smith, Sims Jr., K.A., O'Bannon, H.P., Douglas, P. & Scully, J.A. (1994). Top management team demography and process: the role of social integration and communication. *Administrative Science Quarterly* 39:3, 412-438.

Stumpf, S.A. & Dunbar, R.L.M. (1991). The effects of personality type on choices made in strategic decision situations. *Decision Sciences* 22, 1047-1069.

Taggart, W. & Robey, D. (1981). Minds and managers: on the dual nature of human information processing and management. *Academy of Management Journal* 6:2, 187-195.

Thomas, A.S., Litschert, R.J. & Ramaswamy, K. (1991). The performance impact of strategy manager coalignment: an empirical examination. *Strategic Management Journal* 12:7, 509-522.

Volkema, R.J. & Gorman, R.H. (1998). The influence of cognitive-based group composition on decision-making process and outcome. *Journal of Management Studies* 35:1, 105-121.

Wiersema, M.F. & Bantel, K.A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal* 35:1, 91-121.

Appendix 1.

Descriptions of the four strategy types (see also James & Hatten 1995)

- a) The company attempts to locate and maintain a secure niche in relatively stable product or service area. They try to offer a more limited range of services than their competitors. They aim to protect their domain by offering higher quality and superior service. They may not be at the forefront of development in the industry but they attempt to concentrate on doing the best job possible in their market. (defender strategy)
- b) They try to operate within a broad product-market domain that is systematically redefined. They want to be 'first in the market' by offering new services and entering new market areas even if all of them may not prove to be highly profitable. They try to respond rapidly to early signals concerning possible opportunities, and these responses often lead us to a new round of competitive actions. (prospector strategy)
- c) They try to maintain a stable, limited line of services, while at the same time trying to move out quickly to follow a carefully selected set of promising new developments in the industry. They are seldom 'first in' with new services but by carefully monitoring the actions of major competitors in the areas which suit their stable product-market base, try to be 'second in' by following 'first in' companies with a more cost-efficient product or service. (analyzer strategy)
- d) They have not been able to have a consistent product-market orientation. They have not been able to be as aggressive in maintaining established products and markets as have their competitors. They have not been able to take as many risks as competitors and have been forced to respond to environmental pressures. (reactor strategy)