

CHAPTER 6: TOWARDS A CONCEPTUAL FRAMEWORK OF THE MINDFUL SENSE- MAKING PROCESS OF THE LEADER IN THE QUANTUM ORGANISATION

6.1 INTRODUCTION

In this chapter I discuss and draw conclusions on mental models of leaders in the South African quantum organisation. The conceptual framework describes the dynamic change leaders undergo in their mental models. The purpose of this chapter is twofold: first, to discuss the findings and secondly, to demonstrate rigorous practice by showing the important relationship between the central research questions and axial codes as analytical tools, as well as to answer the central research questions.

6.2 THE MULTIDIMENSIONAL CONSTRUCTS

Multidimensional constructs are widely used to represent multiples of distinct dimensions as a single theoretical concept. The use of multidimensional constructs has initially created a dilemma for me as I wanted breadth and comprehensives, but also precision and clarity from ambiguous dimensions. The constructs of 'quantum organisation' and 'mental model' are typical multidimensional constructs (Edwards, 2001:144).

Based on the epistemological and ontological orientation of the study, the findings showed that there are multiple meanings in the minds of the participants, multiple realities in their multiple universes, as well as multiple interpretations of the multiple realities. In my discussion I have not attempted to unearth a single 'truth' from the realities of the participants and myself, nor have I tried to achieve outside verification of my data analysis. The conceptual framework, therefore, does not attempt to establish a single truth from the participants' experiences.

Thus, it is irrelevant whether another researcher would arrive at different codes and ultimate themes when looking at the transcripts, because both may be correct.

Due to the complexity of the multidimensional constructs, I have attempted to unbundle the constructs by offering a description and an integrated interpretation of the results and literature, instead of trying to define the constructs of a quantum organisation and mental model. Ironically, the very act of trying to condense such a broad and deep construct into one single definition would be trying to cope with complexity in a reductionist manner, reflecting linear thinking on my part.

6.2.1 The quantum organisation

The South African quantum organisation can be described as follows (illustrated in Figure 24):

- Learning is at the heart of the organisation and as such cultivates a culture of innovation and creativity. Learning takes place both on the individual level, where it starts, and the organisational level. Therefore, the quantum organisation is open to new ideas coming from any level in the organisation, which implies that the quantum organisation is always moving in terms of flow of information and energy to make sense of information.
- It is a networked structure. Although the quantum organisation has little organisational structure, it has structure when needed because of its self-organising and networked nature. The quantum organisation is a conscious participant in the self-designing process.
- The quantum organisation is resilient (the ability to let go and be stable at points that matter at fractal movement) and therefore adaptable, always moving in anticipation of an emerging and non-linear future.
- Co-created solutions (acknowledgement that solutions and leadership exist at all levels) implies that the quantum organisation generates complex solutions by interdependent, multiple stakeholders with multiple truths and solutions.

Figure 24: Properties of the South African quantum organisation



This led me to a comparative analysis of the complex adaptive system and the South African quantum organisation, as demonstrated in Table 24. I concluded that the quantum organisation is indeed a complex adaptive system as it displays similar properties. I indicated the correlation by using similar colours, for example co-creation from the quantum organisation correlates with co-creation and interdependent agents from the complex adaptive system. The quantum organisation is resilient, which implies letting go in preparation, and adaptable to an emerging and non-linear future (complex adaptive system). A networked organisational structure (quantum organisation) allows for self-organisation to take place (complex adaptive system).

Table 24: A comparative analysis between the properties of a complex adaptive system and the South African quantum organisation

Properties of a complex adaptive system	Properties of the South African quantum organisation
Learning	Learning at the heart of the organisation, which cultivates a culture of innovation and creativity
Self-organising	Networked structure. However, the quantum organisation has little organisational structure but is structured when needed, because of self-organising and networked nature. The quantum organisation is a conscious participant in the self-designing process.
Adaptable Emerging Non-linear	Resilient (the ability to let go and be stable at points that matter at fractal movement) and therefore adaptable, always moving and growing, in state of emerging, towards a new reality
Co-evolution and co-creation Not predictable Interdependent agents	Co-created solutions (acknowledgement that solutions and leadership exist at all levels). Co-created solutions implies the generation of complex solutions by interdependent, multiple stakeholders with multiple truths and solutions. Such complex variables are not predictable.

I also concluded that, although learning is an essential element of the quantum organisation with the view to be adaptable and demonstrate resilience, an organisation can be a learning organisation without being a quantum organisation.

The patterns of behaviour in the South African organisation are not constant because the external complex environment constantly changes and emerges, and therefore also the behaviour of its agents. This behaviour of systems as a whole can change. Complexity theory focuses on relationships between the individual and teams or between organisations in the organisation. The South African quantum organisation is a complex system.

6.2.2 Leader in a complex environment

Because of the context in which a leader in a complex environment is discussed, it emerged that the traditional and conventional meaning of the word we attach to 'leader' needs to be reframed or, at the very least, re-examined. Just the very fact that we use the word 'leader' implies that there is a follower, but following to where, what and how? Is the usage of the word 'leader' still applicable in the complex context? Should we use the old labels in a new context?

It can be concluded that the leader in a complex environment cannot get tainted by using the old recipe, or be limited by a theory of transformational, charismatic, transactional, serving or even African leadership, although there are certain contact points. To call such a leader a 'quantum leader' would also imply a boundary. It would be best keeping it open and descriptive by referring to such a leader as the leader in a complex environment, or describing the process of complexity leadership.

The function of the leader in a complex environment is thinking related, with specific reference to embodying the roles of:

- **Mindful** sense maker of emerging patterns
- Facilitator of sense-making in the networked environment (quantum organisation) between stakeholders. This implies a distributed leadership approach and the confirmation that all involved are regarded as equal thinkers towards co-constructing a complex solution.

Being a leader in the complex environment is **defined by quantum thinking** and therefore can come from anywhere in the organisation, and not necessarily your typical hierarchical leader. However, this does not imply that elements of a leader in a complex environment cannot be found in hierarchical leaders as well. Being a leader in a complex environment cannot be captured in a definition and certainly not objectified as a singular. Being such a leader can rather be captured in a description consisting of intersectionalities and multitudes of roles: motivator, sense maker, facilitator of sense-making, enquirer, co-creator and thinker.

The leader in a complex environment embodies properties of a complex adaptive system. For example, the leader is an interdependent agent, co-creating with others in the sense-making process of non-predictability and non-linearity. Therefore the very essence of the identity of such a leader can be summarised in the following saying, capturing an element of ubuntu:

I am because we are.

‘In the end our purpose is social and communal harmony and wellbeing. Ubuntu does not say “I think therefore I am”. It says rather “I am human because I belong. I participate. I share”’. Archbishop Desmond Tutu

6.2.3 Mental models

Based on the results and an extensive literature review, I conclude with the following conceptualisation on mental models.

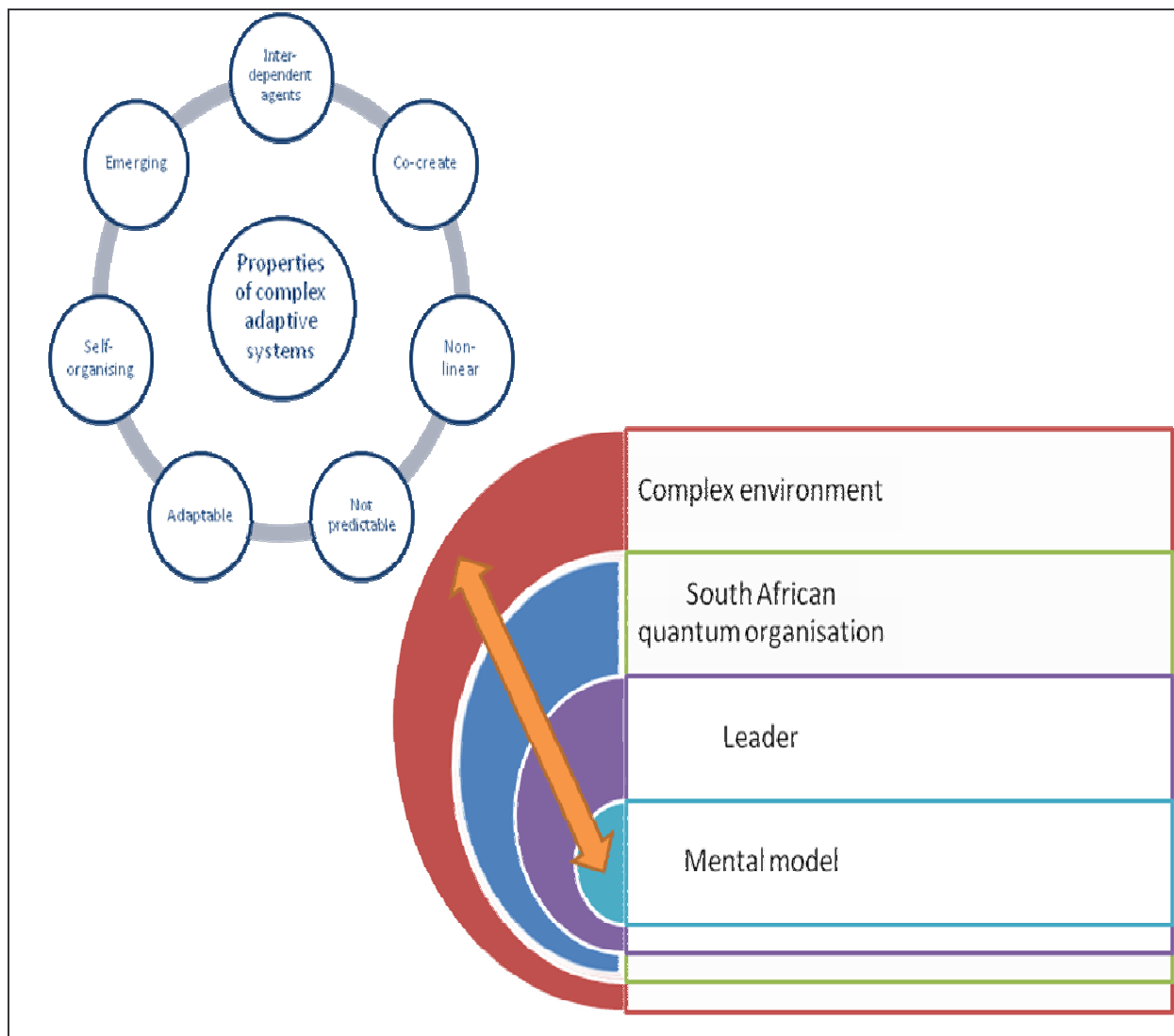
- Mental models are internal representations of a socially constructed ‘reality’.
- The mental model serves as an **enabling interpretive structure of sense-making** (function), which consists of (form) an unconscious element or tacit knowledge and a conscious element or explicit knowledge.
- This knowledge is deeply ingrained and relatively stable, but can change. And in this case, mental model refers to a set of interacting assumptions or network of assumptions.
- Although the mental model in itself is a cognitive function, the sense-making process and shift in assumptions within the mental model itself include also emotional and metaphysical components.

Mental models have a dual and paradoxical function. On the one hand, they assist in reducing complexity and thereby enable leaders to make sense of phenomena and navigate accordingly. On the other hand, the effectiveness of the reduction of complexity creates an illusion and allows leaders to recognise and identify data in search for appropriate data. The existing mental model only allows the leader to rely on data to confirm rather than to challenge the existing mental models. The role of the leader is to make explicit their tacit knowledge within the mental model.

Part of becoming aware of the tacit knowledge is thinking about thinking and being, as well as thinking about the thinking patterns co-created by the leader. Once again, the mental model of the leader in a complex environment shares similarities with the properties of a complex adaptive system. For example, it is adaptable and emerges with new realities through the process of sense-making.

I came to the conclusion that the quantum organisation, being a leader in a complex environment, the dynamics of the mental model and the complex environment itself collectively represent a constellation of complex adaptive sub-systems, affecting one another in an interdependent manner and co-evolving accordingly (Figure 25).

Figure 25: A system of complex adaptive sub-systems



6.3 THE CONCEPTUAL FRAMEWORK: MINDFUL SENSE-MAKING PROCESS OF THE LEADER IN A COMPLEX ENVIRONMENT

‘Be awake’ – Buddha

The rationale for the choice of design of the conceptual framework is an eight lying on its side, which symbolises the notion of *infinity*. Infinity is significant and appropriate in that the sense-making process has no beginning and no end, as it is a continuous and constantly emerging process. The sense-making process consists of a series of moments as illustrated in Figure 25.

This sense-making process is done in a mindful manner, which refers to paying attention, on purpose, to the present moment. Mindfulness is a state of mind that comes out of paying attention to, on purpose, the present moment and nothing else but this deep awareness. It is a capacity shared by all, but the cultivation thereof is often lacking and most individuals are fairly out of touch with this capacity. An affectionate quality of mindfulness is compassion and empathy, which is a manifestation of the attitudinal orientation of the leader – a sense of being.

This calls for an awareness of the external as well as the internal landscape of the leader. Such awareness can be reframed as *awareness-ing*. Although it is not an acknowledged word in English, it gives tonal and textural feeling to the concept. The act of *awareness-ing* is not an idea, nor a philosophy or a technique, but actually a way of living and being. The key message of the mindful sense-making process, *awareness-ing*, in a complex environment is not only the ability to know but rather the ability to question and being comfortable with not knowing, and paying attention to the actuality of emerging patterns.

The process can be described as follows:

The acceptance of current reality should not be misunderstood as a passive acceptance of or resignation to the current state of affairs.

Knowing and *awareness-ing* of the current state of affairs provides a sense of orientation which enables the leader to act accordingly. However, not accepting and knowing will not allow the leader to actually know how things are, which disempowers the leader in seizing the actuality of the current ‘reality’.

Catalytic **questioning** is the second level of *awareness-ing*. This implies questioning the mental model with its associated deep-seated assumptions, as well as asking catalytic questions which makes tacit knowledge explicit. Such questioning implies challenging the status quo of the external and internal landscape of the leader.

Letting go is a critical point in the mindful sense-making process of the leader. Letting go can be compared to the meaning of the mathematical saddle point. A saddle point is the point intersection between two dimensions where one dimension curves up in one direction and the other curves down in a different direction, as illustrated in Figure 25. Quantum physics refers to event horizon as the crossing over from one galaxy to another and as the point of no return. From an energy perspective the saddle point represents the optimal point of resilience by absorbing and releasing energy, or in this case, letting go. It also represents the crossing over from one reality to another, where new meaning and, as a consequence, a new reality will emerge. The *awareness-ing* in letting go means to actively and consciously let go of previously held assumptions that were deemed ‘truths’ or ‘facts’ about the external and internal landscape of the leader.

Following the mindful act of letting go, is *awareness-ing* of **knowing that not knowing** is crucial, because knowing that you do not know will not allow for something to emerge. Often clinging to what is known prevents new insights to emerge and the sense-making process as a whole. ‘Knowing that not knowing’ is underpinned by the attitudinal orientation of a beginner’s mind, which refers to the philosophy that there are an infinite number of possibilities. One should therefore not get stuck in expertise and knowing, as clinging to the security of knowing often gets in the way of knowing what is not knowing.

Although there are multiple variables that are not known, there are certain variables that can be trusted as known for sure.

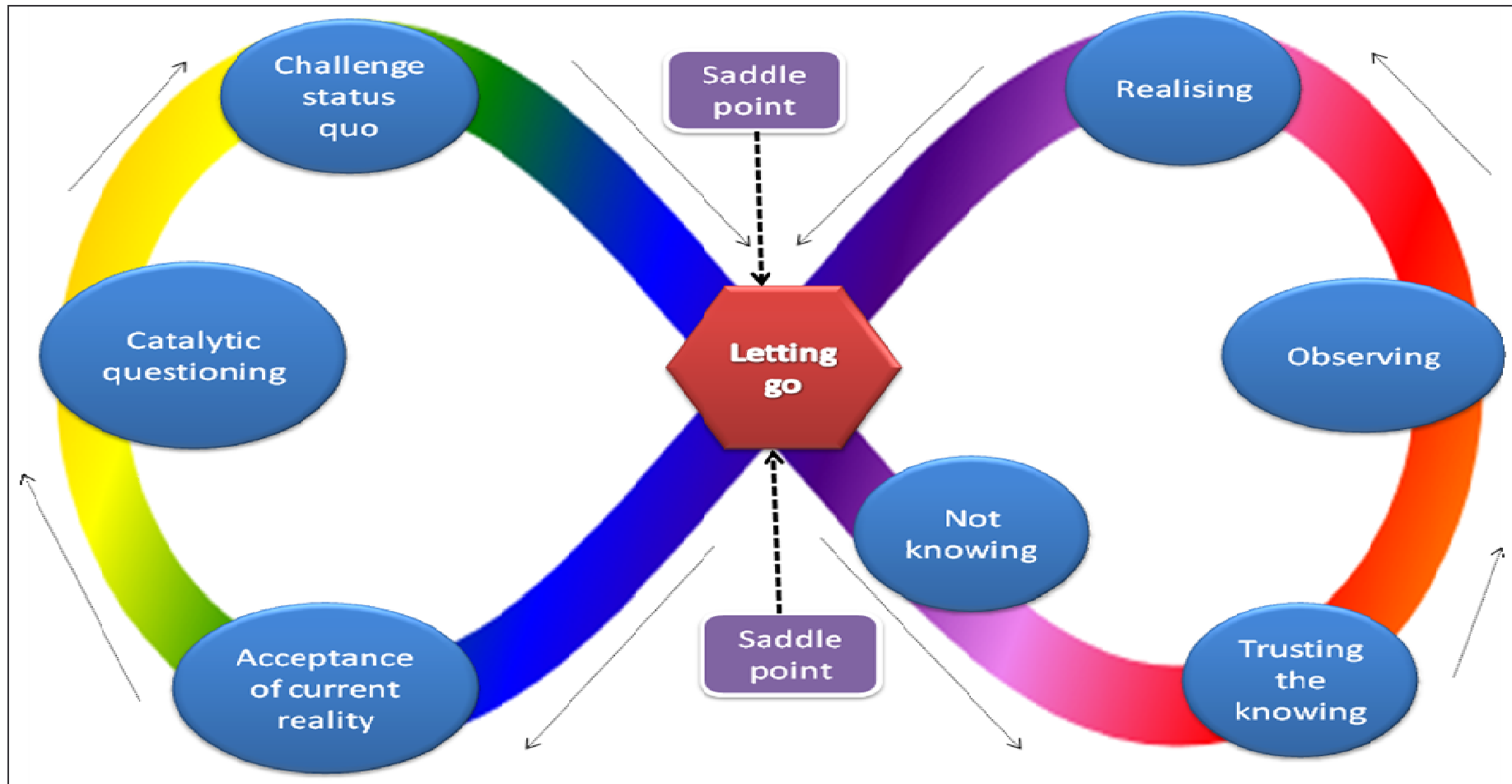
Trusting the knowing refers to the act of trusting that all will be okay, that it is a complex adaptive system and emerging patterns will appear, that multiple truths are part of the experience and a complex environment. Therefore, one should trust one's own experience and mental model until it is proven to be untrue. Trusting the knowing is part of wisdom. I interpret wisdom in the complex environment as knowing the actuality of things without being caught or misperceived in one's own mental model.

Part of the mindful sense-making process, called *awareness-ing*, is **observing** and noticing the ebb and flow of the emerging patterns, without getting hijacked into the illusion created by the mental model, and observing the actuality of unfolding patterns.

An *awareness-ing* of sudden **realisation** follows observing. Realisation can be compared to a principle in complexity theory called dissipating. When a system becomes overly tense or destabilised, a sudden release of energy will occur and new order will emerge from this dissipative process – almost a mini big bang event! Complexity theory describes this as emergent, non-linear change. Realisation is a dissipative event in itself, due to pressure building up from the movement caused by letting go and knowing that do not know.

The value of a conceptual framework is that it does not aim to predict outcomes in the complex system, but rather offers understanding of how to navigate in the complex environment through the mindful sense-making process. It can also be argued that no single model can offer a result because of the number of different dynamic processes within the organisation. Rather than predicting and forecasting one singular outcome and crafting a predetermined future, such a conceptual framework allows leaders to broaden their viewpoint beyond their fixed notions, based on current perceptions, to what can possibly transpire. Thus, the type of knowledge emerging from the conceptual framework will be in itself 'complex' (not complicated) with no single-value answers but rather a statement of options which will limit the extent to which control can be exercised by the leaders themselves. The very mindful sense-making of complexity in a complex environment serves as an enabler for effective change leadership.

Figure 26: The conceptual framework of mindful sense-making in a complex environment



6.4 APPLICATION

Can this be attained by an individual? The key in the quantum age is interdependency, that is the individual does not achieve on his/her own but engages in the act of co-creation to create together with other individuals. The realisation that mindful sense-making is not a luxury to be dispensed at critical times, but the source of navigation in a complex environment, should be the burning platform to embark to continue on the *awareness-ing* journey.

6.5 CONCLUSION

In this chapter I attempted to illustrate how, through axial and selective coding, I arrived at a conceptual framework of mindful sense-making in a complex environment and the role that the mental model of a leader plays. In addition, I described my conceptual framework, which was linked to an extensive literature review in Chapter 5.

CHAPTER 7: DISCOVERIES, CONTRIBUTIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

In this chapter I first highlight the most prominent insights and elucidate the study's most significant contributions. Secondly, I point out the shortcomings of this study and thirdly, I make some recommendations and suggestions for future research.

7.2 DISCOVERIES

In view of the lack of literature on the form and function of mental models in the context of complex environments within the quantum age, I am convinced that the participants' stories break new ground with the discoveries described in this study, specifically in the South African context. The existing body of knowledge on mental models and quantum organisations is expanded due to the findings of this research. The findings make a valuable contribution to the theory and research base of the interdisciplinary fields of leadership, psychology, the cognitive sciences and organisational behaviour. This was done by investigating the mental models of leaders in the South African quantum organisation using the constructivist grounded theory approach.

I made the following discoveries during the course of the study on mental models of leaders:

- The complexity theory is an appropriate option for explaining the nature of the complex context in which the South African leader needs to exercise change leadership effectiveness. Upon investigation, it is concluded that the quantum organisation, the leader and the mental model of the leader possess properties that resemble those of an adaptive complex system and therefore can be perceived as multiple complex adaptive sub-systems which affect one another interdependently.

- It is concluded that the quantum organisation has learning as a central theme.
- Leaders in a complex environment are being characterised by the quality of their quantum thinking and their roles, although multiple, are dominantly that of a sense maker and facilitator of sense makers co-creating solutions in a complex environment.
- The mental model is an interpretive structure which enables sense-making of complexity. However, not to fall trap to the reductionist approach in sense-making which leads to incorrect conclusions, a mindful approach is required. This mindful approach is being referred to as *awareness-ing*, implying being in the present and acutely aware of the present moment as it emerges.
- The conceptual framework, therefore, is linked to the function of the mental model and called the mindful sense-making process of the leader in a complex environment. This process can be described as accepting the current reality, challenging the status quo, letting go, knowing that ‘don’t know’, knowing and trusting ‘what do know’, observing emerging patterns and realising insights.

7.3 CONTRIBUTIONS

The main objective of this study was to develop an understanding of the nature of mental models of the leader in the South African quantum organisation. This led to the conclusion that the mental model as an interpretive structure of sense-making can be employed during navigating complexity. In addition, although the initial scoping of the research focus on the leader, the actual sense-making framework refers to leadership as a process and organisational behaviour phenomena.

In addition, I have attempted to answer the following research questions:

- What is a quantum organisation in the South African context?
- What is a leader regarded as in the quantum organisation?
- How are mental models influencing change leadership effectiveness in the quantum organisation?
- What constitutes the sense-making process?

A conceptual framework was developed to describe the sense-making function and process of the mental model. The **practical contribution** of such a framework would also initiate dialogue through which the leadership and research community might achieve a shared understanding of mental models. This conceptual framework describes the form and function of mental models of leaders in the South African quantum organisation. It can also be used as a reflective and diagnostic tool to introduce leadership development and coach conversations on a practical level.

Organisational behaviour is a 'field of study that investigates the impact that individuals, groups, and structure have on behaviour within organisations for the purpose of applying such knowledge towards improving an organisation's effectiveness (Robbins *et al.*, 2007:1). The contribution of this study to organisational behaviour as a field of study, is the construction of a conceptual framework which describes and interprets the mindful sense making process of a complex environment. The purpose of applying the conceptual framework is towards improving a leader's and as a consequence, organisational effectiveness in the South African environment.

I believe that this study contributed **methodologically** to the field of sense-making by demonstrating and confirming the alignment between qualitative research and constructivist grounded theory to uncover the contextual setting (complex context and quantum organisation) and integrate the individual (individual leader and mental model).

This methodology has allowed for complex and multidimensional constructs and investigation on multiple levels (quantum organisation and individual leader). This study adopts the epistemological belief that there is not necessarily a single, constant truth to be discovered. In this case, there is not a single, definite definition of the constructs of quantum organisations and mental models, but the multiple experiences and 'truths' of different individuals have been investigated, conceptualised and described. I verified and validated findings **within context**.

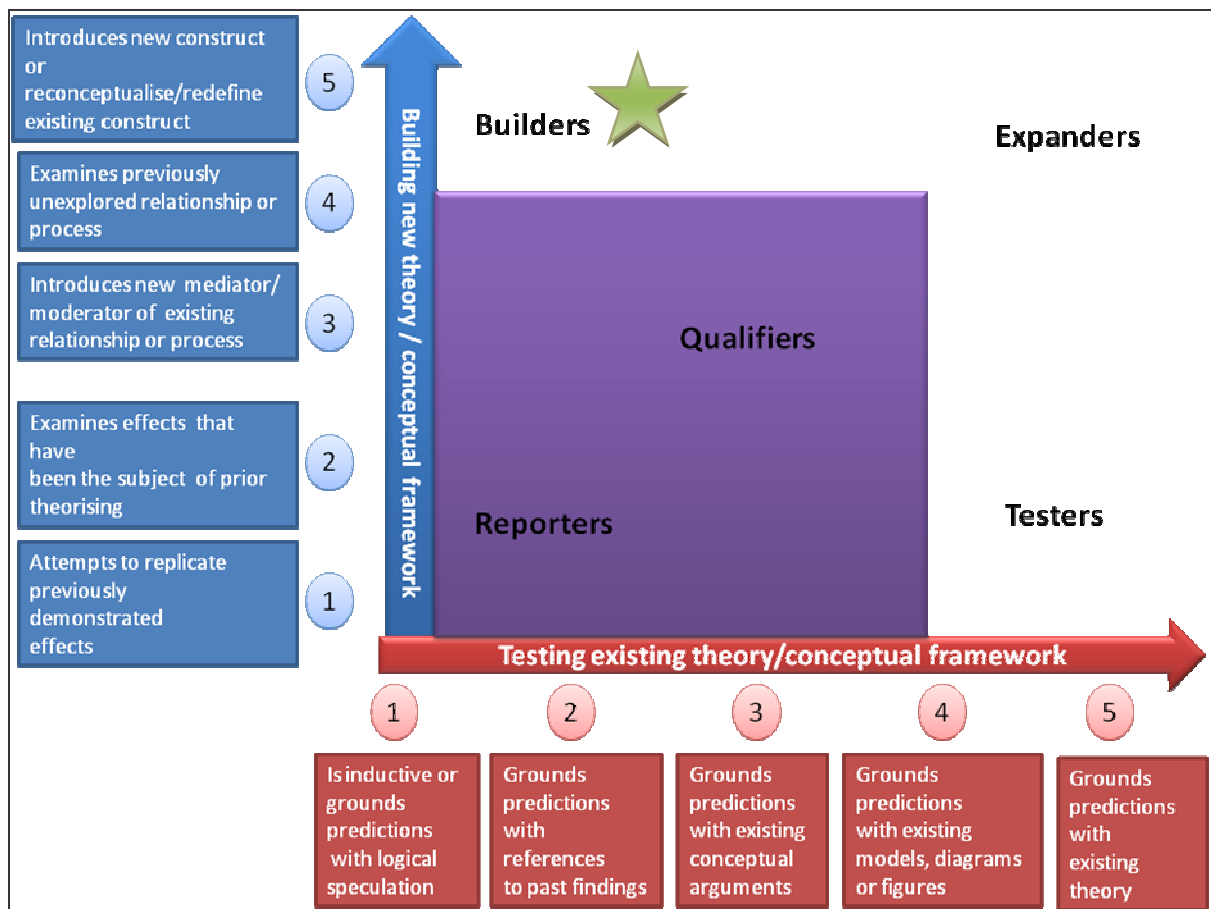
The qualitative approach specifically addresses the contextual nature in which mental models operates: the quantum organisation in a complex context (Johnson, 1995:257; Rowe & Cooke, 1995:243).



I believe that the conceptual framework has also contributed to the existing **theoretical** body of knowledge. When examining the meaning of making a theoretical contribution, it is established that the contribution can be assessed along two dimensions: theory building and theory testing (Colquitt & Zapata-Phelan, 2007:1281). Theory is described as ‘a coherent description, explanation and representation of observed or experienced phenomena’ and this is done ‘within a set of boundary assumptions’ (Bacharach, 1989:496; Gioia & Pitre, 1990:587; Colquitt & Zapata-Phelan, 2007:1282), whereas theory building is the ongoing process of producing, confirming, applying and adapting theory (Lynham, 2002:221). This implies that constructs and variables are an integral part of a theory that answers the questions of how, when and why rather than describing the what.

This study contributes towards knowledge in offering an understanding and explaining the nature and function of mental models as the interpretive sense-making structures of the leader in the South African context. The research is aligned with the requirements of theory building and expander (Figure 27), according to Colquitt and Zapata-Phelan (2007:1283), in the following manner:

- Constructs are significantly re-conceptualised because of the discrepancies in definitions and concepts of these constructs in the context of the quantum organisation in a complex environment (theory builder). A conceptual framework of the mindful sense-making process of the leader in a complex environment is offered, although not a substantive theory.
- This study examined the previously unexplored process of constructivist grounded theory as methodology (theory expander) and used an existing theory, namely the complexity theory, to inform investigated constructs.

Figure 27: Criteria for theoretical contribution



 **High theoretical contribution**
 **Low theoretical contribution**

Source: Colquitt & Zapata-Phelan, 2007:1283

Given the multiparadigm perspective, it is believed that theory building or expansion is not so much a search for the truth, but more a search for comprehensiveness stemming from different worldviews. The aim of this study was to generate descriptions and explanations of findings so that meaning would be revealed as co-constructed by participants and myself.

Lastly, this study aimed to assist with the integration of research and practice. I have experienced frustration when reading through popular management literature on mental models, learning and especially the use of quantum physics as metaphor in the leadership arena, positioning it as an 'evangelical-next-best-thing' approach.

Hopefully this study will contribute and advocate the responsible use of statements and assumptions without curbing enthusiasm and creativity in both research and practice.

7.4 RECOMMENDATIONS

This study's contributions and discoveries can be translated into recommendations for leaders.

The following recommendations are made:

- Over-reliance on popular literature, as well as traditional theoretical approaches, which reframes the leader as the 'corporate hero' and 'knower' should be avoided; also an over-reliance on doing and getting tainted into a recipe.
- The practice of mindfulness as a leadership competence should be encouraged.
- Sense-making should not be seen as only a cognitive function, but as an integration of intuition and trust into the mindful sense-making process.
- The mindful sense-making process should not be viewed as a technique or model that can be added to a repertoire of skills, but should be embraced as a way of living and being.

7.5 EVALUATION OF THE RESEARCH

Below is a table containing the essence of evaluative criteria for qualitative studies, as proposed by Baxter and Eyles (1997:518) and Fossey *et al.* (2002:730).

Table 25: Evaluative criteria

Evaluative question	Application and explanation in this study
What is the natural history of the researcher?	Storytelling and foreword of researcher in beginning of thesis Explicating assumptions of researcher
How were data collected and by what methods?	Semi-structured interviews Purposive sampling Recorded interviews
How was the sampling done?	Explicit delineation of sample frame Purposeful sampling Rationale for type of sampling
How was the data analysis done?	Use of computer-assisted programme, Atlas.ti Audit trail
What results are presented?	Description of researcher's objectives for results presentation Differentiation of participant concepts as opposed to theoretical constructs Presentation of conceptual framework on mental models of leaders in the South African quantum organisation
How credible and dependable are the data-construct links?	Details of relationship(s) between data and constructs offered Rigour discussion in thesis
How credible is the theory or conceptual framework?	Details of relationship between constructs and theory/conceptual framework provided
How transferable are the findings?	Recognition of limits imposed by sampling strategy
What was the aim of the study?	Research questions are relevant issues Aim focused and stated clearly Title of study give clear account of aim
How was reflexivity dealt with?	Researcher's motives, background, perspectives are sufficiently dealt with
What method and design were used?	Qualitative research method justified as suitable for research questions
How were data collection and sampling done?	Data collection strategy and choice clearly stated Best approach been taken in view of research questions Consequences of chosen qualitative strategy discussed and compared with other options
What was the theoretical framework?	Perspectives and conceptual frameworks used for data interpretation are presented

	<p>Adequacy of complexity theory framework in view of aim of study</p> <p>Account given of role of theoretical framework during data analysis</p>
How was the data analysis done?	<p>Principles and procedures for data organisation and analysis fully described from raw material to results and interpretations</p> <p>Various themes identified and developed from data described</p> <p>Principles followed to organise presentation of findings are explicit</p> <p>Strategies used to validate results presented, such as member checks and triangulation</p>
What were the findings?	<p>Findings are relevant with respect to the aim of the study</p> <p>Findings provide new insight into constructs investigated</p> <p>Presentation of findings well organised to demonstrate that findings are drawn during systematic analysis of data rather than preconceptions of researcher</p> <p>Quotes are adequately used to support and enrich researcher's synopsis of themes identified during systematic analysis</p>
What were discussed?	<p>Questions about trustworthiness and reflexivity are addressed</p> <p>The design has been scrutinised</p> <p>Shortcomings are accounted for and discussed without denying the responsibility of choice taken</p> <p>Findings have been compared with appropriate theoretical and literature references</p> <p>Consequences of study are proposed</p>
How was the report presented?	<p>Report easy to understand and contextualised</p> <p>Possible to distinguish between voices of participants and researcher</p>
What about references?	<p>Important sources have been used and applied in text</p>

Source: Malterud, 2001:485

7.6 NOTICEABLE SHORTCOMINGS AND LIMITATIONS

This study, similar to all studies, has limitations which should be acknowledged accordingly.

- Parry (1998:96) criticises the use of interviewing as the single source of data collection in the investigation of mental models. It is postulated that the behavioural manifestation of mental models of leaders should be observed, especially in a crisis situation. It is proposed that perhaps a longitudinal approach should have been taken, but it was not possible due to time and funding constraints.
- Another limitation of this study is particularly related to the applicability of results and methods to other contexts and countries, although this study was done in South Africa (Mouton, 2001: 175).
- Outliers in data were not sufficiently explained in the sense-making framework as themes were consolidated. Outliers could have been tested against a bigger population to see whether it might be an emerging theme as well.

7.7 OPPORTUNITIES FOR FUTURE RESEARCH

This study identified the need for further studies pertaining to leadership in a complex environment. Possible focus areas for further studies are as follows:

- It has been ascertained that the Newtonian and New-sciences approaches should not be viewed as polar opposites, but should rather be integrated. Further research is required on when a complex as opposed to linear solution is appropriate, as well as how to discern between the two options.
- Application of this conceptual framework in the shared mental model space.
- Exploration into the physical brain activity (neuro-science) when learning takes place.
- Exploration of the relationship between mental models and future pattern-based strategies.

- Exploration of the relationship between mindfulness and change leadership effectiveness.
- A psychodynamic perspective on mental models in the quantum setting.
- Exploration into the culture of a quantum organisation.
- Development of an assessment tool for quantum thinking.
- Mental models from a diversity perspective in a cross-linguistic and cross-cultural Southern Africa context of African leadership and 'ubuntu'.
- A comparative study in developing countries such as the East and South-America.

7.8 ANTI-CONCLUSION

The thesis started with the title 'Mental models of leaders in the South African quantum organisation'. After multiple avenues had been explored, this title could have been reframed as 'the mindful sense-making process of leaders in a complex South African context'. I am sure that if I continued with the investigation, the study could have been re-titled again. I realised that this study embodied the properties of a complex adaptive system, because the topic and depth of constructs just kept moving as new insights were emerging constantly. Therefore, I deem the heading of this section as anti-conclusion appropriate. There will never be an end to the journey of sense-making and learning in this field of study, and never a conclusion.

'The illiterate of the 21st century will not be those who cannot read or write, but those who cannot learn, unlearn and relearn.' Alvin Toffler