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An Examination of the Role of Intuition in Individual Decision Making in Organisations


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1.0 ABSTRACT

The feeling of knowing without knowing has often been described as listening to your heart, trusting your gut, or using your intuition. As decision makers face more turbulent and complex environments, rational analysis may not always be able to assist in yielding optimal results. In cases where sufficient data is not available or the situation is one that the decision maker or the organisation has not faced before, the decision maker may utilise intuition to guide them through uncertainty (Lank & Lank 1995:19).

This paper looks at the role that intuition plays in individual decision making in organisations. The primary research for the paper consisted of an examination of strategic decision situations with four key decision makers. For the purposes of this paper a strategic decision was defined as one ‘with important consequences and resource demands for the organisation’, (Nutt, 1998:198).

Following analysis of the decisions researched, three hypotheses are put forward for discussion and exploration in future research. The basis for a conceptual model for the use of intuition in decision making is presented and discussed. The report’s findings conclude the following: intuition plays a key role in decision making in organisations; the use of intuition is linked to experience; decision makers in organisations use ‘informed’ intuition when making decision and rational decision making and intuition should be viewed as complementary components in decision making as opposed to mutually exclusive processes.

2.0 RATIONAL AND INTUITIVE DECISION MAKING

2.1 INTRODUCTION

The predominant discourse in academic writing in business over the previous number of centuries has been that of economic theory. Economic theory has focused on just one aspect of Man's character, his reason, and particularly on the application of that reason to problems of allocation in the face of scarcity, (Simon, 1978). This perspective had meant there had been little, if any, room for entertaining the idea that key decision making processes could be guided by subconscious processes. However it is now becoming evident that non-logical¹ decisions can be made where biases or social influences may be more dominant decision making factors as opposed to overtly logical process.

The axiom that the organisational actor is a rational creature that always makes decisions in a linear and logical fashion is under attack from various academic quarters. There is more acceptance of the fact that the irrationality that is 'integral to human nature' (Coutu & De Vries, 2004:65) is as evident in the business environment as it is in our social settings. Strides in the field of neurology in the past twenty years has proven that much, if not most, of cognition occurs automatically outside of consciousness, (Bargh & Chartrand, 1999). This being true then of the multitudes of decisions that we make everyday, the majority of them are subconscious. It logically follows that many of the decisions that are made in business must be subconscious.

¹ From Barnard's 'Function of the Executive' (1938 cited Simon 1987:57), in which he terms non-logical processes as 'those not capable of being expressed in words or as reasoning, which are only made known by a judgement, decision or action'; this does not mean that the processes were irrational or illogical.

The next section examines some of the key literature on decision making and also the literature detailing the role of intuition in business decision making.

2.2 THINK - RATIONAL DECISION MAKING

The philosophy of organisational research has been built on the back on economics and accountancy. Both traditions (economics and accountancy) are steeped in a history of research by numbers, and the assumption that the human player is rational, and makes rational decisions. It is for this reason that research into the area of intuitive decision making has met with a degree of scepticism. While the rational human assumption has been deconstructed in recent times, the rational decision making approach still plays a key role in the business environment.

The next section looks at the both the logical models of decision making that have dominated academic writing in the decision making arena, and specifically reviews the individual decision making models that exist.

2.2.1 Broad context of decision making

Figure 2.0 displays the academic areas that are involved in the study of decision making. There is a dotted line connecting Neurology, Cognitive Science, Social Science and Organisational Behaviour areas to acknowledge the fact that no scientific discipline can be studied in isolation.

Barnard was the first writer to separate individual from organisational decision making, (Buchanan & O'Connell, 2006). He wanted to better understand why some people act in the firms best interests as opposed to their own. Building on this split, and borrowing

from Daft's (2001) book 'Organisational Theory and Design' Figure 2.0 shows decision making literature split between organisational and individual. The classification of theories under each of these sections is from an extensive review of the literature on decision making. The heavy fixed line in the graphic shows the path for this specific report but it also acknowledges the multitude of frameworks that exist in this rich area of research.

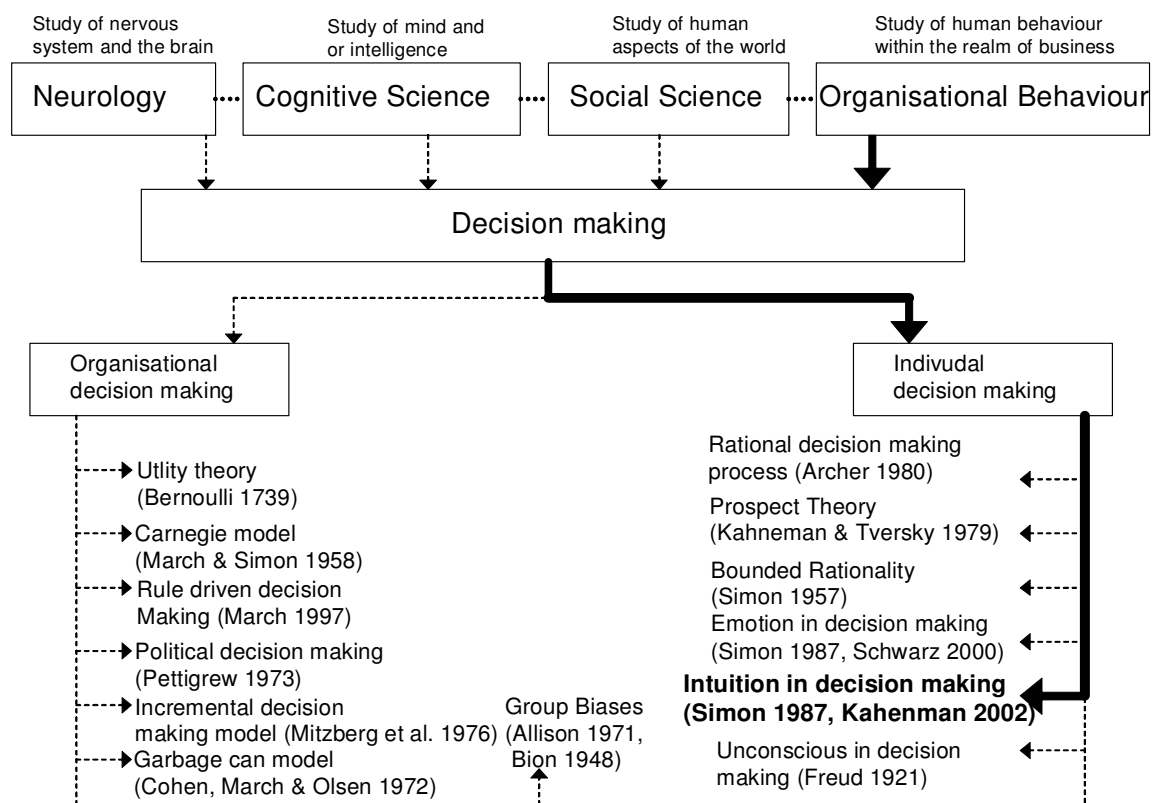


Figure 2.0 – Key theories in Organisational and Individual decision making. Separation of Organisational from Individual decision making taken from Daft (2001)

As well as Organisational Behaviour, areas such as Neurology, Cognitive Science and Social Science are listed as stakeholders in researching decision making. The area of Social Sciences, has in recent years, encroached into many other academic areas. Once the principle that the decision making actor can be irrational (as perceived by other people, but not necessarily by the decision maker him / her self) has been accepted in the

organisational setting, it makes sense that research in the area should incorporate the tools that social sciences have used to study the human condition.

2.2.2 Individual decision making models

Theories on decision making have evolved in the last century. Langley et al. (1995) described the evolution of ‘decision making man’. Figure 2.1 below details the evolution of ‘decision making man’ and characterises some of the traits associated with each evolutionary genre.

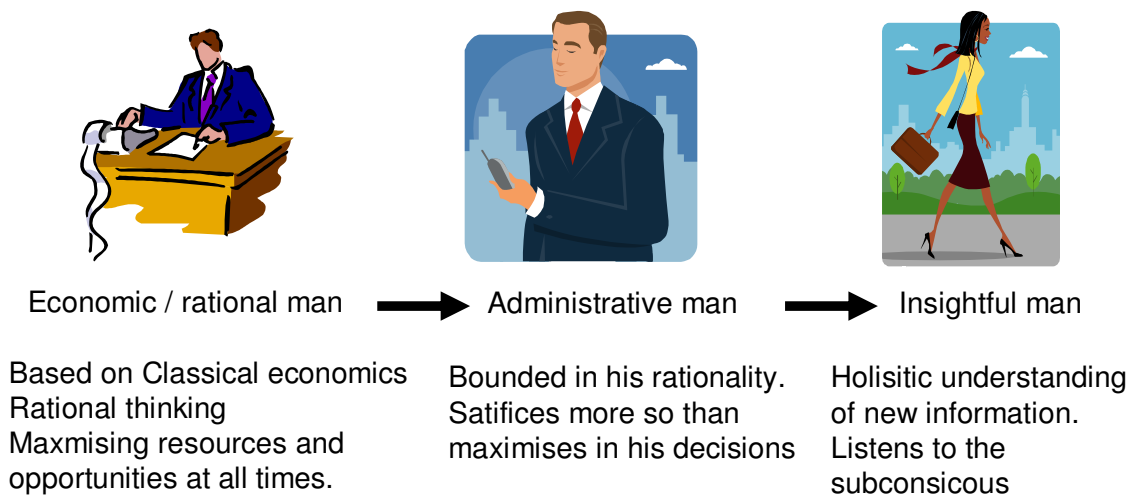


Figure 2.1 Evolution of ‘Decision making man’ adapted from Langley et al. (1995)

For Simon (1957), the notion of economic man’s characteristic of classical theory is plainly at odds with the view of man revealed by the psychologists and, indeed, that which emerges from observations in everyday work experience, (Burrell & Morgan, 1979). His solution was to introduce ‘administrative man’, a decision maker that was based on the assumption of bounded rationality, that the decision maker had limited capacity to process information and therefore often satisfices rather than maximises in his decision making.

Langley et al. (1995) looked to move the evolution of decision making man forward another leap. They felt that ‘administrative man’ was still shackled in a cerebral process dominated by conscious and analytical thought processes. To resolve this, they introduced ‘Insightful man’, who listens to the voices emanating from his or her own subconscious, and who has an ability to grasp instantly an understanding of the whole structure of new information, (Langley et al. 1995).

2.2.3 How rational is rational decision making anyway?

Even individuals who consider they adopt a completely rational approach to decision making are prone to biases. A number of these traps for the unwary decision maker are discussed next.

2.2.3.1 Confirmation bias

Confirmation bias is when decision makers seek out information that agrees with their thinking on a matter and avoid all contrary information to their opinion. It is frequently quoted as an inherent danger to decision making, and particularly intuitive decision making, (Hammon et al., 2006, Pfeffer & Sutton 2006, Sadler-Smith & Shefy, 2004, Bonabeau, 2003). The tendency people have to seek confirming evidence – whether in logical problem solving tasks, job interviews, classroom settings, or otherwise – is widespread and well established, (Plous 1993).

We naturally give more weight to information that confirms our assumptions and prejudices while dismissing information that would call them into question, (Bonabeau 2003). In decision making this can lead to tunnel vision in relation to the specific issue in

question. The decision maker may block, not listen to, or remove people whose views conflict with their own interpretation of reality.

This bias has been widely linked to well known decision making disasters such as the Bay of Pigs invasion and the Challenger Space Shuttle disaster. The cabinet of John F Kennedy refused to listen to any conflicting evidence as to the success of the planned invasion of Cuba, (Janis, 1982). In a more recent example of confirmation bias, Kruglanski (1986), outlined the dangers of the phenomenon in relation to the Challenger Space Shuttle disaster in 1986. Kruglanski believed that in the case of NASA and their decision making process leading up to the infamous launch, reality was simplified to such an extent, that all alternative situations were not weighed up, and the fatal mistake was never even considered. It will be interesting to see if history will assign this type of bias to the decision by the United States and the United Kingdom to go to war in Iraq in search of ‘weapons of mass destruction’ that did not exist.

The observation that humans have a blind spot for opposite possibilities is not a new one. In 1620 Francis Bacon wrote, “it is the peculiar and perpetual error of human intellect to be more moved and excited by affirmatives than by negatives”, (Myers 2002:117).

2.2.3.2 Anchoring bias

Anchoring bias refers to the disproportionate weight that we assign to the first information that we come across in relation to a problem. From his Nobel Prize winning lecture, Daniel Kahneman goes as far as stating that “anchoring effects are among the most robust phenomena of judgement, and overweighting of salient values is likely to be the

mechanism that explains why low-probability events sometimes loom large in decision making”, (Kahneman 2002:482).

An anchor can occur in completely non-rational ways. An experiment carried out by Tversky & Kahneman (1974 cited in Plous 1993), showed this to be the case. They set up a ‘Wheel of Fortune’ that basically listed numbers one to a hundred. The wheel was rigged to stop at either 10 or 65. People undertaking the experiment were asked to spin the wheel and if it landed on 10 they were asked, did they think the percentage of African nations in the U.N is higher or lower than 10? And after they answered they were asked, what is the exact percentage of African nations in the U.N?

If the wheel landed on 65 they were asked did they think the percentage of African nations in the U.N is higher or lower than 65%? And then they were asked, what is the exact percentage of African nations that were in the U.N.? What Tversky & Kahneman found is that for the people for whom the wheel stopped at 10, their median estimate of the actual percentage was 25%. For those where the wheel stopped at 65, their median estimate was 45%. This type of experiment has been replicated (Hammond et al., 2006 Plous, 1993), and the results are consistent in that even completely non-rational anchors can have a bearing on an individual’s decision process.

In decision making, anchoring can be a problem in that the mind may give too much credence to an event that occurred in the past. A decision maker may for example give too much emphasis to sales figures from last year, without fully looking into the specific circumstances currently at play, when forecasting sales for future years. It has been shown that experts are not immune to the effects of anchoring, (Plous, 1993).

2.2.3.3 Hindsight bias

Hindsight bias can also be described as 'I knew it all along bias', it is the tendency to view what has already happened as relatively inevitable and obvious, without realizing that retrospective knowledge of the outcome, influences one's judgements, (Plous, 1993). It is a bias that many gamblers and stock investors alike, suffer from regularly. This bias is of particular note for this research paper, as all the research is carried out post decision and therefore is open to hindsight bias.

Hindsight bias experiments show us the impossibility, once individuals know an outcome, of simply reverting to their former state of mind, (Myers, 2002). In one experiment on hindsight bias, Fischhoff & Beyth (1975 cited in Plous 1993), gave students a questionnaire on the likely success or otherwise of then President Nixon's trip to China. Once the trip had taken place the students were again asked to fill out the same questionnaire, and to answer the same as they had in the previous phase. They were also asked the extent to which they believed each statement came to pass e.g. Nixon to declare the trip a success.

What was found was that students remembered having assigned higher probabilities than they actually had to outcomes they thought had occurred, and lower probabilities to outcomes they believed had not occurred. When the questionnaire was taken three to six months later, up to 84% of the respondents showed hindsight bias.

Rational decision making models have provided an appearance of certainty to the decision making process. In a world where managers are frequently required to present an impression of being rational, calculating and systematic decision makers, these models have provided them with a framework within which to do so. However since our

understanding of the complexity of the decision making process has evolved, and with the demise of *Home Economicus*, (Rosanas 2007:10) who possessed unbounded rationality, the time to reconsider how decisions are actually made and the role of intuition there in, has arrived.

2.3 BLINK – INTUITIVE DECISION MAKING

In the Western business world, governed for centuries by reason, the pendulum seems to be swinging back to the midpoint, allowing for the reintegration of such a fuzzy concept as intuition (Sinclair & Ashkansay, 2005). A long standing cornerstone of management theory, the belief that careful analysis yields choices that are superior to those coming from intuitive processes has recently been questioned by some academics, (Behling & Eckel, 1991). Intuitive decision making once thought to be outside the realm of scientific analysis, is now under scrutiny in areas as diverse as Neurology, Philosophy, Cognitive Science, Social Science, Psychology and Organisational Studies.

Defining intuition has proved to be a challenging task. Vaughan (1979:v), for example, notes “the impossible task of translating intuitive learning into the rational, linear language of words”. Intuition in management has been discussed explicitly as far back as Barnard’s ‘Function of the Executive’ (1938 quoted in Simon, 1987:75), in which he terms non-logical processes as “those not capable of being expressed in words or as reasoning, which are only made known by a judgement, decision or action”. In the intervening years the importance of non-logical processes in decision making was downplayed. The literature slanted more towards logical and sequential decision

processes as opposed to anything as intangible as intuition. Recent research into intuitive decision making has had a decidedly positive slant, (Miller & Ireland, 2005).

The next section looks at the powers of intuition but also acknowledges its potential pitfalls.

2.3.1 The power of intuition

When people are faced with a complicated judgement or decision, they often simplify the task by relying on heuristics (general rules of thumb). In many cases these shortcuts yield very close approximations to the ‘optimal’ answer. If intuition is, as Bonabeau (2003:118) suggests, “the subconscious integration of all the experiences, conditioning, and knowledge of a lifetime, including the cultural and emotional biases of that lifetime”, this means intuition gives instantaneous access to knowledge and memories that may have long since been outside conscious thought. The information of a lifetime is available instantly without any conscious knowledge.

While reviewing the literature on intuition two recurring themes have been prominent when discussing the benefits of intuitive decision making (Dane & Pratt, 2004, Isenberg, 1984, Hayashi, 2001, Shirley & Langan-Fox, 1996, Novicevic et al., 2002, Burke & Miller, 1999, Sinclair & Ashkanasy, 2005, Gladwell, 2005, Myers, 2002, Kahneman, 2002, Behling & Eckel, 1991, Sadler-Smith & Shefy, 2004, Miller & Ireland, 2005, Agor, 1986 and Patton, 2003):

- Its speed compared to logical decision making
- Its usefulness in novel or unfamiliar settings.

The need for speed

In recent decades businesses have had to face more complex challenges due to various factors including turbulent environments, rapidly changing technology, a global and always open marketplace and the openness of information available on the internet (Sinclair & Ashkansay, 2005, Lank & Lank, 1995, Andersen, 1999 and Bonabeau, 2003). In light of this, the question must be asked, are rational decision making models useful in a world where time pressure is constant or do managers need to rely on something more, to assist them in decision making?

When time pressure is high, decision makers use simplifying strategies and attend to a small number of cues, (Plous, 1993). Deciding intuitively can expedite decisions, a direct benefit of intuition is that it speeds up the decision making process. Put simply, by reducing the amount of data required, the decision maker experiences a faster decision making process, (Burke & Miller, 1999). This is an obvious benefit over the logical decision making models in that it forgoes the incremental / analytical steps that are inherent in the majority of existing decision making models. It can also be useful as it can concentrate the mind of the decision maker to focus on what is important given the little time available to them.

One experiment from the best selling neurologist Antonio Damasio (1994) has shown that intuitive thought can even pre-empt conscious thought. In the experiment people played a gambling game selecting cards from four different packs. The packs were set so that if the player picked from deck A and B it resulted in a loss, whereas choosing cards from decks C and D would result in gains. Damasio was interested in the ways in which participants

appeared to learn unconscious decision behaviours to avoid decks A and B. The participants were measured via skin conductors for 'micro sweating', which can pick up emotional responses that are below the level of consciousness.

Damasio found that it appeared that a tacit awareness below consciousness triggered a somatic response (manifested as micro-sweating) to the effect that the decision to choose from A and B was undesirable. This tacit system appeared to be activated before participants were consciously aware they made the decision. The participants did become consciously aware that A and B were best avoided but what Damasio outlined was that their intuition, through sensory affects, informed them of this fact prior to them being consciously aware of it, (This experiment has been quoted in Maitlis & Ozcelik, 2004, Sadler-Smith & Shefy, 2004 and Pham, 2004).

Damasio (1994) suggests that decision making in humans is often assisted by somatic markers: bodily states (or brain representations thereof) that correspond to emotional reactions to possible courses of action, effectively reflecting the goodness or badness of the outcomes associated with each course of action. Damasio, in defining intuition places more emphasises on the sensory and affective elements.

As well as describing intuitive thought as fast, it has also been described as more efficient from a neurological point of view. The brain is consistently attempting to make its own processing more efficient by transferring conscious processes to the subconscious. Neurologists agree that consciousness is an energy intensive state. Roth (2004:36) describes this process best when he states that "the brain is constantly trying to automate processes, thereby dispelling them from consciousness, in this way, its work will be

completed faster, more effectively and at a lower metabolic level. Consciousness, on the other hand, is slow, subject to error and ‘expensive’”. This is in line with Kahneman’s System 1 / 2 model that shows that Intuitive thinking is ‘Fast’ whereas Reasoning is ‘Slow’.

Use in novel situations

As detailed at the start of the previous section, businesses are facing more complex and rapidly changing business environments. When a decision maker has no prior direct experience from which to make a decision what do they turn to? When explicit cues are lacking because policies, rules, guidelines, or expert guidance are absent intuitive decision making becomes more relevant and applicable, (Burke & Miller, 1999).

From a study of over 2,000 managers Agor (1986:9) looked at specific situations where a decision maker’s intuition proved most useful. They included:

- o When a high level of uncertainty exists
- o When little previous precedent exists
- o When variables are less scientifically predictable
- o When facts are limited
- o When facts don’t clearly point the way to go

Reviewing the foregoing characteristics, and acknowledging the fact that decision makers are increasingly forced to make decisions in rapidly changing landscapes with imperfect information, it can be said that decision makers are more likely to be put in situations where intuitive decision making may be the preferred or optimal decision choice method.

Our ability to be able to decipher or decide in new and unfamiliar situations has been termed by some (Myers, 2002 and Gladwell, 2005) as ‘thin slicing’. Gladwell (2005:23) describes thin slicing as “the ability of our unconscious to find patterns in situations and behaviour based on very narrow slices of experience”. He uses the example of psychologist John Gottman who on viewing a video tape of married couples having a conversation for 15 minutes has reported 90% accuracy levels of predicting whether the couple will still be married 15 years later.

Thin slicing in an organisational setting can be considered as reviewing the limited facts available to the decision maker, and drawing on experience to make a decision, or give direction in a novel situation, or a situation with limited information. The experience of the decision maker has been discussed as a key factor in intuitive decision making. Myers (2002:56), highlights this point, saying, “Novices see information in isolated pieces, experts see large, meaningful patterns”. Simon, (1987).

This being the case, the more experience a decision maker has in relation to even novel situations, the more likely they will be able to draw on their intuition, in order to better guide them, as it is “analyses frozen into habit”, (Simon, 1987:63). So rather than intuition being thought of as a concept too elusive to define, in relation to intuitive decision making in organisations, we can consider that intuitive decision making draws from knowledge that is stored away in the subconscious. Individuals utilise this knowledge bank in many situations, but especially in situations where logic or reason has not pointed the direction to take.

3.0 METHODOLOGY

3.1 Selection of methodology

This section provides an overview of the research methodology including a profile of the interviewees, and a description of the decisions selected for examination. Given the subjective nature of intuition, this research needed to take place within a paradigm that accepted that multiple realities can exist. The interpretivist belief would be that while realities are apprehendable they are in the form of multiple, intangible mental constructs, socially and experientially based, local and specific in nature, (Guba & Lincoln 1994).

Interviews are a research mechanism commonly associated with the interpretivist approach and also when conducting qualitative research (Saunders et al., 2003, Krauss, 2005, Flick, 1998, Miles, 1979 and Tucker, Powell and Meyer, 1995). In selecting interviews as the primary research method the researcher adheres to the belief that “face to face interaction is the fullest condition of participating in the mind of another human being, understanding not only their words but the meaning of those words as used by the individual” (Lofland & Lofland, 1996 cited in Krauss, 2005:764).

Semi-structured interviews were chosen for this research due to the fact that they are used in order to conduct discussions and understand the relationship between variables, (Saunders et al., 2003). A review of similar studies indicated that others have used semi-structured interviews when researching decision making, (Eisenhardt, 1989 and Nutt, 1998, 2002) and in particular when researching intuition in decision making, (Isenberg, 1984,; Clarke, 2001, Burke & Miller, 1999, Hayashi, 2001, Agor, 1986, Landry, 1991 and Little, 1991 cited in Sinclair & Ashkanasy, 2005).

In positioning this research with the less dominant school of interpretivism the researchers take solace from fact that Herbert Simon, (1987:347) in his Nobel prize winning lecture, took a snipe at the position of classical / positivism school in relation to studying behaviour:

‘The classical theory of omniscient rationality is strikingly simple and beautiful. Moreover, it allows us to predict (correctly or not) human behaviour without stirring out of our armchairs to observe what such behaviour is like.’

Simon (1987) believes that the predictive power of classical theory comes from characterizing the shape of the environment in which the behaviour takes place and assuming perfect rationality on the part of the decision maker. This point is also echoed by Mintzberg, (1979) who believes that as long as organisational researchers pretend that they can hold all other things constant, in the way that positivist research can control their environment, they will never have closure. Behavioural theories of rational choice do not have this kind of simplicity. They make modest and realistic demands on the knowledge and computational abilities of the human agents.

3.2 The company, interviewees and the decisions researched

The company in which the research takes place is a leading provider of telecommunications, providing a comprehensive range of advanced voice, data and Internet services. The company is focused on core phone service products, the roll out and promotion of broadband services nationwide, as well as competing in the mobile market, which it re-entered recently through acquisition of an existing operator.

The research centres around four decision makers and four strategic decisions that they were asked to consider in advance of the interview. Questions focused on the decision making process initially. This was followed by probing interviewees on their views and use of intuition in decision making. The following is a summary of the interviewee profiles and the decisions they chose to discuss:

Interviewee A / Decision A: Interviewee A worked with the company in question for six years and has a total of ten years industry experience. At the time of the decision in question the interviewee was Head of Product for Broadband therefore had the lead in the decision in question. The decision chosen in this instance was the launch of a broadband product. Broadband products up to this time in the Irish market place had been ‘Always on’, in that the customer paid a flat monthly fee for usage. This decision centres on the launch of a product that would be time based, in that the user would pay a lower fee for a certain number of hours of broadband and after this time elapsed, they would pay a per minute charge.

Interviewee B / Decision B: Interviewee B worked with the company in question for 20 years. During this time the interviewee held various senior positions in the company which included working in the following fields; engineering, network design and development, international business development and corporate strategy. At the time of the decision in question, the interviewee was Head of Retail Operations so ensured decisions relating to pricing went through Interviewee B. The decision chosen was in relation to a reduction in pricing for a key product in the company’s portfolio, namely broadband. The decision also covered the task of combining broadband with other products to form what is known as a ‘bundle’ offering.

Interviewee C / Decision C: Interviewee C worked with the company for eight years. They held the position of Sales Director for six years before moving to the post of Consumer Market Director. This position assumes ownership of a portfolio worth in the region of €600 million per annum. Prior to working with the company, interviewee C was Sales Manager for a large food and confectionary company for 12 years. The decision selected by the respondent was to look at how the company had to strategically change to respond to the opening up of the Irish telecommunication industry. This decision revolved around how to deal with competitors and a rapidly changing market. The focus of the decision maker was in the consumer market of the telecommunications industry.

Interviewee D / Decision D: Interviewee D worked with the company for 14 years. The respondent held various senior positions in the company such as Vice President of United States Operations, Commercial Director Hosting, Head of Sales and Marketing Wholesale and Managing Director of a wholly owned subsidiary. They chose to discuss a decision that required an alignment in strategy or amalgamation of two business units within the company. One was a wholly owned subsidiary that had operated independently up until this time and the other was an existing business unit within the company. Both were offering similar service to the same market sector.

The researchers acknowledge the limitations of this research as a limited number of decision situations were examined. In addition all the interviewees were employed by the same company. Nevertheless the researchers consider that the in-depth interviews undertaken add to our understanding of the complexity of the decision process and the role of intuition therein.

4.0 RESEARCH FINDINGS

4.1 INTRODUCTION

In reviewing whether the theory matched the practice in the use of intuition the following research questions were asked. Firstly are there specific circumstances when decision makers tend to use intuition in decision making? Secondly what are the dangers of using intuition in decision making?

4.2 ARE THERE SPECIFIC CIRCUMSTANCES WHEN DECISION MAKERS TEND TO USE INTUITION IN DECISION MAKING?

The discussion in relation to this research question will examine the data to see if the research found examples of the decision makers using intuition when describing their decision process. This was approached before any specific questions on intuition were asked. The findings are compared with those detailed in the literature on ‘when’ decision makers tend to use intuition.

For two of the respondents, traits of how they viewed intuition came across when they described their decision process:

‘Decision making can be instant, i.e. I know there’s something that is of a tactical nature that is within the realm of my control then I can make a decision on it’ (C)

'It would have been my gut reaction at the start, that one of the subsidiaries is centrally strategically significant to our company.' (D)

No such examples were found in the case of interviewee A or B prior to the probing questions relating to intuition. After the intuition questions were asked both offered suggestions as to how they used intuition in decision making.

'If it's a decision that's like not a big decision or you know something where I just know from experience, it doesn't even enter my head I just make the decision.' (A)

'Well I think all of us use intuition to an extent and even going back to the case that we discussed, the various debates that we have had, we stopped with the scenario analysis on many occasions and said 'it doesn't feel right', like that kind of growth, or that kind of market share or that pricing just doesn't seem credible.' (B)

One explanation as to why interviewees A and B did not describe any intuitive traits in their decision making process is that both described themselves as logical thinkers in relation to decision making:

This is of note because when A and B were asked for a definition of intuition they responded that intuition was an experience related phenomena, a logical way of viewing intuition. Interviewees C and D responded with more affective traits when defining intuition, and also mentioned these affective traits when discussing their decision making process.

This highlights the interdependence of intuition and logical analysis. The more 'logical' leaning decision makers A and B, while detailing their logical tendencies also acknowledged the use and necessity of intuition in their decision making process. While the other interviewees C and D, who both exhibited traits of intuitive decision making

prior to the question on intuition, acknowledged the importance of analysis in order to ensure the accuracy of their intuitive impressions.

This section showed that in this research, traits of intuitive decision making were found, to varying degrees, in all the interviews. In reviewing intuition's use in novel situations it was beneficial that all the decisions researched took place in novel situations. Each of the decision makers were faced with unknowns in relation to the environment within which they needed to make the decision. A clear pattern emerged of how intuition is used in the novel situations. Initially the decision maker would consider what information is at hand on the situation and what information is relevant to the situation. In the absence of such information, the decision maker would consider possible ways forward, drawing on experience.

Once ideas were formed, the decision makers engaged with subject matter experts in various parts of the organisation. The decision maker gave these people a direction and background on the decision and requested that further research / analysis be carried out. The analysis was submitted to the decision maker and again they develop an intuitive understanding of what the analysis tells them in relation to the decision:

'We stopped with the scenario analysis on many occasions and said 'it doesn't feel right', like that kind of growth, or that kind of market share or that pricing just doesn't seem credible.' (B)

What emerges is a continuous process between intuition and analysis in order for the decision maker to reach a level of comfort from which they can make an informed decision.

In relation to speed, none of the decisions researched required an immediate answer. All were under time pressure to address the decision but given that the decisions were of strategic importance to the company it was found that the decision makers were given the time required to analyse the situations and to better understand the issues at play. It is interesting to note however that interviewees did mention when taking day to day decisions their intuition often gave them the answer and they transacted these decisions with speed.

In reviewing when decision makers tend to use intuition, the researchers put forward the following hypotheses:

Hypothesis one: Decision makers use intuition in decisions when the data available to them is not complete or the data is insufficient to make a decision.

Hypothesis two: Intuition is frequently followed by logical analysis in order to prove or dis-prove the intuitive impression.

In each of the decisions researched, the decision makers were facing novel situations. Their intuition gave them a steer of the direction they should move. In all cases the decision makers were aware that using intuition alone in important decisions would not suffice. By calling on the experts from various parts of the company to further analyse their initial impressions, they could build up a more complete picture of the key factors required to make an informed decision.

Hypotheses one and two form the basis for the conceptual model proposed so they are further discussed in Section 4.4

4.3 WHAT ARE THE DANGERS OF USING INTUITION IN DECISION MAKING?

This research question was addressed in the interviews by asking the interviewees what they consider to be the dangers of intuitive decision making. It is of interest to note that prior to this question all interviewees had already flagged the dangers of intuitive decision making. Plous, (1993), Myers, (2002) and Bonabeau, (2003) are among writers who have highlighted the importance of understanding the biases and other traps that can hinder intuitive decision making,

Prior to the direct question being asked the following transcript extracts are examples provided by some of the respondents on the dangers of intuitive decision making:

'In using intuition I would be worried about whether the answer I've come to is right, how do I know without the facts to back it up' (A)

'It's informed intuition as distinct from you know from reckless ambition or reckless sort of intuition' (C)

This shows that the decision makers were consciously aware of some of the risks associated with intuitive decision making. As noted by Hammond et al. (2006), and Hayashi, (2001), being consciously aware of the dangers is one of the first lines of defence against falling into the biases and traps that can occur.

All the interviewees pointed to the problem that by acting on initial intuition, decision makers may forego the facts that rational analysis may yield. The literature highlighted biases such as confirmation, hindsight and the availability bias, all of which can lead a decision maker to reconstruct past information or seek out present information to assist in confirming their view of a decision. The interviewees in this research appeared to circumvent these biases by looking to establish all available facts.

'I'll usually get data, analyse the data, get a market view and get an internal point of view' (A)

'Increasing reliance on intuition combined with reducing reliance on formal analysis can lead to not finding the optimum decision in all cases' (B)

'Due to the fact that intuition is not fact based, you can easily end up with the wrong answer. Securing the facts in this situation can help you find the best solution' (C)

In reviewing the data further, evidence was found that some of the biases that were detailed in the literature, namely Confirmation bias (Hammon et al., 2006, Pfeffer & Sutton 2006, Sadler-Smith & Shefy, 2004 and Bonabeau, 2003) and Anchoring bias, (Kahneman, 2002; Plous 1993). Confirmation bias came to the fore in a discussion with one of the interviewees. The interviewee pointed out that during the decision process, some market research had come to attention that put in doubt the path that the decision was on. The decision maker noted that they, and others involved in the decision, did not give the research much credence. This behaviour is an example of confirmation bias as the decision maker chose to downplay evidence that went against their decision.

Anchoring bias was also apparent in reviewing the data. In this case the interviewee was consciously aware of their tendency to anchor an intuitive thought. They worked on

ensuring that this did not lead them astray, and they ensured that they took on board other people's opinions to ensure that the anchored thought could be moved if necessary.

'The down side of using your intuition, and it's something that I'd be aware of, and something I need to be conscious of more, if you listen to your intuition at the start, you're starting from I think the answer is "X" and then you start looking at the data and that obviously influences how you see the data.' (D)

In reviewing the dangers of intuitive decision making, the following hypothesis is put forward for future research:

Hypothesis three: Decision makers tend to use 'informed' intuition in the decision making process.

'Informed intuition' is distinguished from 'intuition' by the fact that the decision maker seeks more concrete evidence with which to back up their initial intuitive thoughts. Informed intuition can bypass many of the dangers of intuitive decision making as it incorporates analysis of the data that is available. Using intuition on its own does not have this aspect of analysis. This was evident in the research data in that all the decision makers were aware of the possible dangers of intuition, and to counter this, they used formal analysis and gathered data prior to making a decision.

A conceptual model of intuition in individual decision making based on the research findings is presented next.

4.4 A conceptual model for intuitive decision making by individuals

This section puts forward the basis for a conceptual model for intuitive decision making by individuals in organisations.

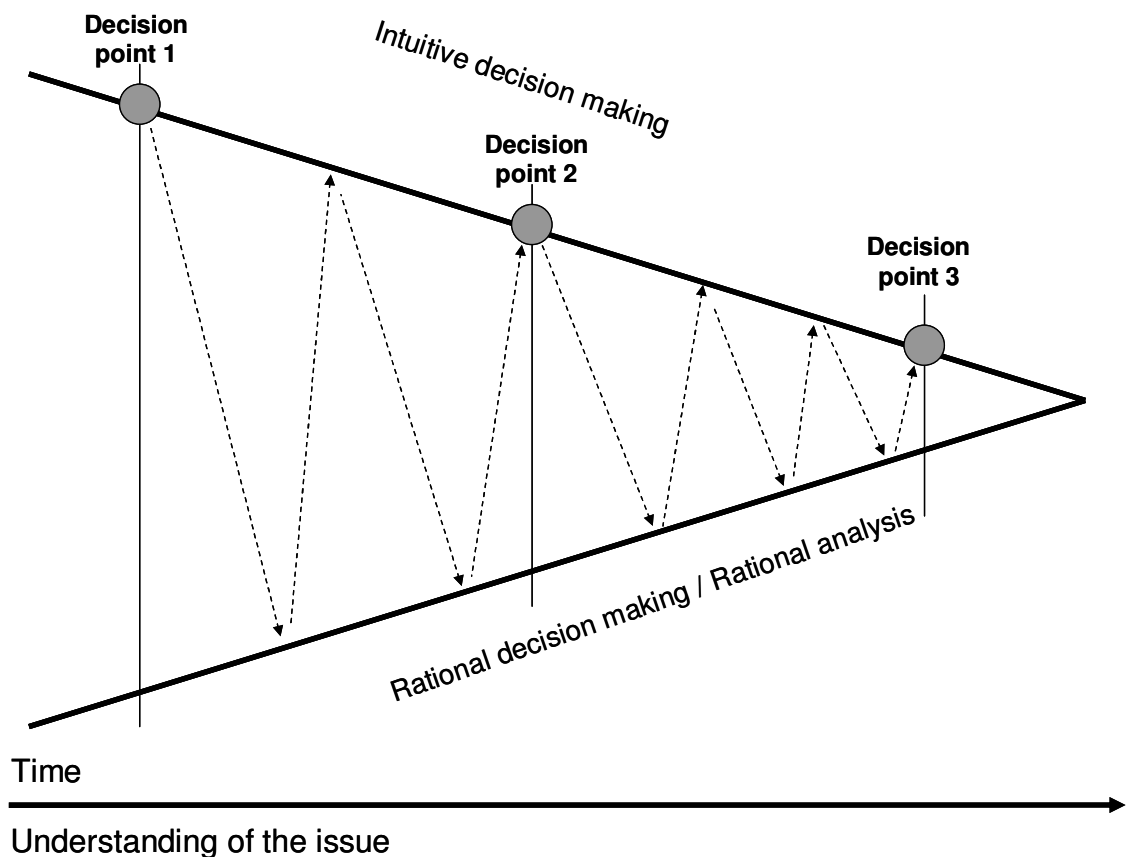


Figure 4.2 Conceptual model of the use of intuition by individuals in decision making

This conceptual model looks at the interaction between intuition and rational decision making. The top line, slanting down from left to right, represents intuitive decision making, the bottom line, slanting up from left to right represents rational thinking in decision making. The straight line along the bottom represents the passing of time and

also represents the facts that as time progresses, a decision maker can gain more understanding of the issues involved in the decision.

As noted, in both the literature, for example Isenberg, (1984), Gladwell, (2005) and Myers,(2002), and the analysis of the research data, intuition is often used in novel situations or in situations where not have all the information required to make a decision is available. It was also noted in the literature (Sinclair & Ashkansay, 2005, Lank & Lank, 1995, Andersen, 1999 and Bonabeau, 2003) that organisations are increasingly facing rapidly changing environments. It follows that decisions makers are increasingly likely to have to take decisions at 'Decision point 1' of the conceptual model.

In the conceptual model, the large gap between the intuition line and the rational line at the start of the process (Decision point 1) represents the fact that in novel situations the decision maker will not have all the information with which to form their decision. If the decision maker is forced to make a decision at Decision point 1, they will depend heavily on their intuition due to the fact they will not have all the data they would like to make the decision. Intuition in this case will be drawing on similar experiences that the decision maker has experienced and they will seek to apply this knowledge to the present situation, similar to 'thin slicing' as defined by Gladwell, (2005:23).

The conceptual model posits that if the decision maker is given more time, they seek to understand the situation by logical methods such as scenario analysis, pilot testing, benchmarking against peers in other markets / countries etc. The interaction between the intuitive decision making process and the rational process is represented by the dotted lines. The decision maker will use experts in the relevant fields within the company to carry out this analysis. This point was also noted by Nutt (1998) in studying senior

managers making major decisions, he noted that leaders were observed drawing on networks of key people to identify needs.

In the conceptual model, if the decision maker has to make a judgement at 'Decision point 2' it can be considered 'informed intuition'. They have used their initial intuition to give direction, but they have also added to this initial direction by using experts to analyse and gather more information or offer projections on what may happen in different scenarios.

As more analysis and information is available to the decision maker, the intuition line and the logical line move closer together, the decision maker uses analysis to better understand the unknowns of the situation. The logical analysis helps fill the gaps of uncertainty and it also gives a more factual basis for the decision maker's intuitive belief. Evidence to support this was found in the data for this research as demonstrated by the following extracts from the interview transcripts.

'In fact a lot of rigorous analysis often comes down to just proving or disproving intuition.' (B)

'It (benchmarking against peers) certainly told us, and again it would have been the gut reaction at the start, that one of the subsidiaries was centrally significant to the core business' (D)

The conceptual model would posit that at 'Decision point 3' the decision maker would be confident that their intuitive impressions are correct or the analysis may suggest that their intuitive impressions are not correct. If the decision maker listens to the negative evidence against their intuition, they may need to reconsider the decision or make a decision that goes against their intuitional impression.

5.0 CONCLUSIONS

While rational thinking and intuition have been considered at opposite ends of the spectrum in relation to decision making, the recurrent theme from this paper is that they should be used in conjunction with each other as opposed to mutually exclusive. This point is underlined by Simon (1987:61) who says “Intuition is not a process that operates independently of analysis, rather, the two processes are essential complementary components of effective decision-making systems”. Patton (2004:992) makes a similar argument as according to him even carefully considered decisions have an intuitive input.

Klein (2003) also supports the view of the complementary nature of analysis and intuition saying that analysis is, at best, a supporting tool for making intuitive decisions. To further lend weight to the close interaction between intuition and logical thinking, Burke & Miller (1999) stated that 91.5% of their research respondents said that they have combined intuition with data analysis in their history of workplace decision making. Even a vehement proponent of intuitive decision making, Gladwell (2005), acknowledges that truly successful decision making relies on a balance between deliberate and intuitive thinking.

The conceptual model emphasises the interrelationship between intuitive and logical decision making, while it also highlights the blurred distinction between individual and organisational decision making. The findings of the research and the conceptual model emphasise the point that the individual and the organisation are inherently linked in decisions “with important consequences and resource demands for the organisation”, (Nutt, 1998:198). In such decisions therefore the decision maker does not act alone.

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