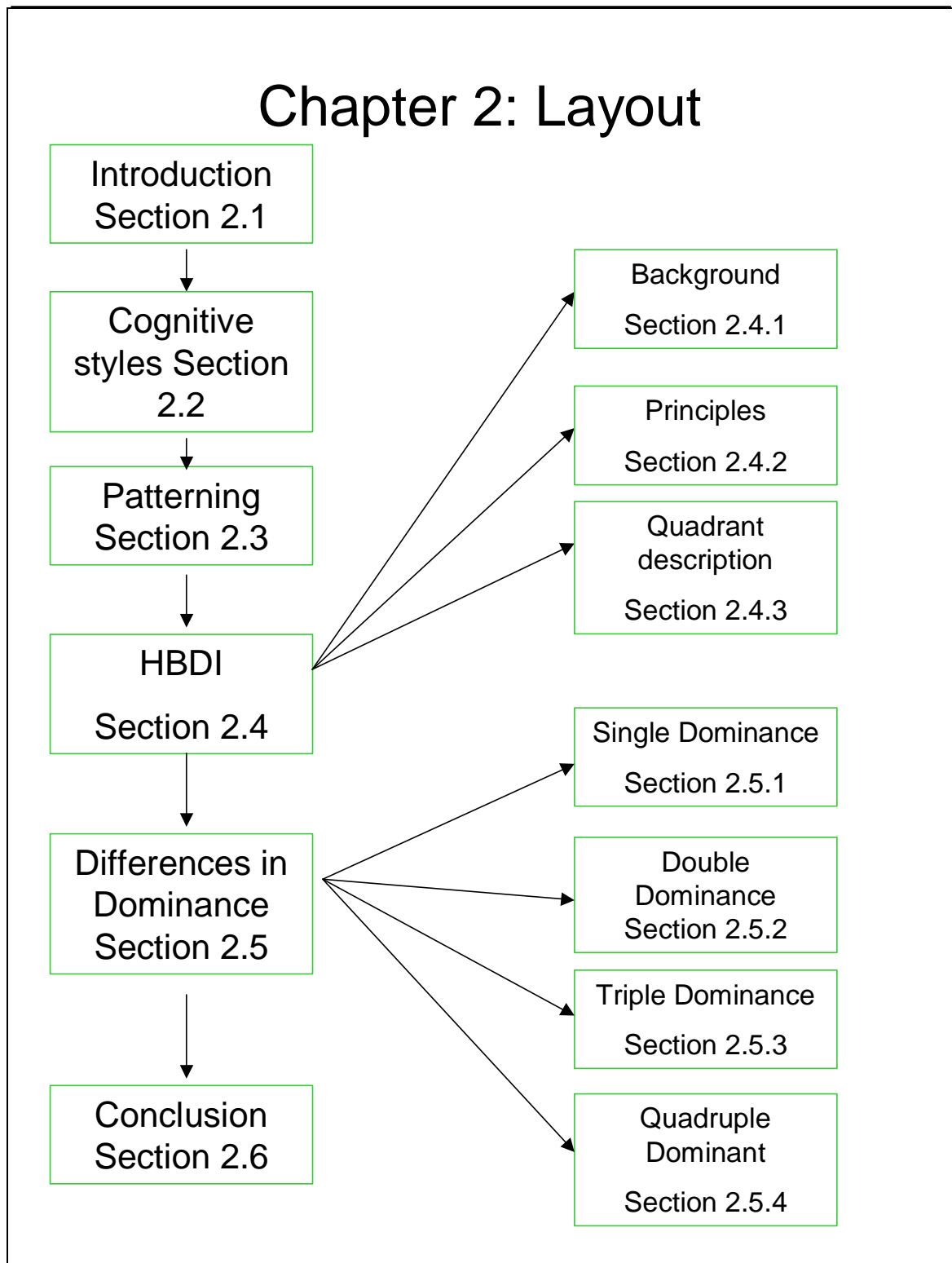


Chapter 2: Cognitive Styles and Thinking Patterns



2.1 Introduction

Mental or cognitive models are powerful thinking tools or metaphors. When mental models are understood they can enhance communication, teamwork and decision-making, which can again enhance effective problem solving (Lumsdaine et al, 1999: 49). Flexible, critical and creative problem-solving skills are necessary in a rapidly changing world in order to cope with and find solutions for its many problems (Lumsdaine & Lumsdaine, 1995: 4). Making a decision on whether to start or not to start a venture is an example of such a problem-solving situation faced by the entrepreneur.

According to Ucbasaran & Westhead (2002: 6), habitual entrepreneurs may have a unique mindset that allows them to identify not only more opportunities but also more innovative ones. These cognitive processes include a greater reliance on entrepreneurial heuristics (see Chapter 3), which allow entrepreneurs to have at their disposal greater cognitive resources, which in turn facilitate higher levels of innovative activity.

The following three mental or cognitive styles / models are of specific interest for this study:

- Cognitive style
- Patterning system for understanding thinking
- The Whole Brain thinking model of Ned Herrmann (thinking preferences)

2.2 Cognitive style

Brigham & De Castro (2003: 44) attempt to provide an overview of the construct of cognitive style. These authors argue and quote Sadler-Smith & Badger (1998) that the cognitive style construct is widely recognised as an important determinant of individual behaviour. Cognitive style can be defined as an individual's preferred

and habitual approach to organising, representing and processing information (Streufert & Nogani 1998); a built-in and automatic way of responding to information and situations (Riding & Rayner, 1998); individual differences in the way people perceive, think and solve problems, learn and relate to others (Witkin, Moore, Goodenough & Cox, 1977); and individuals' characteristics modes of perceiving, remembering and problem-solving (Messick, 1984) as quoted by Brigham & De Castro (2003: 44).

According to Brigham & De Castro (2003: 44), cognitive style is a higher-order heuristic and can be conceptualised as the way the individual's brain is "hard-wired". It leads to a consistent approach that people employ when they approach, frame and solve problems. They also quote Sadler-Smith & Badger (1998) who postulate that cognitive style has certain common characteristics:

- It is a pervasive dimension that can be assessed using psychometric techniques.
- It is stable over time.
- It is bipolar.
- It describes different, rather than better, thinking processes.

Brigham & De Castro (2003: 47) quote Rayner (2000) who argue that the contemporary field of cognitive style can be traced to basically three areas in psychology: perception, cognitive controls and processing. "Style" refers to various aspects of an individual's performance, cognition, behaviour, motivation, learning, teaching, and organisational behaviour. Table 1.1 acknowledges the previous studies, not only in order to understand the foundations of cognitive style, but also to indicate the wide number of distinct labels and models that exist in the field.

Table 2.1 The key holistic – analytic models of cognitive style (Brigham & De Castro (2003: 47)

Source: Adapted from Rayner (2000: 125).

Dimensions/labels	Description	Author(s)
Field dependency - independency	Individual dependency on a perceptual field when analysing a structure or form that is part of the field	Witkin & Asch (1948); Witkin (1964).
Levelling - Sharpening	A tendency to assimilate detail rapidly and lose or emphasis detail and changes in new formation.	Klein (1954); Gardner, Holzman, Klein, Linton & Spence (1959).
Holist - Serialist	The tendency to work through problem-solving incrementally or globally and assimilate detail.	Pask & Scott (1972); Pask (1976).
Assimilator - Explorer	Individual preference for seeking familiarity or novelty in the process of problem-solving and creativity.	Kaufmann (1989).
Adaptors - Innovators	Adaptors prefer conventional, established procedures; Innovators prefer restructuring or new perspectives in problem-solving.	Kirton (1976, 1987, 1994).
Analytic - Intuitive	Analysts favour a structured approach to problem-solving and systematic methods of investigation; Intuitives prefer an open-ended approach to problem-solving and random methods of exploration.	Allison & Hayes (1996).

Although certain dimensions of an individual's cognitive style will remain stable over time (Allison & Hayes 1996; Kirton 1980), the style demands which a new venture makes on the entrepreneur will vary as the venture grows (Brigham & De Castro 2003: 50).

The term *cognitive style* has become widely used and many models and descriptions fall under the classification of cognitive style. For the purposes of this study, De Bono's patterning system and the Herrmann Brain Dominance Instrument for thinking preferences, both which are cognitive styles, are further explored.

2.3 Patterning

2.3.1 Pattern recognition

Cognitive scientists have developed a method of studying pattern recognition, which means recognition of complex patterns of stimuli against a background of extraneous noise. This may help to provide new insights into the nature of opportunity recognition. To apply this to the entrepreneurial cognition domain, it can be argued that opportunities come into existence in the external world as a result of unrelated changes in technology, markets and government policies or regulations. However, these opportunities remain only a potential until someone "connects the dots" and perceives a pattern among them (Baron & Ward, 2004: 559).

According to Baron & Ward (2004: 559), the above issues regarding patterning should not be seen as exhaustive in any way. According to Krueger (2003), many other issues have not yet been examined in detail by entrepreneurial cognition researchers, for example:

- Do entrepreneurs show different patterns of creative thought from other individuals?

- Do they differ from other individuals with respect to the kind of tacit knowledge they possess in memory?

Recognising opportunities may involve perceiving connections between seemingly unrelated changes in technological, economic, political and social factors – a kind of pattern recognition. In order to perceive such links, however, individuals must possess knowledge structures that permit them to do so (Baron, 2003). In addition, they must access that knowledge in ways that lead to original and practical business ideas (Baron & Ward, 2004: 569).

In order to understand the concept of patterning as referred to above, the next section will explore patterning in more detail, on the basis of the work done by De Bono (1993).

2.3.2 De Bono on patterning

According to De Bono (1993: 49), the human brain works as a self-organising system in which incoming information organises itself into patterns and sequences. The author also postulates that a huge difference exists between “passive” or externally organised information systems, where information is laid out passively and has no activity of its own, and self-organising systems, where information is used and moved around. Our traditional information systems of thinking belong to the active self-organising systems.

In a remarkably simple manner, the nerve networks in the brain operate as a self-organising system that allows information to be organised into sequences. It seems (according to De Bono, 1993: 49) that the brain is designed to make sense of the world around us by forming routine patterns of perception from incoming information, and not to be creative. The result is that 90% of our lives are governed by established routines and patterns, and that 100% of our perceptions are the result thereof.

De Bono (1993: 171) further postulates that, for the first time in human history, we have begun to understand the difference between traditional passive information systems, in which information is moved about by a processor, and self-organising, active information systems, in which information organises itself into sequences and patterns. He points out that there is nothing sinister about this, and it can be linked to very simple ways in which nerve networks act as self-organising systems.

De Bono suggests that once one understands the way in which self-organising systems create asymmetric patterns, we can understand why every valuable creative idea must always be logical hindsight.

Information forms the basis for any decision and can be seen as the oxygen of business. In his work De Bono uses the Four Wheels of Human Thinking metaphor to explain information processing in the brain. Figure 2.1 illustrates a series of funnels representing the patterns already established by the self-organising nature of human perception in our minds, meaning that whatever we see can only be perceived through these patterns. When one perceives a new idea, one has to speculate, imagine or hypothesise it first in order to find the already established pattern (De Bono, 1993: 34).

In a study done by Uchasaran & Westhead (2002) on the differences between novice and expert entrepreneurs, these authors argue that experts are able to manipulate incoming information into recognisable patterns and then match the information more strongly and transform it into appropriate actions. They also quote Hillerbrand (1989), who postulates that this capacity reduces the burden of cognitive processing and may have the advantage that information is more easily encoded in memory (providing further cognitive resources). This may lead to spotting of opportunities far more often, because of the experts' ability to recognise complex information in their environment. Entrepreneurs' greater information-processing capacity, due to increased cognitive resources, may lead

to the identification of more novel and innovative opportunities. De Bono refers to this as cognitive resources patterning.

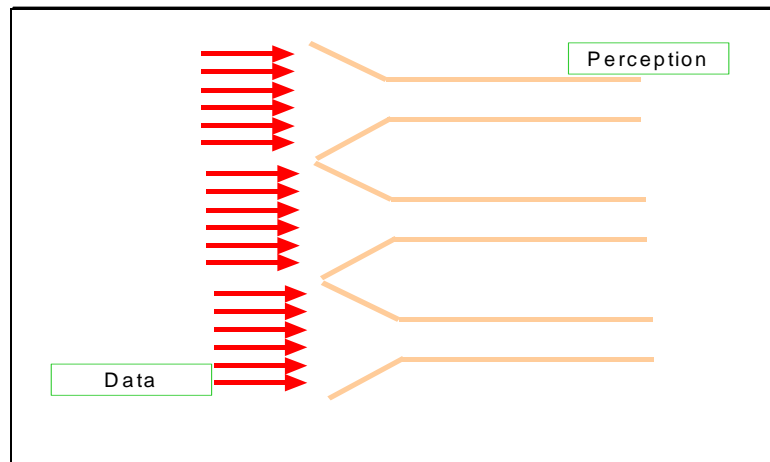


Figure 2.1: Four Wheels of Human Thinking (De Bono 1993: 55).

It seems that the main purpose of most people's thinking is in fact to abolish thinking in an attempt to make sense out of confusion and uncertainty. De Bono (Tyler & De Bono, 2003: 12) say that the mind works to recognise familiar patterns in the outside world. Through patterning the mind is trying to find a familiar pattern and follow the already known route. This then makes further thinking unnecessary. An example of this phenomenon is driving a car. The moment you find a route known to you, you do not need to use a map or compass or ask for directions. Finding your way happens without your really thinking about it. In a way our thinking is an ongoing search for these familiar roads that make thinking unnecessary. The purpose of perception is to allow patterns to form and then to use them. The purpose of thinking, as we have said, is to find familiar patterns and so remove the need to think any more (Tyler & De Bono: 21).

In summary, we can say that patterning is the arrangement of information on the memory surface of the mind. A pattern is a repeatable sequence of neural activities. In practice a pattern is any repeatable concept, idea, thought or image. The pattern may also refer to an arrangement of other patterns, which together make up an approach to a problem, a point of view, a way of looking at things.

There is no limit to the size of the pattern and the only requirements are that a pattern should be repeatable, recognisable and usable (Tyler & De Bono: 26).

If one looks at the elements of entrepreneurial thinking, it appears that an entrepreneur uses unique patterning and preferences in the decision-making process. An entrepreneur is normally a positive person who asks why and how things work, sees possibilities, creates many ideas and handles ambiguity with ease.

2.4 Herrmann's Whole Brain metaphor

2.4.1. Background

While De Bono uses the Four Wheels of Human Thinking metaphor (see Figure 2.1) to explain information processing and patterning in the brain, Herrmann also worked on human brain patterns and came up with the Whole Brain metaphorical model, consisting of four quadrants for determining thinking style preferences. The following section explores the thinking style preferences (patterning) as developed by Herrmann (1996).

While patterning and the use of patterns are normal functions of the brain, they differ from the creative and innovative thinking normally associated with entrepreneurs. Ko & Butler (2002: 2) quote Shaver & Scott (1991), who argue that some people discover opportunities because of their superior information-processing ability, search techniques and scanning behaviour. They also refer to Koestler's (1976) theory that ideas exist in interrelated matrixes (groups of patterns). In normal thinking, one idea leads to another idea within the same matrix. Such information processing involves linking elements within the same matrix and thus produces no novelty.

When creative thinking is needed, however, one must move from one matrix to another. Such matrices of information include a number of alternative viewpoints

and strength of believe related to amongst others, resources, customers and markets (Ko & Butler, 2002: 2).

It has long been recognised that people have different styles of knowing and thinking and that the left brain deals with the analytical, systematic and logical aspects, and the right brain with creativity and artistic and intuitive information (Lumsdaine & Binks, 2003: 47). However, it was Ned Herrmann, a scientist with a degree in physics who worked in the Human Resource Department of General Electric who, after years of research into creativity and the human brain, realised how specialised the brain is in its functions (Lumsdaine & Lumsdaine, 1995: 75; Lumsdaine & Binks, 2003: 49).

According to Herrmann (1995: 1), the brain is specialised physically and mentally and can be organised into four separate and distinct metaphorical quadrants, each with its own language, perception, values, gifts and ways of knowing and being. These four quadrants represent the four thinking structures of the brain. People are all unique mixes and these preferences result in different expressions of behaviour (Lumsdaine & Lumsdaine, 1995: 76). Herrmann then adopted a four-quadrant model of thinking which enabled a clearer understanding of how people think. Although the four quadrant thinking model was based on the divisions in the physical brain, it is a metaphorical model showing the brain's complexity and versatility when involved in the simplest thinking task (Lumsdaine & Binks, 2003: 49).

The four quadrants can be seen as an organising principle of all our thinking preferences into a sensible whole (see Figure 2.2). Herrmann (1996: 29) explains the Herrmann Brain Dominance Instrument (HBDI) as an instrument that charts your location in the world of thinking style preferences; it is a metaphor for how he believes the brain works. Herrmann (1995: 17) argues that brain dominance is expressed in terms of how we prefer to learn, understand and express something and calls these *cognitive preferences*, or preferred modes of knowing. When

faced with a problem, our preferred mode of knowing is the one most likely to be used in such a situation.

Nieuwenhuizen & Groenewald (2004: 68) used a similar technique of preferential thinking classified into quadrants called the NBI (Neethling Brain Instrument) to determine the training and teaching needs for entrepreneurship education. This instrument is similar to the one devised by Herrmann (HBDI).

When people strongly prefer one mode, they may actually reject / avoid another. For facts-based individuals intuition may be suspect, while an intuitive person may find factual data boring or distracting. According to Lumsdaine & Binks (2003: 49), the stronger our preference for one way of thinking, the stronger will be our discomfort with the opposite mode. People functioning in opposite modes have great difficulty in communicating with and understanding each other because they see the world through different eyes or filters (patterns).

Can we influence or change our preferences? Brain researchers agree that individual differences in behaviour result at least in part from genetically determined differences in the brain. However, parenting, teaching, life experience and cultural influences contribute far more than genetic inheritance (Herrmann, 1995: 19).

In his search for a tool to diagnose thinking preferences he realised that the tools available, for example the Myers-Briggs Type Indicator, were all based on psychological constructs. Herrmann (1993: 43) argues, however, that dominance (handedness) is part and parcel of the normal human condition, both mentally and physically. As a result of this normal dominance, we are “handed”, “footed”, “eyed”, “eared” and, in a general sense, “brained”. He postulates that a model needs to have two functions; firstly, a scale for measuring preferences in mental functioning, just as we measure handedness, and secondly, the ability to relate these measures to specific thinking and learning styles or preferred modes of thinking.

He then developed his own assessment tool, now called the Herrmann Brain Dominance Instrument or HBDI (Lumsdaine & Binks, 2003: 49). Appropriate uses for the HBDI include, but are not limited to, the following areas (Bunderson, 1995: 3):

- Better understanding of self and of others
- Enhanced communication
- Enhanced productivity through teamwork
- A work climate conducive to creativity
- Authenticity
- Enhanced teaching and learning
- Better management
- Counselling
- Building of composite learning groups

Many questions have been asked about how HBDI works and about the validity of the instrument. The next section elaborates on the issues mentioned.

2.4.2 Principles of the HBDI

The Herrmann Brain Dominance Instrument consists of 120 questions to be completed by an individual. These are scored by a computer program at Herrmann International headquarters in North Carolina. The numerical results are also shown in a graphical profile (Lumsdaine & Binks, 2003: 49).

When thinking preferences are assessed with the HBDI, the output is a brain dominance profile. When the relative dominances are marked on axes bisecting the four quadrants, with the four scores connected by lines, the result is a four-sided figure or profile. Circles dividing the quadrants into areas of preference indicate the scale or intensity of dominance (see Figure 2.2). The innermost circle is designated as Region 3. People scoring in this region for a particular quadrant

will avoid thinking in this mode, but this does not mean they cannot think in this manner. A score in Region 2 shows a secondary preference; people are comfortable with using this thinking mode. A score in Region 1 indicates a strong preference for this thinking mode (Lumsdaine & Lumsdaine, 1995: 81)

A question often asked is whether the Herrmann Brain Dominance Instrument (HBDI) actually measures what it purports to measure and if it provides a valid, reliable measure of human mental preferences. The HBDI has been scientifically scored in three separate studies, while more than sixty doctoral dissertations based on the HBDI and the whole brain concept have enhanced the validity of the instrument (De Boer & Steyn, 1999: 98). Bunderson (1995: 1) has also reported the following in answer to these questions:

- Four stable discrete clusters of thinking preference exist. These four clusters are compatible with the model explained in Herrmann (1995)
- The scores derived from the instrument are valid indicators of the four clusters
- The scores permit valid inferences about a person's preferences for and avoidance of each of the clusters of mental activity
- The use of the instrument meets high professional standards, as it has so far been applied effectively in learning, teaching, counselling and self-assessment settings

One can thus conclude that the Herrmann Brain Dominance Instrument is an instrument that can produce consistent data regarding thinking patterns and is an instrument that goes beyond measuring only the left- and right-brain thinking (Herrmann, 1995: 73). It is, however, important to keep in mind that the HBDI is not a test for competencies but an indication of *preferences* and *potential* competencies and that the profiles according to Herrmann are not good or bad, right or wrong (De Boer & Steyn, 1999: 99).

2.4.3 Description of the four quadrants

The whole brain model, although originally thought of as a physiological map, is today entirely a metaphor. The circular display represents the whole thinking brain, which then divides into four conscious modes of knowing, each with its own behaviours (Herrmann, 1995: 63). Each quadrant is labelled with a letter: A, B, C and D, beginning with upper left and running counter-clockwise to upper right. The circular profile evolved out of the linear continuum, which is the reason for going counter-clockwise in this way (see Figure 2.2).

Before taking a closer look at the four quadrants, one needs to keep three ideas in clear focus:

- A given profile is not good or bad, right or wrong. A person's profile represents nothing more than a personal thinking preference at a given time
- HBDI measures preference for a mental activity, which is completely different from measuring for competence
- Profiles tend to stay constant, but they can and do change over time (Herrmann, 1995: 76)

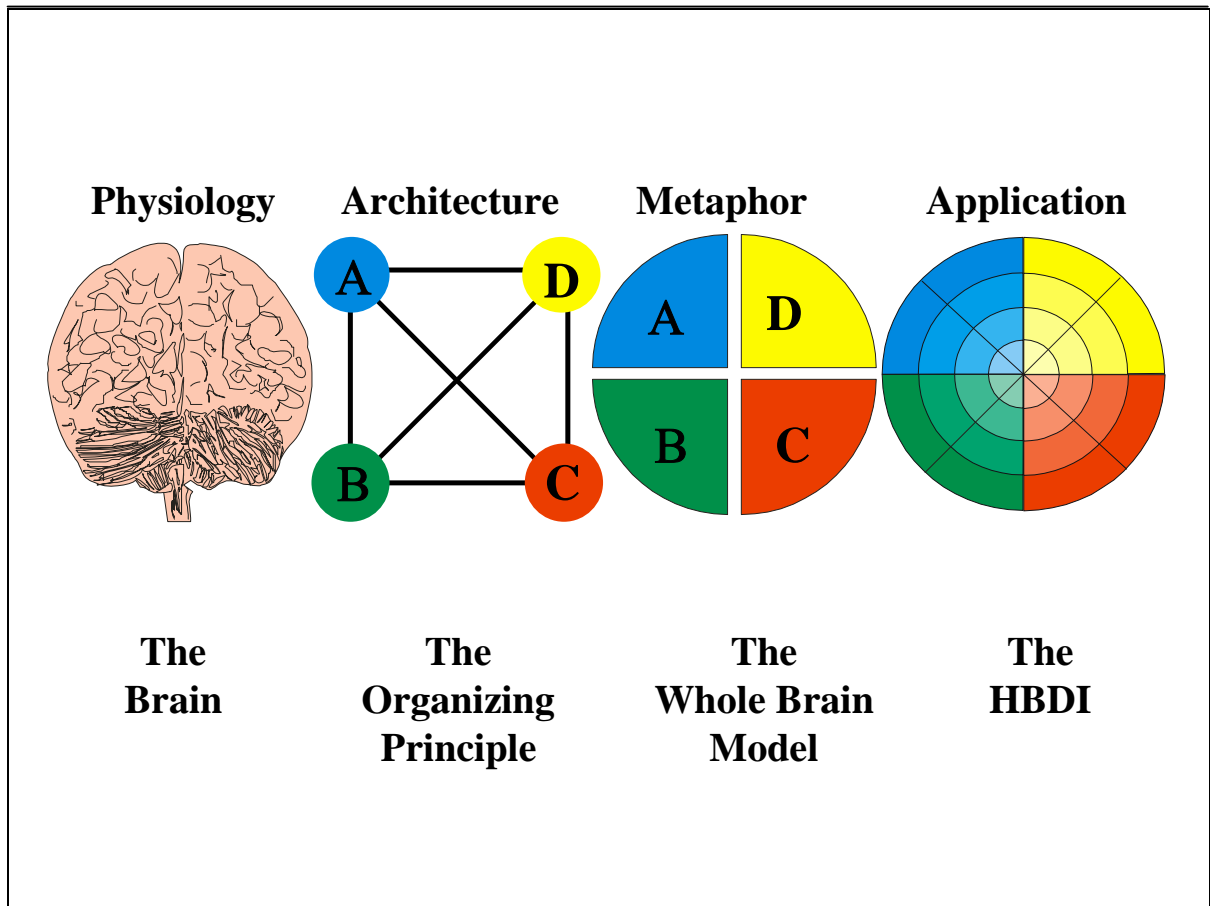


Figure 2.2 HBDI evolved from the metaphoric Whole Brain model, which is based on the four-quadrants organising principle of the physiological functioning of the human brain (De Boer & Steyn, 1999: 99).

Knowledge of one's preferred processing modes illuminates what degree of satisfaction or comfort you may experience in your career when you encounter a learning situation or a difficult interpersonal communication situation (Ned Herrmann International Africa Holdings (Pty) Ltd: 1). It is, however, important to understand that profile data received over years strongly imply that the preferences for each of the four quadrants equal out over the population, so that the population in general represents a composite whole brain (Herrmann, 1995: 78).

In the following section each of the four quadrants is explored separately and in detail as if it were a person's primary or only mode of operating.

2.4.3.1 Quadrant A thinking

People who prefer the A-quadrant thinking normally favour activities that involve analysing, dissecting, figuring out, solving problems logically and getting the facts. In making decisions, they will rely on logic based on certain assumptions combined with an ability to perceive, verbalise and express things precisely. People functioning in the A quadrant tend to reduce the complex to the simple, the unclear to the clear and the cumbersome to the efficient. Facts play a crucial part in verbal statements. Simplifying statements, for example “time is money” may be used for decision-making (Herrmann, 1995: 79).

A-quadrant people are masters of logic and reason. Their output takes the form of principles, mathematical formulas and conclusions about where to go next. In the business environment they honour arguments above personal experience and facts above intuition. They tend to avoid emotions, preferring to stick to facts and logic. They often appear cold, aloof and arrogant and human feelings are often overlooked. Mr Spock in *Star Trek* is an example of an A-quadrant individual (Herrmann, 1995: 80).

In summary, we can conclude that an A-only person will have thinking processes that could be described as: logical, analytical, facts-based and quantitative. If we look at how the person will act, we see a rational self who analyses, quantifies, is logical, critical, realistic, likes numbers, knows about money and knows how things work (Herrmann, 1996: 30). According to Lumsdaine & Lumsdaine (1995: 83), people with quadrant-A thinking prefer to talk about “the bottom line” or “getting the facts” or “critical analysis”.

Engineers, actuaries, accountants and surgeons are a few occupations an A quadrant person may pursue. Their typical communication will include such phrases as “getting the facts”, “the bottom line” and “critical analysis” (Lumsdaine & Binks, 2003: 50).

Single dominant – Quadrant A profile

Analyser

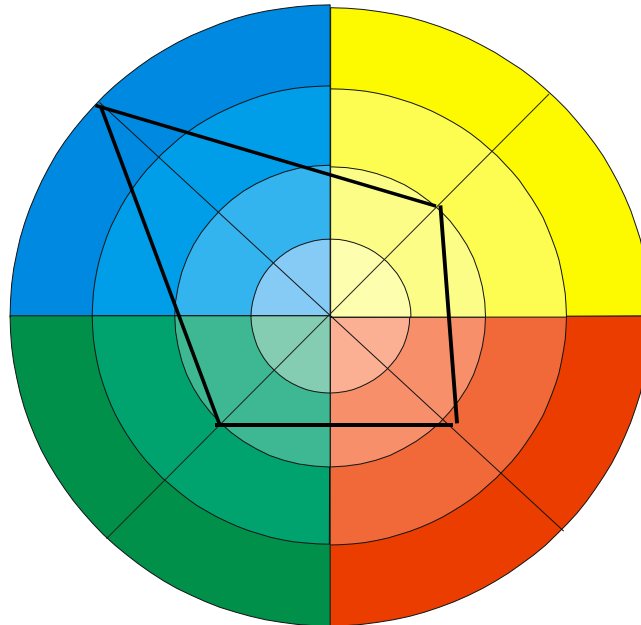


Figure 2.3 A-only Profile

Source: Herrmann (1995: 78)

Relating this to the entrepreneurial process (Chapter 4) one could therefore expect A-only people to be more logical, analytical, mathematical and rational when evaluating an opportunity. The questions that come to mind are:

- Will such individuals focus on different information about the opportunity?
- Will they overlook information relevant to the other quadrants?
- Can this thinking preference constitute a bias?
- Will the specific preference enhance the decision to start-up or not?
- Could it contribute to different misconceptions?

Referring to De Bono's theory that the brain is a self-organising system in which incoming information is linked to already existing patterns, it can be postulated

that people with a preference for quadrant A information will seek familiar information. This results in the use of established patterns rather than being original and creative.

2.4.3.2 Quadrant B thinking

The B-only quadrant has certain similarities to its A-only quadrant. People in these quadrants are both verbal, take a linear approach and reject ambiguity. They both distrust emotions and intuition and like to be in control of their environment and themselves. Yet where A-only focuses on facts, logic and the present, B-only wants to know what has worked in the past. B-only has a hands-on approach and is basically action oriented and may seem to have little respect for A-only intellectual complexities. B-only wants answers only (Herrmann, 1995: 80).

B-only people function effectively in a world of rules where there is a place for everything. They like to make decisions based on long-established procedures. If something has worked before they see it as tried and true (Herrmann, 1995: 81).

One of B-only people's strengths is their ability to focus on one thing at a time and to persist in order to get things done. They are perfectionists when it comes to detail. They are, however, rigorous and demanding towards themselves and their subordinates. They like to keep things safe and predictable and to work according to procedures and precision. They are masters of bringing order out of chaos (Herrmann, 1995: 81).

B-only people are often seen as domineering, boring, small-minded, insensitive and antisocial. They fear to lose control, and in their effort to be in control often intrude and offend. They find change and emotions difficult to handle in the quest for being in control (Herrmann, 1995: 81).

In summary, we can conclude that a B-only person will have thinking processes, which could be described as: organised, sequential, planned and detailed. If we look at how the person will act, we see a safekeeping self who takes preventative action, establishes procedures, gets things done, organises, is reliable, neat, and timely and has plans (Herrmann, 1996: 30). According to Lumsdaine & Lumsdaine (1995: 87), the interesting words quadrant B thinkers use are “breaking the rules” or “leader”, because they notice when people do not follow procedures and they are aware of proper leadership.

Planners, bookkeepers, administrators and clerks are typically the occupations a B quadrant person will enjoy. People with strong B-quadrant preferences talk about “the way it was done before”, “play it safe” and “self-discipline” (Lumsdaine & Binks, 2003: 51).

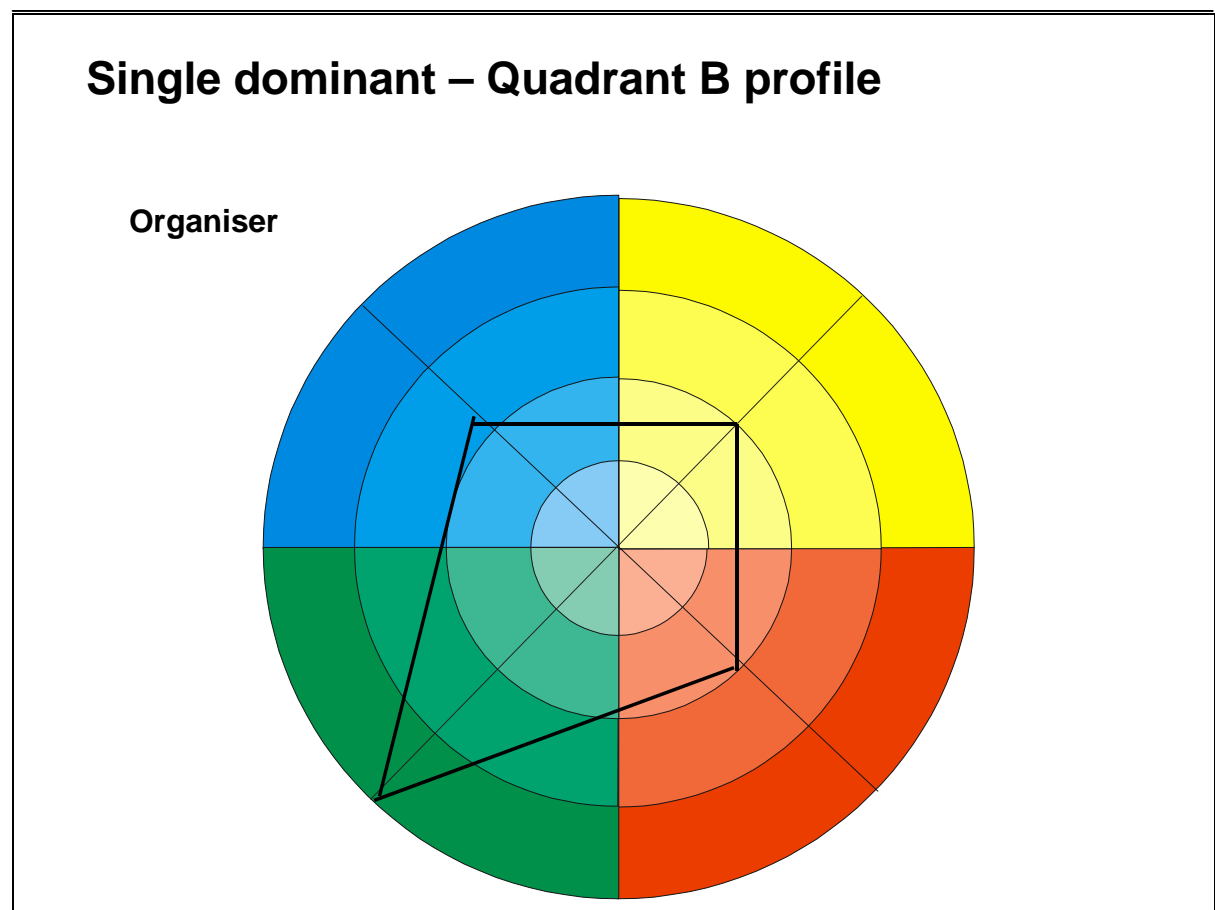


Figure 2.4 B-only Profile

Source: Herrmann (1995: 80)

Relating this to the entrepreneurial process, one could therefore expect B-only people to be more conservative, risk averse, careful and requiring more security when evaluating an opportunity. The same questions that were previously asked come to mind. However, one additional question can be added:

- Will B-only individuals be more risk sensitive when evaluating a potential opportunity?

Referring to De Bono's theory that the brain is a self-organising system in which incoming information is linked to already existing patterns, it can be postulated that people with a preference for quadrant-B information will also seek familiar information. This results in the use of established patterns rather than being original and creative.

2.4.3.3 Quadrant C thinking

C-quadrant people may be looked on as sensitive, receptive and as a moment-to-moment barometer of moods, atmosphere, attitudes and energy levels. When the mood of a person or group changes, C-only people will pick up the emotional current and are normally ready to respond in a soothing and conciliatory way (Herrmann, 1995: 82).

C-only people are aware of the people around them and their primary modes are emotional and spiritual. They want to care for and help others. They are also empathetic, nurturing and musical. Their downside can be seen in their aversion to A-quadrant, B-quadrant and D-quadrant people, owing to their refusal to deal with facts, goals, time and money. Communicating is important to a C-only person, with connections more important than the content (Herrmann, 1995: 83). The C-only person is often seen by others as agreeable, nice to have around and supportive of harmony and beauty, quite often sentimental and always people-

oriented. They are often thought of as non-conformist by A and B standards (Herrmann, 1995: 84).

In summary, we can conclude that a C-only person will have thinking processes that could be described as: interpersonal, feeling based, kinaesthetic and emotional. If we look at how the person will act, we see a feeling self who is sensitive to others, likes to teach, touches a lot, is supportive, is expressive, emotional, talks a lot and feels (Herrmann 1996: 30). According to Lumsdaine & Lumsdaine (1995: 89), quadrant C thinkers talk about “the family” or “teamwork” or “personal growth” and “values”.

Baron (1998: 281) refers to “affect infusion” (how and when feelings shape thought), in which shifts in our current moods can influence our decisions. People will often ask themselves how they feel about something, and if the feeling is positive, decide they like it. This affective state influences judgements and decisions by serving as a heuristic – a convenient rule for inferring with reactions to a specific person, event or stimuli. Linking Baron’s findings to Herrmann’s HBDI, this correlates with quadrant C thinking.

People who prefer the C-quadrant thinking mode tend to enjoy working in groups. Teachers, social workers, nurses, trainers, counsellors and musicians have strong preferences for the interpersonal and therefore quadrant-C thinking (Lumsdaine & Binks, 2003: 52).

Single dominant – Quadrant C profile

Personaliser

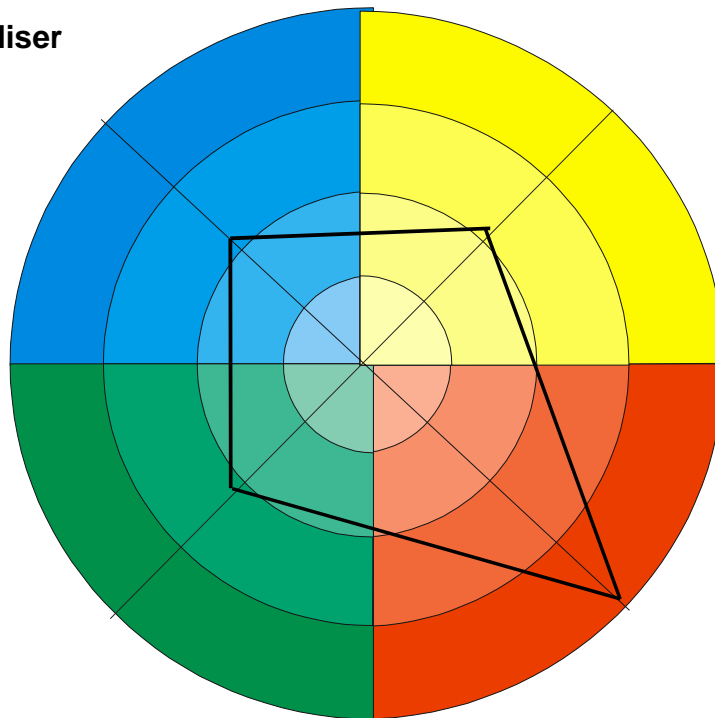


Figure 2.5 C-only Profile

Source: Herrmann (1995: 82)

Relating this to the entrepreneurial process, one could therefore expect C-only people to be more interpersonal, emotional, musical and spiritual when evaluating a potential opportunity. Possible questions to be asked:

- Will C-only people focus on the facts when making the decision to start-up or be led by human issues?
- Will they take the necessary steps and follow procedures?
- Will they have to “feel good” about the opportunity?

Referring to De Bono’s theory that the brain is a self-organising system in which incoming information is linked to already existing patterns, it can be postulated

that people with a preference for quadrant C information will seek familiar information. This results in established patterns influenced mainly by feelings and emotions.

2.4.3.4 Quadrant D thinking

When meeting D-only people the most outstanding attribute you would probably notice is their use of metaphors and your lack of understanding of what they have said. They are original in their ideas and thrive on the excitement of new ideas, possibilities, variety, uncertainty and surprises (Herrmann, 1995: 84).

D-only people are not very good at working with others, because they are largely non-verbal and use pictures instead of words to explain. D-only people find it difficult to adhere to deadlines. They do not like to work in teams, do not like detail and have a fear of structure. Their world consists of visions and images of ideas in metaphorical terms; it is imaginative, colourful, artistic, fanciful, open-ended and sometimes confusing. Understanding is less valuable than experience (Herrmann, 1995: 85).

The challenge for D-only people is to accommodate the realities of the other quadrants and, instead of seeing them as impediments, include them as useful contributions to their own process. D-only people need to understand that they need the rest of the quadrants in order to bring their visions to reality (Herrmann, 1995: 85).

In summary, we can conclude that a D-only person will have thinking processes, which could be described as imaginative and speculative. If we look at how the person will act, we see a self who infers, takes risks, is impetuous, breaks rules, likes surprises, is curious and plays (Herrmann 1996: 30). According to Lumsdaine & Lumsdaine (1995: 92), D-quadrant people will talk about “the big picture” or “playing with the idea” or “innovative” or “cutting edge”.

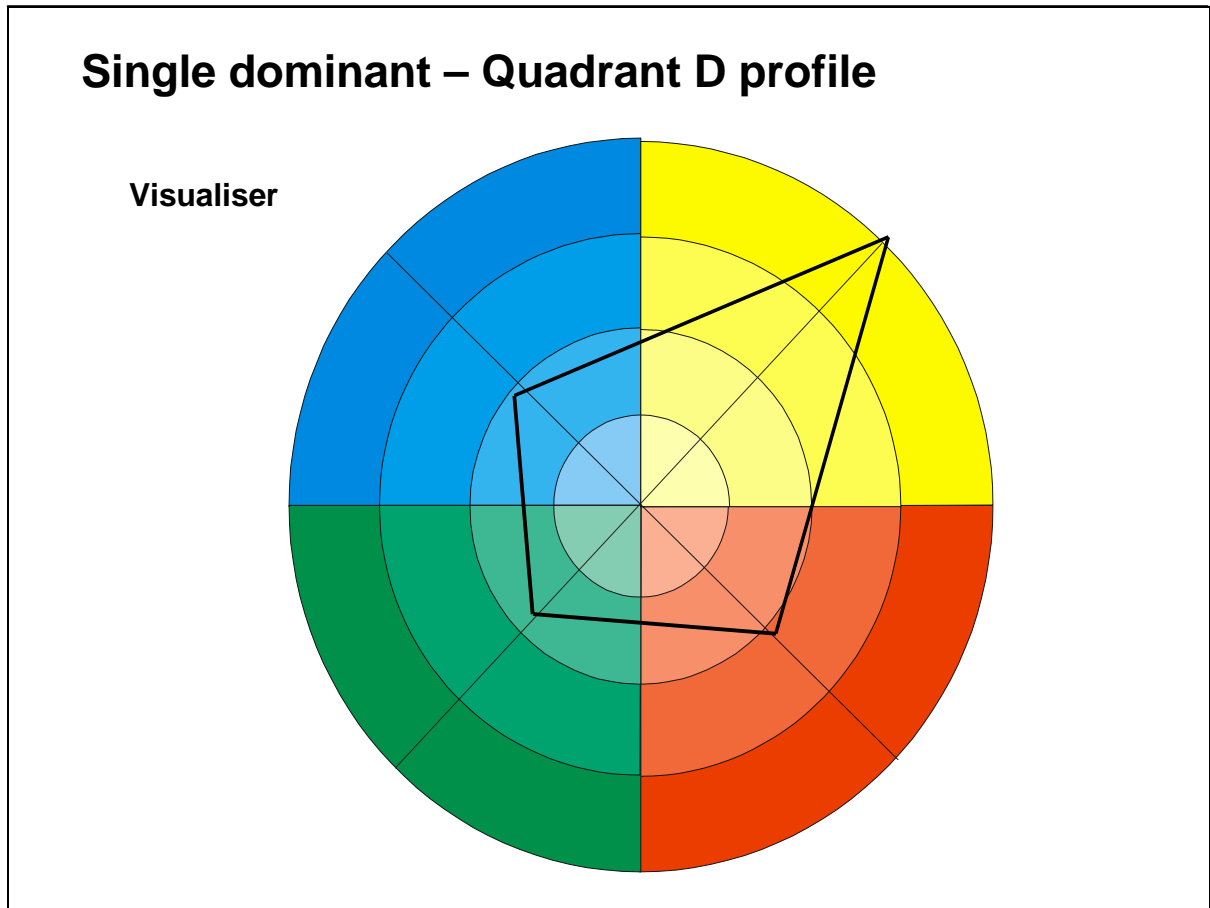


Figure 2.6 D-only Profile

Source: Herrmann (1995: 84)

People with a D-quadrant preference enjoy design, art, architecture and geometry. Explorers and artists typically have strong D quadrant preferences as well as people (such as engineers, researchers in medicine and physics) working in research and development (Lumsdaine & Binks, 2003: 53).

Relating this to the entrepreneurial process, one could therefore expect D-only people to be more creative, imaginative, intuitive, experimental and innovative when evaluating a potential opportunity to start a venture (Herrmann 1996: 36).

Possible questions to be added may be the following:

- Will D-only thinkers go on facts or be guided by how they see the bigger picture?

- Will they make their decision based on intuition or facts?
- Will they be led by the possibilities of the opportunity?
- What role will risk play in their decision?

Referring to De Bono's theory that the brain is a self-organising system in which incoming information is linked to already existing patterns, it can be postulated that people with a preference for quadrant D information will look "outside the box" rather than seek familiar information.

The differing mental preferences show themselves more dramatically in the way we do and do not communicate with one another. Communication with other people can be seen as the most visible manifestation of the brain dominance similarities and differences. The example of "two peoples divided by a common language", referring to the English and Americans, applies to those of us with dissimilar brain dominance profiles. This can result in misconceptions (Herrmann, 1995: 161). Misconceptions are of particular interest for this study and are explored in Chapter 3.

In order for meaningful communication to take place between two people, they need to speak the same "mental dialect" and must be aware of and sensitive to other different mental dialects (Herrmann, 1995: 173). What we say clearly reflects our values, beliefs, assumptions, expectations, biases, prejudices, experiences and brain dominance preferences (Herrmann, 1995: 175).

2.5 Differences in dominance

2.5.1 Single dominance thinking

Single-dominant profiles refer to a person with only one primary dominance (see Figure 2.8), with secondary or tertiary preferences for the other three quadrants.

In the sample used in Hermann's study, only 5% of the population were single dominant, about equally distributed across the four quadrants.

Having a single-dominant profile can be an advantage in that little internal conflict occurs. The single-dominant person tends to see the world through a consistent set of lenses (patterns), leading to perceptions and decision-making processes that are harmonious and predictable.

The other side of the coin is that single-dominant people have to deal with others (95% of the population) who see the world differently from them. Living in harmony with other people requires the ability to see things the way they do. Single-dominant people also find it difficult to move between the quadrants, which can result in a lesser ability for independent creative processing (Hermann 1995: 86).

Relating this to the entrepreneurial process, single-dominant people may tend to overlook the activities of the other quadrants, which may lead to a focus on only one part of the information when faced with an opportunity.

2.5.2 Double dominance thinking

Double-dominant profiles refer to a person with two primary dominances, with secondary or tertiary preferences for the other two quadrants. People with a double-dominant preference constituted 38% of people in the sample. People with double dominance have two strong preferences, either in the same hemisphere or in the cerebral or limbic areas. The following section will describe the differences between the two modes.

2.5.2.1 Double dominant thinking (in the same hemisphere, left or right)

People who have double-dominant profiles in either the right (C & D) or the left (A & B) hemisphere (see Figure 2.9) tend to feel internally integrated. When both dominant profiles are in the same hemisphere, the quality of thinking is strengthened. Both left quadrants, A and B, are verbal and structured in their thinking, efficient, time-oriented, linear and precise. The C and D quadrants are intuitive, nonlinear, experientially oriented, and sensitive to beauty.

On the negative side, these people tend to avoid the mode of the other hemisphere. For the left side, the dominantly right person can seem “flakier” and less reliable to others, whereas the double dominant left appears to others to be more controlling and less agreeable to be around (Herrmann, 1995: 87).

2.5.2.2 Double dominant thinking – cerebral (upper) or limbic (lower)

When the two primaries occur in the opposing hemispheres directly across from one another (see Figure 2.7) in A and D or B and C, a new set of advantages and difficulties arise. Internally the individual may experience turmoil. The major modes are in quadrants that oppose one another, as in ideas versus actions, feelings against thinking, people against things, the future against the past and risk-taking against staying safe. When things move smoothly in their lives, they can integrate the two in decision-making, but under pressure they often find themselves switching from one mode of thinking to another and unable to make a decision, paralysed between them.

The positive side to this scenario is that it can lead to a powerful combination of abilities, such as those of a person who can envision the business as it could be (D), but also do the detailed work needed to get it done (A). A person with the ability to package (B) and present (C) his services directly to a client would be beneficial to any business (Herrmann, 1995: 88).

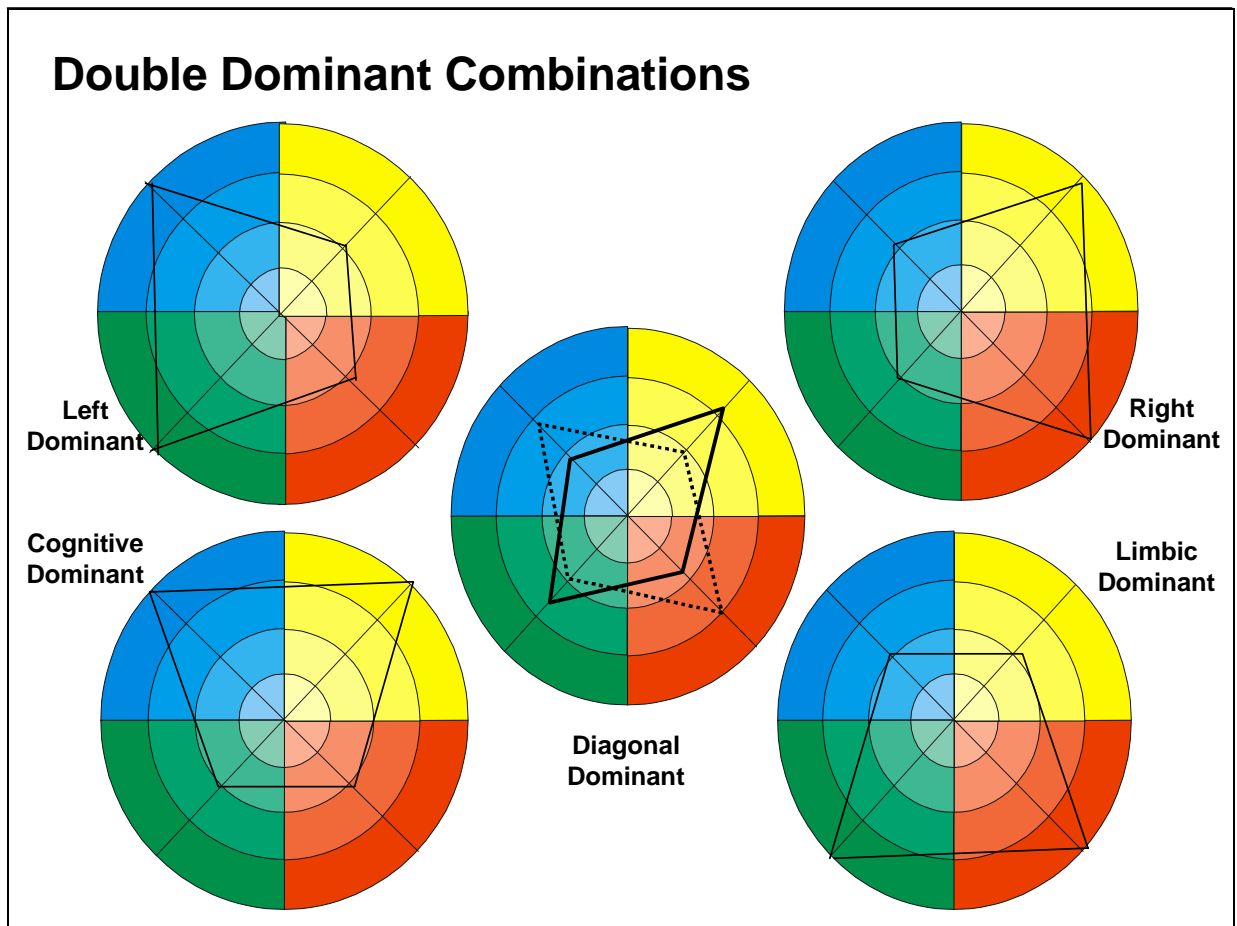


Figure 2.7 Double dominance

Source: (Herrmann, 1995:88)

2.5.2.3 Double dominant in opposite quadrants

Dominant individuals in opposite quadrants (see Figure 2.7) are often described as experiencing a pull between two very different, sometimes contradicting, thinking processes. Ideally, they are able to integrate and balance out these two different perspectives when making decisions. However, under less ideal circumstances there may be a tendency to vacillate or, at worst, to feel paralysed between both.

Relating this to the entrepreneurial process, double-dominant people tend to include more information when solving a problem than single-dominant people, but may still ignore some information relevant to the other quadrants.

2.5.3 Triple dominant thinking

In this scenario a person has only one quadrant that is not primary. These profiles account for 34% of the profiled population. The linguistic ability of triple-dominant individuals is expanded and gives them the ability to speak to three-quarters of the population without any strain (Herrmann 1995: 89).

Relating this to the entrepreneurial process, triple-dominant people may include information regarding three quadrants, ignoring only one type of thinking preference. Although they do not include all information, they tend to have a more balanced or complete perception of the possible opportunities and information than the double-dominant person.

2.5.4 Quadruple dominance

Having all four quadrants as dominant quadrants occurs in only 3% of the profiled population. This gives these people a unique advantage and enables them to communicate freely and without any strain to all the people in this population because they do not experience aversion to any operating mode. They tend to have a balanced view in any given situation.

Relating this to the entrepreneurial process, quadruple-dominant people have the ability to take all types of information into account when evaluating or deciding to pursue an opportunity. Such people look at a possible opportunity with a whole-brain perspective that may give them the competitive edge, because they do not overlook any type of information. This may however also result in an inability to make decisions due to the selection of which information is relevant or not.

2.6 Conclusion

In conclusion, it is important to acknowledge the fact that many diagnostic tools and descriptive analyses of human personality (Myers Brigg and Hermann Brain Dominance are two of them) have been developed in order to identify categories of cognitive approaches to problem-solving and communication patterns (Leonard & Strauss, 1997: 113). All the instruments agree on the following basic points (Leonard & Strauss, 1997: 113):

- Preferences are neither inherently good nor bad
- Distinguishing preferences emerge early in our life and remain relatively stable through the years
- We can learn to expand our repertoire of behaviour
- Understanding others' preferences helps people to communicate and collaborate

While this study investigates whether thinking styles have an influence on decision-making where a decision to pursue an opportunity has to be made, Chapter 2 describes two things:

- The concept of patterns (matrixes, lenses, thinking styles and preferences)
- The patterns described by HDBI

According to Lumsdaine & Binks (1998: 47), the thinking styles of people characterise their approach to problem solving. One person may carefully analyse a situation before making a rational decision based on available data; another may see the same situation in a broader context and will look for alternatives. One person may be detailed, cautious, step-by-step, using the available procedures; while another has a need to talk the problem over with other people; while yet another will solve the problem intuitively. However, each of us uses our approach based on our prior experience and knowledge and, according to De Bono, our patterning system.

If an entrepreneur does link the new opportunity to the already known, we can hypothesise that a thinking style acts as a natural heuristic when the entrepreneur uses and acquires information necessary to solve the problem of starting or not starting a business. The next chapter explores heuristics and biases in more detail.