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Australian Elite Leaders, Intuition and Effectiveness

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Abstract

Title: Australian Elite Leaders, Intuition and Effectiveness

Keywords: Decision-making, Intuition, Leadership, Australia

Category of paper: Research paper

Purpose of research/paper: This paper examines the relationship of the use of intuition in decision making and judgements by senior leaders in major Australian organisations.

Methodology: Qualitative: semi-structured interviews

Findings: The findings suggest that intuition is commonly used by these senior Australian leaders and that they consider it very important to effective decision making especially where the environment is complex and/or where the decision/judgement involves people

Value of the paper: Academics, practitioners, managers, consultants, researchers and /or students of business and management

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Section headings: Introduction, research issues/literature review, methodology, findings, discussion and conclusions

Abstract

Interest in the use of intuition as a viable approach to decision-making and judgements in environments of rapid change and complexity has increased in recent years. Despite this, little research has been conducted in organisational and management settings and in particular the relationship between the use of intuition and effectiveness; in fact, research in Australia concerning these issues is non-existent. This research addresses the stated knowledge gap by examining the role intuition plays in the decision-making and judgements of a small but distinguished sample of leaders of significant Australian organisations referred to in this study as 'Australian elite leaders' (AEL). The study focuses on how AEL define, use and experience intuition, and its perceived contribution to their effectiveness. It was found that AEL define intuition as a non-rational, holistic, cognitive process that is enhanced by experience and associated with affect; that AEL regularly use intuition in their judgement and decision-making processes; and that it is considered very important to their effectiveness as leaders.

Introduction

It can be considered a truism that organisations, individuals, structures and practices have never before faced such complexity, uncertainty, paradox and discontinuous change. The measurement of the external organisational environment and analysis of variables has become increasingly problematic. As a methodology, many argue that strategic planning can be seen as inadequate because things have already changed before the plan is finished (Carlopio, Andrewartha and Armstrong 2001; Wheatley 1999; Handy 1995; Hames 1994; Mintzberg 1994; Agor 1989). Despite this, decision-making for leaders remains necessary and inevitable and is arguably the main role of senior leaders in organisations. Therefore, the need for new and more effective management and leadership approaches to decision-making has never been greater.

However, Wheatley (1999) argues that contemporary organisations are still essentially Newtonian and mechanistic in nature. Approaches to decision-making and judgement are therefore linear and reductionist (Cooksey and Gates 1994). Consequently, leaders are still expected to be objective and rational, devoid of emotion, non-rationality and irrationality (Mintzberg 1994). Intuition is therefore, as a decision-making tool, largely excluded from managerial and human resource educational discourse.

New science has given a perspective of the universe far removed from the Cartesian paradigm. Non-linear systems theory (NLST) encompasses the idea that individuals can be seen as complex systems embedded in ever-more complex systems, both biological and social (Capra 1996; Senge 1994; Bertalanffy 1968), and systems cannot be completely understood by reductionist analysis. Intuition as a judgement/decision-making skill is important for contemporary leaders because it is more able to cognitively process complex systems than our rational minds (Denes-Raj and Epstein 1994; Parikh, Neubauer and Lank 1994). It follows that research into the use and efficacy of intuition as a decision-making tool is needed at this time.

This paper will highlight the difficulty in using quantitative approaches when researching elusive, non-rational and therefore non-measurable phenomena such as intuition. Qualitative methods are therefore used to investigate the relationship between the use of intuition and leader effectiveness. It will achieve this by sampling a small and distinguished group of Australian elite leaders (AEL), who have been deemed effective previously and independently of this study. The research will investigate how these leaders define, use and experience intuition, and its perceived importance to their effectiveness. The aim of the research is to reach a broader understanding of the non-rational elements of decision making.

Research issues / Literature review

The problem of complexity

According to Khatri and Ng (2000), one of the most basic assumptions about leadership and decision-making in organisations is that it is done on the basis of systematic rational analysis. There is an expectation for leaders to account for and empirically justify the decisions they make (Brockman and Simmonds 1997). The use of rational analysis can be seen as congruent with and as a consequence of, scientific management. Initially promoted by the works of Taylor and Ford, scientific management has produced an impressive array of quantitative, analytical techniques supported by dazzling, ever-faster information technology that has successfully provided leaders with effective decision-making support systems (Carlopio, Andrewartha and Armstrong 2001; Parry 1996; Taylor 1911).

Guided and underpinned by classical physics, which regards the universe as a deterministic, predictable, linear and stable mechanism, scientific management has dominated organisational development and processes (Capra 1996; Handy 1995; Cooksey and Gates 1994; Hames 1994; Eisenhardt and Zbaracki 1992). The belief is that understanding the complex universe is simply a matter of developing a greater understanding of natural immutable laws. Classical physics seduces the aspirant into a hope that one day, complexity can be reduced to Newtonian Laws (Wheatley 1999).

However, quantitative measurement of the perceived impinging external and internal variables is regarded as incomplete, unstable and quickly obsolete (Handy 1995; Cooksey and Gates 1994; Hames 1994; Eisenhardt and Zbaracki 1992). Furthermore, reductionist analysis enables only the understanding of one variable at a time and not how variables interact and impact on each other (Handy 1995; Hames 1994; Mintzberg 1994). Decision-makers operate within a field of 'bounded rationality' (Simon 1987). This reliance on such analytical methods by decision-makers and the apparent absence of alternative approaches has consequences for the efficacy of organisations. Nutt (1999) shows that managerial decision-making has a success rate of only 50%.

An emerging paradigm supported by 'new science' has seen the growth of literature across many academic disciplines including sociology, politics, biology and chemistry. Under 'systems thinking', the properties of a system are not reflected in the properties of the individual parts but rather in the relationships between parts (Capra 1996; Bertalanffy 1968). Systems therefore, are not conducive to reductionist analysis. This can be seen as a fundamental shift in understanding the universe. The table below compares the values and thinking of the self-assertive paradigm (based on classical physics) and the integrative paradigm based on new science.

Table 1. Comparison of self-assertive and integrative paradigms

Thinking		Values	
<i>Self-assertive</i>	<i>Integrative</i>	<i>Self-assertive</i>	<i>Integrative</i>
Rational	Intuitive	Expansion	Conservation
Analysis	Synthesis	Competition	Co-operation
Reductionist	Holistic	Quantity	Quality
Linear	Non-linear	Domination	Partnership

(Source: Capra 1996)

According to Dubrin, Dalglish and Miller (2006), insight into perceiving trends in external and internal environments, and the ability to cope with many different types of information and make sense of it is crucial for leaders. Systems theory describes organisations as complex systems embedded in operational environments that can be regarded as larger complex systems. It is argued that intuition is effective in contemporary situations because it can deal with systems more complex than we can with our conscious or rational minds (Brockmann and Simmonds 1997; Shapiro and Spence 1997; Cappon 1994; Jung 1977).

Intuition as a concept

While there is general agreement in academic literature that intuition occurs at a level below conscious awareness or is non-rational, Agor (1986a, 1984) argues that there is 'little agreement' as to what it is. Much of the confusion surrounding intuition, adding to the complexity of conducting research on intuition, is due to the use of this term in so many ways (Behling and Eckel 1991). Furthermore, intuition has long been associated with the mystic, irrational and paranormal (Cappon 1994).

Jung (1977), legitimised intuition to some extent through defining the four basic psychological functions as intuition, thinking, feeling and sensation, and these concepts have been incorporated into standardised personality evaluation tests used daily all over the world.

Intuition, as a function of the brain, has been described in terms of 'split brain theory' (Bouclavas 1997; Cappon 1994; Mintzberg 1989, 1976; Simon 1987; Robey and Taggart 1981). Put simply, the left hemisphere, in a neurological division of labour, operates in linear fashion processing information sequentially with language being the most obvious capacity. The right hemisphere however, operates in a holistic, simultaneous and relational fashion, and is associated with intuition and affect (Cappon 1994). According to Simon (1987), the corpus collosum connects the two hemispheres and allows the transfer of information from one to the other. These two information-processing styles allow for complementarity in decision-making (Sinclair 2003; Sauter 1999; Simon 1987). Bastick (1982) describes this duality of the brain and its consequent ability for both analytical and holistic processing as 'a marriage made in heaven' (p. 155), and the 'Yin of intuitive intelligence and the Yang of rational thinking' (p.24).

Although split brain theory has been contested on the basis that neurological functioning is complex and not attributable to particular areas of the brain (Goldberg 1983), it nevertheless still provides a useful metaphor for two different modes of cognitive processing.

Conceptualisations of intuition in management research

While considerable advances in understanding intuition as a holistic, cognitive process have been made in the field of psychology, studies focusing on the application of intuition as a cognitive ability or skill and its role in organisational and management practices have been less extensive.

A review of the literature reveals two distinct manifestations of intuitive experiences around which conceptualisations can be grouped on the basis of immediacy (Novicevic, Hench and Wren 2002; Sauter 1999; Cappon 1994; Simon 1987). Crossan Lane and White (1999) distinguish 'gut feeling', 'expert intuition' or the recognition of patterns based on past experience, from 'entrepreneurial intuition', which they describe as 'to do with innovation and change' (p. 527). This can be recognised as the 'Eureka effect'; or an instantaneous insight or flash subsequent to sustained analysis or the immersion of oneself in a problem or problems for a considerable time (Crossan, Lane and White 1999; Cappon 1994; Koestler 1976). The entrepreneurial intuiter is able to 'connect patterns in a new way' (Sinclair 2003, p.15) and 'generate new insights' (Crossan, Lane and White 1999, p. 527).

Definitions of intuition

A review of the literature identified the commonalities in the definitions used to describe intuition. Four aspects were identified pertaining to intuition or to the intuitive experience; these can be seen as non-rational, holistic, enhanced by experience and associated with affect or emotion.

Non-rationality

The non-rational characteristic of intuition is argued consistently in the literature (Sinclair 2003; Khatri and Ng 2000; Brockman and Simmonds 1997; Shapiro and Spence 1997; Agor 1986a, 1986b, 1984; Goldberg 1983). It should be clarified that non-rational or non-logical is distinct from irrational and illogical. Rational, in this sense, can be considered as that which is 'derived from reason ...' (Delbridge and Bernard 1982, p. 331). It follows that non-rational means that which is not derived from reason. Non-logical processes can be seen as those which cannot be expressed in words but can be seen as directed into judgements, decisions and actions (Bennett 1998).

Holism

The limitation of the rational mind, in terms of its ability to only comprehend and process a small amount of information at one time, is encapsulated in Simon's (1987) concept of 'bounded rationality'. However, intuition operates in a non-linear, non-sequential, holistic fashion with an ability to process multiple items in parallel (Isenman 1997). Intuition deals in the holistic interpretation of information (Sinclair 2003; Khatri and Ng 2000). '... what is surprising about such insights is that such complexity can spring forth so well formed from the mind' (Isenman 1997, p.397). Sinclair (2003) argues that the notion of intuition as non-sequential information processing is based on the Jungian concept of a 'big picture' or holistic perception. The intuiter, in the case of entrepreneurial intuition, is able to connect all the pieces of the jigsaw that were previously unconnected, disorganised elements of a problem or situation (Isenman 1997).

Experience

Reference to the importance of experience to intuition is consistently found in the literature (for example see Bennett 1998; Cappon 1994; Simon 1987; Agor 1986a, 1986b; 1984, Goldberg 1983;), and is supported by research (Khatri and Ng 2000; Anderson 1999; Burke and Miller 1999; Isenberg 1984). Experience, according to Simon (1987), allows the acquisition of tacit knowledge which, he argues, are previous analyses non-rationally and rapidly drawn upon. In this process complex sets of associated information becomes available to the unconscious in 'chunks' (Simon 1987).

Affect

Although the research in organisational settings is scant a review of studies focusing on the experience of managers and leaders, and their use of intuition, suggests that this association of affect is experienced at least to some extent by some of the respondents (Petitmengin-Peugeot 1999; Behling and Eckel 1991; Epstein 1990; Agor 1984; Bastick 1982). In management contexts, affect has been shown to manifest in two ways, both positively and negatively. First, as a feeling or certitude or relief, and second, as previously referred to, as a sense that something is not right and therefore needs investigation (Sinclair 2003; Burke and Miller 1999; Agor 1986a, 1986b; Isenberg 1984).

Frequency of use, importance and efficacy

There has been relatively little research on intuition in organisational contexts. However, a small but growing body of evidence has suggested that the common view of managers as exclusively rational and analytical in their judgements is only partly true. Burke and Miller (1999) identified that the 'overwhelming majority' (p.95) of managers use intuition daily in decision-making. Parikh, Neubauer and Lank (1994) also state that nearly 80% of respondents agreed that senior managers 'use intuition to some extent' (p. 66). However, these results were based on observations from respondents about other people in their organisation.

Isenberg (1984) found that executives used a combination of intuition and analytical decision-making techniques in both the diagnosis of organisational problems and subsequent judgements and decisions. Agor (1984, 1986a, 1986b) concludes that 'top executives' use intuition to make their most important decisions. Similarly, Khatri and Ng (2000) found that intuition was an important factor in strategic decision-making. Parikh, Neubauer and Lank (1994), in a significant study involving 1312 managers from nine countries, found two out of three managers consider themselves to be highly intuitive. However, none of these studies discussed so far focus exclusively on the leaders of organisations. A focus on leaders is useful because the decisions they make have the most influence over an organisation and its success. Furthermore, no studies specifically addressed the Australian context.

While it has been argued by these findings that managers and executives use intuition in their decision making, the efficacy of such use has been problematic to establish. For example, the fact that one is a 'top executive' does not necessarily mean that one is effective. Only two studies (Khatri and Ng 2000; Anderson 1999) specifically addressed the relationship between intuition and effectiveness or performance. In the study by Anderson (1999), effective managers are deemed to be those that achieve 100% of their 'profit margin goal' (p. 57). However, the relationship between effectiveness and achieving the stated goal could be seen as rather tenuous given that there may be a range

of intervening or confounding variables that relate specifically to a given financial situation, which are not attempted to be controlled within the study.

Khatri and Ng (2000) offer a more complex conceptual definition of effectiveness (performance) including such indicators as 'quality of customer services, operating efficiency, public image and goodwill' (p. 65). They found a positive relationship between the use of intuition and performance, however, this was found only in unstable industries such as the computer industry, as opposed to stable industries like the banking industry. Although the study appeared to focus on 'expert intuition', thereby excluding 'entrepreneurial intuition', the findings did indicate a link between the two (intuition and performance), suggesting further research could be valuable.

Methodology

The aim of this research is primarily to investigate the relationship between the use of intuition by Australian leaders and its effectiveness. Previous studies have located leaders of organisations without reference to their effectiveness and relied on their position in the organisation as reason enough to test them (Agor 1986b, 1986a, 1984). Alternatively, other studies have tested leaders for both effectiveness and intuition (Khatri and Ng 2000; Anderson 1999; Parikh, Neubauer and Lank 1994). However, it is argued that quantitative studies are not conducive to the study of intuition, which can be regarded as slippery and elusive and difficult to conceptualise, operationalise and, therefore, measure.

Furthermore, Lincoln and Guba argue that new science supports the epistemology of naturalistic inquiry or constructivism (Lincoln and Guba 1985). It also supports the phenomenon under investigation, that is, intuition. Capra (1996) argues that the 'thinking' supported under holistic paradigms includes intuition as opposed to rational analysis, upon which positivism is based. Therefore, it is argued that qualitative methods can be seen as epistemologically in line with the phenomena under investigation and appropriate for this study.

Data collection and analysis

According to Marshall and Rossman (1999), qualitative techniques can focus on 'individual lived experience', (p.60). As the study seeks to engage with 'lived experiences' and constructions of the participants in the form of their own words, two methods, supported by the epistemology of the research, were selected: in-depth, semi-structured interviews and subsequent analytical induction (grounded theory). Glaser and Strauss (1967) define this as 'the process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his (*sic*) data and decides what data to collect next ... in order to develop his (*sic*) data as it emerges' p.45). On the basis of answers given by AEL, and their subsequent analysis, emergent themes were identified and developed. In this way data relating to emergent themes was collected and analysed to the point of saturation, which allowed for theory building. The method adopted allowed for comparison and consensus, and new theory building.

Research design

Each year *Boss Magazine* publishes a list of 'True Leaders'. Leaders from the years 2001, 2002 and 2003 were invited to participate in the study, of which eleven accepted (Macken 2003; Macken 2002; Trinca 2001). In this study it is assumed that, on the basis of the

independent inquiry undertaken by ‘a distinguished panel’ on behalf of *Boss Magazine* (Macken 2002), the sample of leaders can be considered effective. Indeed, the successful and distinguished careers of each participant would be sufficient to make this assertion without the validation of a distinguished panel (see table below). On the basis of this assumption, it remains for the study to examine the perceptions of these leaders regarding their use of intuition and its role in their effectiveness.

Table 2. Participants

Name	Position (at time of interview)
David Butcher	CEO, World-wide Fund for Nature
John Cloney	Chairman, QBE Insurance
Greg Combet	Secretary, ACTU
Peter Cosgrove	Chief of the Australian Defence Force
Nuno D’Aquino	ex Deputy CEO, Fosters Group
Lynda Dean	CEO, TP Health (Formerly Thursday Plantation)
Michael Hawker	CEO, IAG
Christine Nixon	Chief Commissioner Victoria Police
Elizabeth Proust	Managing Director, Esanda
Anne Sherry	CEO, Bank of Melbourne, and Group Executive for Human Resources, Westpac Bank Corp.
Keith Williams	CEO, Proteome Systems

Research questions

The research questions put to AEL were open-ended seeking information in three broad categories:

- A. The context and importance of decision-making and judgements in their role as leader.
- B. Their definition, experience and application of intuitive insights.
- C. The perceived importance of intuition to decision making and judgements in relation to their effectiveness as leaders.

Findings

Importance of decision-making

All AEL interviewed described decision-making and judgements as critical to their leadership role and a central part of their daily activities. The subjects described activities such as dealing with people, and setting direction or a strategic future for the organisation as a set of choices that must be dealt with on a daily basis. AEL regarded the quality of decisions and judgements made by them can impact largely on the success of the organisation, and the individuals associated with it. This responsibility was clearly outlined by respondents in such *statements* 'it is incumbent on the leader to make decisions' and '*...it's what I do. That's it basically ... decision making on a day to day basis for our strategic future is almost a definition of my job*'. Another respondent stated their position on decision making as an enlightening double negative, '*you can't not make decisions*'.

Complexity

The operational environment of Australian elite leaders was generally seen as '*inordinately complex and ...fairly unstable*'. Leaders acknowledged their role in managing that complexity, '*...because that's what a leader is there for and a leader should be able to understand what's happening in the environment, no matter how complex it is, and find the optimum decisions and the direction ...within that kind of environment*'.

Accounting for complexity, many leaders noted a variety of contributing factors. In addition to the demands of running an organisation with large numbers of employees and stakeholders, much of the complexity was seen as an impact of change. This change was seen by AEL in terms of rapidly emerging technologies, '*increased competition and reduced operating budgets*', which are often set against an increased demand for profits. However, some leaders pointed out the '*background of reasonable world economics*' and argued that complexity can be seen as a constant in organisational life, '*There's always instability in relation to governments 'per se' because they're here today, gone tomorrow*'.

Definition and experience of intuition

In relation to questions regarding the definition and experience of intuition, all respondents regarded the experience of intuition as a sudden clarity, realisation or illumination, '*... often it comes very fast*'. Respondents often cited an associated emotional response '*...it's a feeling, but it's an informed feeling*' or sensation of knowing, '*It's like the 'ahaa' ... I think I've got it...*', '*it's the immediate reaction which says, do this or don't do this...*'.

While all respondents regarded intuition as having a non-rational component, '*...it's an unconscious thing that just comes about...*', all respondents acknowledged the importance of rationality in the formation of the intuition '*...I think it ... it collides a bit at times...*', '*I think it's a bit of both ... (conscious and unconscious)*'. It was found that the role of rationality could be seen as a determinant of immediacy in their intuitive experience. Either the flash of intuition was an immediate response to a situation or problem where the subject had significant experience and therefore previous rational deliberation, '*... the minute I looked at it I said this is a great deal, we've got to do this...*', or the respondents

experienced intuition as a clarity experienced subsequent to a rational and sometimes extended cognitive process, *'...it is collecting information and then let it roll around in the old brain until some sort of clarity comes out of it'*. This example of intuition was often seen in relation to innovation and creativity *'I had a vision of how the company should work', and 'I suddenly said, what if we use that technique?'*.

Experience and holism

All of the respondents emphasised the importance of experience to their intuition, *'Your experience, what's happening out there now, what the business is, and from all that you come up with an intuitive decision in terms of direction or task or ... its not something that comes out of a vacuum'*. The holistic nature of intuition was a common feature of descriptions of intuition. Many respondents viewed intuition as informed by many different sources which is then holistically processed to come up with an intuitive response to a situation, *'I use it to read the market in its totality rather than just in its technical sense', '...it's really a bringing together of a whole complex set of both obvious and not obvious cues about the way something gets done'*. Pattern recognition was a common theme in definitions, *'It's extremely refined and acute observation and memory, pattern memory ...'*.

In relation to questions regarding the circumstances and situations where the use of intuition was most appropriate, complexity, *'... but it's more where there's some complexity around it ...'*, time constraints, *'... I think the biggest time you use intuition is when you're very short of time'* and lack of information were common situations in which leaders were most likely to use their intuition. The use of intuition in relation to judgements about people was a central theme for many subjects, *'Virtually everything we do is people, everything's people'*. Furthermore, leaders saw judgements about people as crucial to effectiveness, *'There are contracts, agreements, law, whatever it is, but at the end of the day, achieving your objectives for me is a lot about people and it's your intuition about people that's very important'*.

Although no questions were asked regarding values in intuitive decision-making, some respondents indicated this to be a factor in the process, particularly in relation to people. *'I rely on my experience, my values and beliefs and my perception of the people in the circumstances I'm involved in and my intuition is informed by all of those things', '... I can't put my finger on it but I don't want to do business with him, or questions about whether you really think this guy has exhibited the values that we are happy with?'*.

Importance of intuition to decision-making, judgement and effectiveness

In relation to questions regarding the importance of intuition to decision-making and judgements, all respondents acknowledged using intuition *'... I suspect that one does use intuition more than one imagines'*, and most respondents indicated frequent use of intuition, *'The whole time', 'Daily ...', 'All the time ...', 'On an hourly basis'*. One respondent acknowledged that *'... all my decisions are made on intuition ...'*.

Considering the earlier finding of the importance of decision-making to their effectiveness, all respondents therefore found intuition as very important to their effectiveness as leaders, *'...its critical, that's how I make decisions', 'I think it's absolutely important for all leaders',*

'Very important when you learn to trust it and to check it', 'If you don't have intuition, I would find it difficult to see how you can run an organisation'.

Discussion and conclusions

Definition and experience of intuition

Consistent with Mintzberg (1989), all AEL interviewed described decision-making and judgements as critical to their leadership role and a central part of their daily activities. AEL regarded such choices, decisions and judgements relating to those choices as consuming a great deal of their time. Indeed, some regarded decision-making and judgements as 'their job description'. Many AEL described activities such as dealing with people, and setting direction or a strategic future for the organisation, as a complex set of choices that must be dealt with on a daily basis. Therefore, if intuition plays a role in decision-making and judgements for AEL, then it can be postulated that intuition is indeed important to their effectiveness.

The research clearly confirms the findings of previous studies in relation to the experience and definition of intuition in terms of holism, affect, and the existence of a non-rational component for all AEL. However, while acknowledging the non-rational nature of their intuition many of the respondents emphasised the role of analysis.

The leaders in the study identified the role of analysis both preceding and subsequent to an intuition. Some AEL found that intuition, as an uncomfortable 'gut feeling', may cause them to re-examine decisions based on analysis or in some cases to abandon a course of action based on analysis. Similarly, a feeling of certitude may confirm a decision based on analysis. Some respondents described intuition as a check or test point for their analysis. For example, one AEL observed that he was reluctant to make a decision unless both intuition and analysis were in agreement.

Leaders also described the role of analysis as informing their intuition in correlation with the two conceptualisations of intuition argued by Crossan, Lane and White (1999): that of expert and entrepreneurial intuition. In the example of 'expert intuition', the role of analysis was seen in the general process of gathering experience in the field of their expertise and general life experience. In terms of pattern recognition associated with expert intuition, this can be seen as the collection or development of a storehouse of patterns relating to diverse phenomena, referred to in the literature as 'tacit knowledge'.

In the example of entrepreneurial intuition, the role of analysis is more immediate. Some respondents reported spending long periods of time gathering and analysing data or thinking through information relating to the problem at hand, preceding intuitive synthesis (Sinclair 2003; Shapiro and Spence 1997; Cappon 1994; Parikh, Neubauer and Lank 1994). This finding concurs with the view of intuition based on connecting patterns in a new way (Sinclair 2003; Brockmann and Simmonds 1997; Cappon 1994), consistent with innovation, creativity and associated with the 'eureka effect'.

Considering the central role that analysis plays in the formation of intuition as well as the subsequent validation of their intuition, it was therefore no surprise that some leaders had difficulty in discerning where analysis or conscious process ended and their intuition

began. This finding, regarding the apparent interdependence of intuition and rational analysis in the judgements and decision-making by respondents, supports the notion of the complementarity of the rational and experiential cognitive systems as described by Denes-Raj and Epstein (1994). Rationality and intuition can therefore be seen as a parallel, interdependent and interactive processes, one feeding the other, separate yet at the same time informing the whole of judgement. It further supports the philosophical stance taken by Bastick (1982, p.24) in regarding the 'Yin of intuitive intelligence and the Yang of rational thinking' and reflects the underlying dualistic nature of the universe (Capra 1996; Davies 1983).

An analysis of the transcripts revealed patterns of references to the role of values in judgements and decision-making by AEL. Two of the respondents indicated that values informed and underpinned intuition decisions or judgements. Similarly, some respondents found intuition useful in aligning decisions and judgements to the values of the organisational culture. This included judgements about people and the compatibility of their values to those of the organisation.

The role of values in intuitive synthesis however, was not a significant feature in the literature surrounding intuition and its use in organisations. This finding is supported only by Burke and Miller (1999) who, in a qualitative study, found that in some respondents intuitive decisions can be arrived at as a result of a desire to generate intuitions that are compatible with their 'companies cultures or their own moral codes' (p. 94). Further research regarding the link between intuitive decision-making and values is recommended.

Previous studies of management and intuition have tended to focus on the influence of intuition in decision-making. Decision-making is used here in the sense of a choice between alternatives. No studies have specifically looked at the use of intuition to generate insights into people although its importance to leadership is acknowledged (Dubrin, Dalglish and Miller 2006; Parry 1996; Mintzberg 1989, 1976). Of the literature found in this study only Kuo (1998) argues that inter-personnel perceptions and intuitions are the 'most critical' (p. 91). The findings of this study confirm the importance of people skills to leadership, and the role of intuition in judgements about people.

Denes-Raj and Epstein (1994) point out that judgements concerning people are more likely to be responded to by the experiential system rather than the rational or analytical system. This is consistent with the properties of intuitive synthesis. People as well as organisations can be seen as complex systems, each one unique. Perhaps the lack of consideration and research given to people and intuition is due to the fact that it would be very difficult to quantitatively measure. It is no surprise then, that only qualitative studies have made reference to this important facet of intuition and leadership (Burke and Miller 1999; Agor 1986a, 1986b, 1984).

Intuition and effectiveness

The findings of this study clearly indicate that AEL not only use intuition frequently but also consider it very important to their effectiveness as leaders, particularly in circumstances of complexity, time constraint, lack of information and judgements about people. AEL regarded judgement and decision-making as a complementary process of both rational analysis and intuition, and indeed, some AEL found a blurring of intuition

and rationality and found it difficult to separate these two experiences. AEL therefore considered their rationale for using intuition (non-rational), as rational and based in rationality.

The application of the principles of new science goes some way to understanding the need to acknowledge both modes of cognition in a dualistic universe. The Principle of Complementarity states that matter can be considered both waves and particles at the same time. The Principle of Uncertainty however, states that 'wave and particle descriptions of being preclude one another' (Zohar 1990, p. 11), taken alone, neither description can provide a complete picture but united they provide a picture of the whole (Zohar 1990). Similarly, a person can be described as an individual, and as a system of cells, while the whole of an organisation can be described as a system of individuals. The whole of cognition can therefore be seen as dialectical interplay of both analysis and intuition, one informing, enhancing and sharpening the other as two aspects of one intelligence (Cappon 1994).

Concurring with Simon (1987), this study has shown that intuition and analysis are complementary elements of effective decision-making systems. If effective judgements and decision-making are a result of the whole of both interdependent and interactive cognitive processing systems (analytical and intuitive), as suggested by Denes-Raj and Epstein (1994), then asking how important intuition is to effectiveness is analogous to inquiring whether exhaling is important to breathing. Seen in this context, the findings of this study are no surprise. Leaders (and indeed all of us) use both analysis and intuition. It is therefore argued that it is the *quality* of their intuition and analysis that determines how effective they may be.

Blattberg and Hoch (1990) argue that you do not have to understand intuition to use it. As an unconscious process, practitioners do not 'choose' to use intuition. However, practitioners may choose to implement intuitive insights. This study strongly argues such an approach can be considered useful and effective for practitioners. The implications of this study for practice can be seen in three ways. First, to broaden the awareness of intuition as an innate intelligence. Second, to assist in legitimising the use of intuition in organisations, and third, to promote further research and programs to maximise its use and effectiveness.

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