

A Constructivist Study of Leadership Development in Organisations

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DECLARATION

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, and that I have exercised reasonable care to ensure that the work is original and does not to the best of my knowledge breach any law of copyright and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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The questions we ask in our practice tell us what matters
(Matthew Fox, 1995)

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LIST OF ACRONYMS

EL		Executive Leader
LOC		Levels of Consciousness
SOI		Subject Object Interview
VUCA		Volatile, Uncertainty, Complexity, Ambiguity

ABSTRACT

A Constructive Study of Leadership Development in Organisations

By

Dolores Smith

The purpose of this study was to explore executive leaders operating in a variety of institutions and their sense meaning of their leadership agency conceptualised as forms of mind. Contextually it seeks to understand the capacity of forms of mind to mature over time into new forms of mind within the broader structure running the meaning-making of Leadership inside their unique organisational context as holding environments. Through a longitudinal analysis of six different organisations, it sets out to understand to what degree individual leaders form of mind relates to their unique organisational holding environment as an expression of their Leadership. Kegan and Lahey (2009) outline how leadership development literature has not focused on the underlying ‘operating system’ of individuals and their meaning making as forms of mind suggesting that effective leadership development needs to be understood within these underlying ‘operating systems’. Furthermore, Laloux (2014) argues that understanding Leadership in organisations is through understanding the stage of development of its leaders. This study bridges the gap between these two places by focusing on examining a gender balance of individual leaders form of mind within the historical-cultural worlds of the underlying operating systems of the holding environments of their organisations. The study reveals that the application of a psychological longitudinal approach to Leadership can provide a practical and meaningful focus in which to understand leaders form of mind in relation to their organisation form of place and how this capacity for developing new cognitions of Leadership inside Constructive Developmental Theory can result in effective leadership development aligned with future organisational needs and complexities. The studys findings can inform future approaches to professional training and development of leaders inside organisations.

CHAPTER 1

INTRODUCTION

1.1 Introduction and background

This study explores leadership and its meaning-making as a psychological developmental movement in consciousness. Through a series of case studies with leaders in different organisations, it examines the degree to which individual leadership and its meaning-making, expressed as a level of consciousness, is influenced by the organisational context that the individual leader inhabits as a holding environment.

Meaning making as a term is understood contextually in this study inside the analysis of organisational behaviour and the perspective of symbolic interactionism (Mead, 1934; Weick, 1985) which understands the nature of sense making of both individuals and organisational systems as being implicitly dynamic, constantly in movement through time and place as an evolutionary process. Therefore, in this regard, meaning making is not a singular unitary form of meaning. While there may be a hegemony of deep rooted meaning making through different historical moments in time and place in the evolution of the structures of organisational systems, within that there can simultaneously be different and distinct micro levels of individual meaning making emergent expressed as levels of consciousness.

Levels of consciousness in this study and its relationship to leadership is connected to the idea that leadership and the process of adult development are linked in that different forms of mind or levels of consciousness both terms used interchangeably as different iterations of Kegan's theory (1982; 1994; 2000) are underlying the expression of an individual identity and/or an organisational paradigm of meaning making of a given construction or theoretical model of leadership.

Further this expression and its capacity to grow into different forms of mind as a level of consciousness is influenced in turn by the holding environment of the organisational context. The idea of 'the holding environment' a term borrowed by Kegan (1982, p.116) from Winnicott (1965) is a place where the process of growth which can be a painful process for individuals as it involves changing the way one functions in the world and in this regard the ideal holding environment can assist individuals with these changes . Kegan (1994) equated a holding environment as 'an evolutionary bridge, a context for crossing over' (p.43) from one level of consciousness to the next more developed order.

The holding environment has two functions in this respect: supporting individuals in their current stage of development and encouraging movement to the next evolutionary truce within the five forms of mind and the twenty-one transitions or truces within these five forms of mind (Kegan,1982;1994).

The holding environment is applied in this study in terms of the role it may have in the construction of the organisation and leadership systems themselves and the exploration of the reciprocal relationship of individual leader's capacity to evolve into new forms of mind expressed in turn in new constructs of leadership and associated organisational systems.

Similar to Mead's (1934) concept of a social self and Weick's (1995) concept of the 'enactment' of that self in terms of understanding organisations as expressions of mindsets as meaning making systems, Kegan (1982) is interested in how explorations of self-other relationships evolve over time and especially values how this process and its developmental experience can build strong intellectual bridges to educational practice, leadership and organisational development.

It is this combination of developmental psychological approaches to leadership, educational practice and organisational development that drew this researcher to the scholarship of Kegan's (1982) conceptual framework as both best reflecting the researcher's purpose in this study aligned as it is with their own career experience across educational and business organisational environments. Correspondingly the interest in this study arose from the sum of the researcher's career trajectory in both academic and educational contexts together with experience in management consultancy across a number of diverse organisations.

One central inquiry that was ever present for the researcher across these environments both in terms of leadership and organisational development in organisations was a curiosity about the gap between the theory and conceptual ideas of leadership and organisational systems and the lack of translation into deep rooted action of such concepts. This lack of translation into lived practice seemed to occur irrespective of intention or associated sophisticated language frames between the theory and the behaviour and action in practice in organisational contexts as holding environments.

There seemed more particularly to be a living contradiction between the espoused theories and their translation into practice in the lived experience of people inside organisations. The question therefore for this researcher was what was calling to be resolved inside this

living contradiction and it seemed that perhaps the answer might lie in understanding more about what Schamer and Yukelson (2015) referred to as organisational and leadership systems as collective sources of social reality with consciousness understanding consciousness as human intention. They argue that the behaviour within systems and the capacity to transform these systems require more profound levels of awareness of people's action. In this context the idea of intention as a function of consciousness in leadership is explored in this study inside adult development theory and in particular Robert Kegan's (1982;1994) constructive developmental theory as the evolution of consciousness throughout adult life expressed inside five different forms of mind.

The study is premised on the concept that understanding the nature of a holding environment (Kegan, 1982; McCauley et al., 2006) and its influence on the structure of the meaning making of leadership is a necessary antecedent to understanding the practice of leadership in organisational contexts. Within this, the study proposes that leadership theories and definitions as meaning making systems reflect various progressions in consciousness expressed in social models of organisations.

Drawing on Kegan's (1982) subject-object theory, it is argued that leadership theories can be valuable and useful tools of any system. However, this is only when they are perceived as objects and, consequently, their value within the system they are being operated. Petrie (2014) also states that within the myriad of different definitions of leadership, the leadership challenge is not so much the implementation of a leadership theory but more so, that of a developmental challenge (the process of how to grow 'bigger minds' (Petrie, p.5). Indeed, Petrie (2014) also suggests that managers have become experts on the 'what' of leadership, but novices on the 'how' of their own development' (p.5).

This research uses Kegan's (1982) subject-object theory, focusing on humans as living organisms and systems that evolve and grow through stages that form and reform into new levels of consciousness (LOC). The movement in self into LOC is encapsulated in Kegan's (1982) theory of five stages of consciousness (imperial, instrumental, socialised, self-authoring and self-transformative), with each stage having a line of development that operates at three levels of self: being cognitive, interpersonal, and intrapersonal. Each stage is understood as moving what is subject within the adult mind to what is object and expressed in subject-object theory as an adult's transformation to qualitatively different ways of making meaning.

Kegan (2020) in reference to the COVID-19 pandemic, suggests that adult development theory, such as subject–object theory (1982) can be a useful illuminator into how the crisis itself can be understood within the developmental process itself particularly in the sense that as people make meaning in a more differentiated way, they paradoxically also develop the capacity to become closer to one another.

In other words, an individual moves in the evolution of consciousness to closing the gap between subject and object and within the inner self to develop a bigger capacity to care for the other. Correspondingly the study also explores the ever-expanding challenges and complexities of leadership as an embodied value of care in organisational contexts (Simola, 2003). This perspective resonates with Petriglieri and Petriglieri (2015), who believe that there is a need to refocus the study of leadership as an in-depth individual process that humanises leadership and its associated social values to society. They suggested that the route map to humanising the construct of leadership is based on what they describe as ‘one’s own personalisation and contextualisation of life events’ (2015, p.62).

Kegan and Lahey (2009) further explain that putting the personal into the professional as a route map to developing the capacity and potential for new forms of mind, while Khurana and Nohria (2010), referencing Kegan and Lahey’s (2009) approach to leadership, state that ‘the processes of leadership development would be significantly enhanced if the concept were anchored in what we now know about fostering the development of the meaning-making self in adulthood’ (p. 23).

Furthermore, Alvesson and Jonsson (2018) believe that there is a need for more in-depth individual studies in understanding and developing leadership. In other words, ‘we need more in-depth studies of individual cases where questions such as the possible (in)consistency of behaviour and the possible influence is studied in practice’ (Alvesson and Jonsson 2018, p.41). Alvesson and Jonsson (2018) also suggest that this type of research is necessary to gain more understanding of what they describe as ‘the possible coherence or incoherence of a manager’s meaning(s) of leadership regarding practice, where the complexity of the organisational environment is considered’ (p. 42). The complexity of the organisational environment is referenced by Kennedy et al. (2013), who highlight the need to develop mindsets attuned to a complex and ambiguous world, suggesting that a shift in focus from skills acquisition to mindset development in leadership studies is a necessary response ‘to the complexities of contemporary

circumstances seen as requiring a particular adeptness with uncertainty, ambiguity and collaboration.’ (p.11).

This complexity of the organisational environment is often captured in the management acronym VUCA (volatility, uncertainty, conflict, and ambiguity), requiring people in their workplace setting to demonstrate capacities to meet these ever-changing realities. However, Kegan (1994) also states that some leaders cannot respond effectively to meet such complexities primarily because they have not reached a LOC that would enable them to do so and, in that sense, they can be ‘in over their heads’ (p. 34). Therefore, the macro context of this study was to gain a greater understanding of what is calling to be resolved regarding developing new levels of mental complexity (Kegan and Lahey, 2009) expressed as LOC in constructs of leadership in 21st century organisations. This perspective resonates with Tourish (2014), who defines leadership as ‘socially constructed, deconstructed and reconstructed by all organisational actors as they interact over time’ (p. 85), suggesting that leaders do not stand apart from organisations but are enmeshed in the wider context of the social field of the organisation.

Bourdieu (1977) described organisations as social fields comprising social spaces, where people are social agents that position themselves to one another, while Morgan (1997) suggested that ‘organisations are in essence socially constructed realities that are as much in the minds of their members as they are in concrete structures, rules, and relations’ (p. 141). According to Weick (1995), organisations are dynamic organisms rather than static structural designs where sense-making is central to the identity inside social and mental constructs of the organisation and its environment.

Regarding the meaning-making of self and its relationship to organisations' social and cultural worlds, Benson (2001) highlights the importance of location as central to the meaning-making of a ‘self’, which he describes as a ‘basic ontological category of psychology’ (p.3). Within this, he describes the self as ‘a means of reference and orientation in worlds of space-time (perceptual worlds) and in worlds of meaning and place time (cultural worlds)’ (p.4). For Benson (2001), this perceptual aspect of the self is perceived as objective, and perceiving that object is subjective capturing the understanding of self as ‘an ongoing living process of constant auto-referred locating recognising the centrality of the body and the social relations’ (p. 5).

This study draws on Kegan's (1982) subject-object theory and Kelly's (1955) personal construct theory as outlined by Bannister and Fransella (1986) and Fransella (2005) as the route map to understanding how the social fields or 'cultural worlds' (Benson, 2001) of the organisations and the 'perceptual worlds' (Benson, 2001) of individual executive leaders in the case study organisations can or cannot grow into new LOC regarding their capacity to form new modes of leadership and meaning-making for ever-increasing complexities in organisations. The central premise of Kelly's (1955) theory is that our behaviours and our decision making are based on how 'a person's processes are psychologically channelled by how they anticipate events' (Bannister and Fransella, 1986, p. 46), emphasising the person as a meaning-maker. Furthermore, (Kelly 1955, as cited in Fransella, 2005, p.26) suggests that in understanding a person's behaviour, one needs to know how he or she interprets his or her world of which a repertory grid was developed as a technique to access the whole person's meaning-making.

Using an alternative pragmatic methodological approach (Morgan, 2007), this research set out to create a perceptual matrix using the technique of Kelly's (1955) repertory grid outlined in Fransella, Bell and Bannister (2004) as the conceptual basis for accessing both the perceptual and cultural worlds of the meaning-making of executive leaders and their organisations in one set of interviews. The development of the perceptual matrix for this study was conceptually anchored inside Kegan's (1982) subject-object theory.

In Kegan's (1982) subject-object theory, the emphasis is on interpreting the situation or event as essential to understanding the form of mind used in decision making. The assessment measure of Kegan's Subject-Object theory (1982) is the Subject-Object Interview (Lahey, Souvaine, Kegan, Goodman, and Felix, 1988), known as the SOI. The SOI was used to measure the forms of mind in two sets of interviews conducted as part of this study. Furthermore, all 'scorers' must be trained to conduct and validate the SOI, and as part of this PhD study, certified scorer qualifications were obtained in the USA to conduct and score SOI measures.

Within this broader context, the questions the thesis sets out to examine are as follows:

Question 1

What is the significance of individual LOC on the individual leader's perception of their leadership as an agency and its limits or possibilities inside the structural determinism of organisations?

Question 2

What or how does the holding environment of organisations enable or limit movements of individual executives into LOC as they perceive it within the structures running the meaning-making of their mind based on Kegan's (1982) subject-object theory.

Question 3

How can subject-object theory and its associated stages of mind (Kegan, 1982) be a useful route map and conceptual framework for understanding the polarity between agency and structure and sense-making of leadership as LOC?

1.2 Rationale for the Study

According to Petrigleiri, Wood and Petriglieri (2011), at the beginning of the 21st century, the Harvard Business Review stated that self-awareness was 'leadership's first commandment' (Collingwood, 2001, p. 8), and not long after this, the advisory council to the Stanford Graduate School of Business deemed self-awareness to be the most important ability for leaders to develop (George et al. 2007). Akrivou and Bradbury-Huang (2015, p. 223) also argued that business education can be the anchor to transform business education beyond narrow economic rationality into a place where 'they teach people the capacity to serve well humanity's long-term prosperity'. The authors argued that the way to achieve this is through constructive and moral developmental theories (Loevinger, 1976; Lahey-Laskow, 1986; Kohlberg and Ryncarz, 1990; Kegan, 1994) 'as the capacity for psychosocial maturity' (p. 223).

Kegan (1994) argued that the issue in organisations is that we are 'in over our heads' (p. 34), operating forms of mind which have not yet matured into new levels of mental complexity both expected and required to meet the demands of organisations and indeed the concepts and constructs of leadership lived out and through them. However, paradoxically, the capacity to build the very capabilities needed may themselves be withheld within the hidden curriculum of the organisation itself and the 'hidden competing commitments' (Kegan and Lahey, 2009, p. 43) of individual themselves simultaneously preventing the individual(s) or leader(s) from developing into new forms of mind that would enable them to meet these new complexities.

Khurana and Nohria (2010) believe that much of the literature on the theories, principles, and techniques of what constitutes good leadership was written and taught primarily from a positivist and prescriptive perspective.

However, they argue that these positivist and prescriptive approaches to good leadership are fundamentally in question, given the complexities of society. Reflecting on this, the researcher of the study was curious about the critiques of these leadership theories and whether insights into the gap between such leadership theories and their translation into practice might lie in exploring leadership and its meaning-making as developmental aspects of LOC inside organisational workplaces as holding environments.

1.3 Expected Outcomes of the study

The study will increase understanding of and inform future approaches to the professional development of leaders beyond skills and competency models of leadership by generating insights into the factors that inhibit or encourage a psychological developmental approach to leadership constructs across organisational systems.

The different types of organisations and leaders explored in this study offer a more nuanced analysis of understanding the interconnection of the holding environment of the organisation and individual leadership behaviours and consequent decision-making processes beyond categorisation. This understanding could subsequently be used to develop new approaches to leadership and its meaning-making related to the maturing of structures running the meaning-making of the mind inside organisational systems.

1.4 Structure of the Thesis

As previously stated, this study is situated with the identification by Day and Dragoni (2015) that few studies have been conducted on more holistic forms of leadership development (i.e., addressing the dynamic underlying developmental movement) and who, in turn, called for further conceptual and empirical work to better integrate developmentally based perspectives on the how and why of individual leadership development.

Drath et al. (2008) also suggested that facilitating and supporting the development of leadership requires new models that transcend individual development and integrate individual-level with collective-level development, while Kegan (1994) argued that the bridge must be well anchored on either side of both the individual and the organisation for effective development to occur. This study explores the issues connecting the bridge between holding environments and individual agency in leadership and is divided into the following chapters.

Chapter 2: Literature Review

This chapter explores the concept of the work organisation and the different models of organisation that have evolved together with their associated operating assumptions. Within this, a review of the literature on the macro context of the contemporary organisation as a holding environment together with its relationship to leadership meaning making within different organisational models is explored. The chapter also provides a review of the literature on adult development theories concerning Kegan's (1982) subject-object theory and its application to leadership and deconstructs Laloux's (2014) framework for understanding organisations as stages of development. Finally, the chapter concludes with a description of Kelly's (1995) personal construct theory.

Chapter 3: Methodology

This chapter details the use of a multi-phased mixed-method approach as the methodology used in the study. Using case studies and two sets of interviews, both qualitative (QUAL) and quantitative (QUAN) data was generated with SOI used as the measurement across both sets of interviews in analysing and evaluating both sets of data. An outline of the process involved in developing a perceptual matrix to explore the individual and organisational LOC is also provided.

Chapter 4: Presentation and Analysis

This chapter presents the analysis and findings of the six case studies. First, the chapter provides an eyeball analysis of the grid interviews followed by an analysis of QUAL data to establish the meaning-making of executive leaders' perceived form of mind of their organisation. This is followed by an evaluation of the data anchored within the principles of SOI protocols for scoring structures running the meaning-making of Kegan's (1982) LOC and Laloux's (2014) framework of stages of organisations.

Chapter 5: Conclusions and Recommendations

In this chapter, the overall contribution this study makes to the existing literature in this area is discussed, emphasising its relevance to practice across various organisations. The importance of understanding the structures running the meaning making of the mind in these research findings can be beneficial to leaders and organisations alike both in terms of gaining insight into the existing systems of meaning making both in terms of where they are working while also recognising flaws in the system by being able to step outside the systems and look at its limitations. The benefits of understanding our individual and

collective meaning-making, it is suggested, can create new meaning-making of both internal and external systems of organising and leadership. The chapter concludes recommendations for research in this area.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter begins with an outline of the organisational theory and organisational behaviour perspectives that have dominated organisations' operating assumptions of concepts throughout the 20th and into the 21st century. This outline provides the basis for highlighting emergent literature in organisational studies on the nature of the deep assumptions governing the meaning-making of organisations. This provides the context for examining and reviewing both the nature and type of leadership literature that has accompanied these constructs of organisations and behavioural theories and models of leadership within them. The chapter then provides a review of the literature on adult development theories to contextualise the application of a constructive development approach to leadership using Kegan's (1982) subject-object theory as the conceptual framework used in this study. This is followed by an outline of Laloux's (2014) framework that is used to explore the holding environments of organisations as developmental stages of consciousness as expressed in different organisational models. The chapter concludes with an overview of Kelly's (1955) personal construct theory, which forms the theoretical basis to create and develop the perceptual matrix used in this study.

2.2 Organisations

According to Bratton (2015), the work organisation is the most prominent symbol of capitalist modernity, affecting economic, cultural, political, and ecological environments. Regarding work organisation as a symbol of capitalist modernity, the central focus of this study is on what is transpiring in the minds of individual executive leaders and their sense-making of their own leadership and the capacity to move into new levels of consciousness within their organisations as a holding environment of 'the phenomena in question' (Strati, 2000, p. 69).

To understand the distinct holding environment of the different organisations in this study and the nature of their relationship to the LOC of the individual leaders, it is necessary to understand the broader social construction of sense-making that these organisations and their executive leaders inhabit.

Furthermore, Witzel (2012) argues that we can best understand the here and now of an organisation and its development by understanding its past. Correspondingly, Bratton (2015) states that the characteristic focus of these traditions ‘continue to dominate the study of the sociology of work’ (p.66). Morgan (1997) also suggests that conceptualising organisations depends on mental models or images, arguing that most theories can be understood as metaphors. Morgan (1997) identified the most common metaphors that view organisations as cultures, organisms, an iron cage, machines, networks, and learning systems, with these metaphors embedded in different theories of organisational behaviour (Bratton, 2015).

These metaphors, according to Morgan (2016), are illustrative and have a different significance based on their context, as organisations have shifted in general terms from hierarchical structures to flatter networks. Consequently, it is suggested that new metaphors are needed to understand this change. Furthermore, Morgan (2016) also discusses the ‘global brain’ and ‘organisation as media’ as examples of new metaphors and suggests that a combination of these metaphors is a useful way to think about the complexities of organisations.

Laloux (2014) further explored organisational metaphors as expressions of different stages of consciousness by drawing on developmental psychology to delineate different types of organisational models. Within this, Laloux (2014) suggested that the LOC of an organisation, as a particular model of organisation is expressed through the LOC of its leadership.

According to Baum and Haveman (2020), two new trends currently impacting upon organisational theory are the development of digital information processing and the neoliberal theories and ideologies that have promoted the globalisation of trade, finance and production that inform the organisational analysis of 21st century models of business organisations and society.

Organisational theory and organisational behaviour as academic disciplines intersect in their interest in understanding what is taking place in behavioural terms inside of organisations, such as understanding the meaning-making of leadership. Bratton (2015) states that organisational theory is broadly associated with the sociological aspects of work, while organisational behaviour is more closely associated with the individual psychology of behaviour within work organisations. According to Clegg (2006), the existence of the two terms is a matter of semantics, as there is a consensus that the field

of organisational behaviour embraces various sociological and psychological perspectives and issues. Bratton (2015) described organisational behaviour as difficult to define as it draws on ‘numerous disciplines, theoretical frameworks, and research traditions’ (p.8). Bratton (2015) highlights the distinction as follows:

However, organisational behaviour can be best understood as ‘the domain of psychologists and tends to focus on the micro-level studies of individuals and groups in organisations. Organisational theory is seen as the domain of sociologists and tends to focus on macro-level studies of groups in organisations (following the contingency approach: the idea that organisations adapt to consider contextual factors, such as technological advantages or the political landscape. (p, 8)

Furthermore, the concept of work organisations has underlying operating assumptions concerning the nature of reality and associated beliefs about people, workers, managers, and leaders. These assumptions have been expressed through an array of research that explores them from different rival perspectives or ideologies (Burrell and Morgan, 1979). Within this context, organisational behaviour theorists can offer different explanations as to why people do what they do in organisations, but according to Bratton (2015), it is possible to identify four ‘competing ideological camps’ (p.25). These are the managerial functionalist, the conflict, the symbolic-interactionist, and the feminist perspectives.

The managerial functionalist views organisations as complex systems with its different parts synergised to promote consensus and stability and with managers doing what they do according to the ‘imperatives of the market’ (Bratton, 2015, p. 26). Furthermore, while there can be variations of approach within this managerial perspective, the main issue within it is that it does not connect organisational behaviour to ‘the larger dominant political economic paradigm of neo-liberalism’ (Bratton, 2015 p. 26). The criticalist perspective views capitalism and organisations as socially alienating and exploitative, with its theorists interested in issues like power, control, inequality and conflict and an examination of the identification with ideological functions of the orthodox standpoint (Thompson and McHugh, 2009). The symbolic interactionist perspective on the other hand generalises about everyday forms of individual-level social interaction as a way of understanding social behaviour (Bratton, 2015) and is captured in Weick’s (1995) notions of ‘enactment’ and ‘sense-making’. The feminist perspective is rooted in a critical analysis of society and has emerged out of criticisms of traditional research with men on

men and focuses on areas of organisational life that other perspectives neglect (Bratton, 2015).

Within organisational theory, Grint (1998) developed a schema to capture the many possible research and theoretical approaches inside organisational studies into those inside a critical-managerial arena and those inside a positivist-interpretivist arena. The critical-managerial focus represents at one extreme the managerial perspectives concerned with efficiency and performance, while the critical aspect focus is on explanations of work and organisational behaviour based on alienation and exploitation of work and workers to fulfil economic imperatives (Bratton, p.82).

The positivist-interpretivist focus makes a distinction in the epistemology approaches to research. The positivist applies natural science research methods while the interpretivist focus is on the contingent nature of social reality and the subjective meaning making of behaviour within organisational behaviour (Bratton, 2015). Furthermore, Bratton (2015) observed that it is the managerialist perspective that is most often viewed as mainstream thinking in organisational behaviour. Grint's (1998) distinctions can provide a useful heuristic within which to contextualise the different approaches of theorising and researching the idea of work organisations and are outlined in the next section, providing context for the choice of the organisational behaviour symbolic interactionist perspective inside organisational theory that is used in this study.

2.2.1 Organisation Theory: A Heuristic

The managerial perspective has its roots in such classical work design theorists as Taylor (1911) and his associated principles of scientific management with a focus on the efficiency of the system and not on the individual working within the system. These principles focus on the separation of management thinking from workers whose sole purpose is to produce economic efficiencies with minimal autonomy, which is described by Mintzberg (1989) as an approach obsessed with efficiencies with no concern for the social aspect of work for people.

Fordism (1947) built on these principles of economic efficiency by introducing the standardisation of work practices to assembly line production. The principles of Taylorism and Fordism were adapted for much of the twentieth century in what was known as 'a common-sense approach' to management in North America and Western Europe (Braverman, 1974; Thompson and McHugh, 2009).

However, in the 1920s, there was a recognition of the social aspect of work productivity in what is known as the human relations movement, which is most closely associated with Elton Mayo and the Hawthorne studies (1924, 1928), which highlighted the role of the informal group on performance. Maslow (1954) and his concept of self-actualisation needs, as a motivator, is also associated with this movement.

According to Bratton (2015), the 1980s saw the introduction of teams as a work design, which emerged largely in the first instance as a competitive response to the Japanese car industry and its dominance of the market share of the American car industry (Womack et al., 1990; Bratton, 1992; Oliver and Wilkinson, 1992; Elgar and Smith, 1994; Thompson and McHugh, 2009). The Japanese used a work design based on quality circles and teams as their core work structure, which was subsequently adapted as a structural work design in North America and Western organisations.

The 1990s and into the 21st century saw the emergence of the knowledge worker associated with the emergence of information technology, which is understood as workers carrying the intellectual capital that they own in their heads rather than the manager or the owner of an enterprise. Horwitz et al. (2003) described a knowledge worker as an individual with the ability to apply professional knowledge as well as manage other employees.

This type of worker has led to the corresponding emergence of the creation of better human resource practices as a response to what Baud and Garrick (1999) refer to as ‘knowledge management’ (p. 48). According to Drucker (1999):

The productivity of the knowledge worker is likely to become the centre of the management of people.... This will require, above all, very different assumptions about people and their work. (p. 91)

These very different assumptions presented by Drucker (1999) revealed the operating assumptions that have dominated the managerialist paradigm underwriting organisational behaviour and principally driven by the interpretation of the concept of self-interest and ‘the invisible hand’ of Adam Smith’s *The Wealth of Nations* (1779), which, while a broad treatise on many societal issues of the day, is largely associated with the birth of free market theories of economics. This free-market ideology was an *interpretation* of Adam Smith’s treatise, which was deemed to suggest that everyone working in their own self-interests would ‘lift all boats’ based on the adage of ‘a rising tide lifts all boats’ and creates equality for everyone through the operation of this central premise (Buchanan, 2002).

This concept is fundamental to the neo-liberalist ideology of the market that emerged as the dominant meaning-making of order in society from the 1980s onwards and emanated from the Chicago School of Economics in the first instance, leading to the financialisation of the global economy. Wolf (2014) in his reflections on the financial crisis (2008) suggests it was a failure of systems and not of individuals while Starkey (2015) argues ‘the reality is that it is individuals, not systems, who act, albeit not in circumstances of their own choosing, and it is the actions of others that create those circumstances’ (p.657). Friedman (1970) a key proponent of neo-liberal economic ideology argued that individual executives are agents of the organisation and as such do not have the agency to make individual choices in their decision making about the broader moral and social decision making of the organisation.

Notably, Ghoshal (2005) argued that the dominant operating assumptions in work organisations is the assumption that it is the pathology of human nature to be inherently selfish and that the propagation of such assumptions has omitted the moral aspect of decision-making in management theories and in organisational practice.

Brown (2015) further argued that this idea of the market, as the dominant model to provide equity for all in society, has not worked and that we need new ideas around how to govern society and create organisations that are based on democracy and not on economising that democracy.

Regarding work organisations, the assumptions referenced by Drucker (1999) concerning people in work organisations are subsequently related to the different assumptions and theories of leadership applied to knowledge workers. Unlike Taylorism, these workers have more autonomy and empowerment, which is reflected in the changes in the structural design of work organisations into flatter hierarchies that are built around teams ‘to co-create new insights’ ((Bratton, 2015, p. 52).

These different assumptions have become evident through the emergence of different ideas on what constitutes leadership for these types of workers and organisations. For example, theories such as distributed leadership and shared and super leadership (Manz and Sims, 1989; Goleman, 2002; Raelin, 2003; Spillane, 2005) indicate the shift to flatter structures with the idea that sharing power with team members and developing team leadership assumes heightened importance (Manz and Sims, 1989) as a reflection of these changes.

This approach resonates with Senge (1990), who argued that in creative organisations, ‘leaders are designers, stewards and teachers’ (p.340). Additionally, Senge (1990) stated that leaders in learning organisations are charged with ‘Building organisations where people are continually expanding their capabilities to shape their future – that is, leaders are responsible for learning’ (p. 9).

2.2.2 The Paradox of Teams and Work Organisations

These ideas about the nature of leadership associated with the ‘knowledge worker’ and the corresponding flattening of the hierarchical structure to allow for autonomous work teams is viewed from a criticalist perspective as a form of management control with the team members controlling one another understood as the paradox of teams (Kasl, Marsick and Dechant, 1997). The paradox is based on the idea that rather than the manager being in control, as in Taylorism, it is the team members who are controlling each other regarding performance outcomes but still in support of a management perspective (Thompson and McHugh, 2009).

In this regard, Taylor, Ladkin and Statler (2015) state that this paradigm of ‘management as science’ (p.575) has dominated business practice and business schools anchored inside epistemological assumptions about ‘what management is’ (Sandberg and Tsoukas, 2011, p. 338). They argue that ethical values are not necessarily a part of the management paradigm if the rules of the game are complied with and enforced. Therefore, management in this context is value neutral, like a science.

On the other hand, Nebuert (2011) states that there are alternative theories of management focused on the potential for a better or more promising future for organisations, their members and society. One approach is to envision and create management theory and practice based on a moral-point-of-view rooted in virtue theory (e.g., MacIntyre, 1981; Alford and Naughton, 2001; Dyck and Weber, 2006; Moore, 2008; Dyck and Neubert, 2010). While this study does not focus on virtue theory, it does explore an alternative approach to understanding leadership constructs within organisational paradigms by examining the relationship between the organisation as a form of mind in its meaning-making and its relationship to the capacity for evolution into new LOC and ‘re-cognitions of care’ (Kegan, 2020) as an implicit outcome of that capacity.

The concept of an ‘ethic of care’ is, according to Simola (2003), ‘reflected in a concern about how to fulfil conflicting responsibilities to different people as opposed to questions about how to resolve claims of conflicting rights among them’ (p. 345). Gabriel (2015) also suggests a focus on leadership of care to align with the rise and interest in care and compassion as core elements of organisational life (Mallis, 2012; Ryne’s et al. 2012).

More recent research on leadership has also focused on the need for models that explicitly address social inequity and a need to produce a ‘better’ society by rethinking and reinventing leadership (Western, 2013), while others seek models of leadership that regard human dignity and social justice (Morrison, 2015) as mediated by the ‘visible hand of government’ (Bratton, 2015, p. 339).

Wheatley (1992) also describes leadership as a dynamic phenomenon in which relationships, awareness, self-regulation, and participation are dilemmas to be resolved. This research in turn and as is outlined in the next section adapts a sociological perspective of symbolic interactionism (Mead, 1934; Weick, 1995) that focuses on the subjective meanings that people create through face-to-face communication in micro levels of social settings, such as work organisations.

2.2.3 Symbolic Interactionism

Weick (1995) defines an organisation as ‘a network of intersubjectivity, shared meanings that are sustained through the development and use of a common language and everyday social interaction’ (p. 38). Weick (1995) does not accept the definition of an organisation as an architectural design but rather argues that it exists in the minds of the people who inhabit it and that organising is a process of constant enactment of activity and reflection on that activity on the self and with others in shared meanings that induce the construct of organising itself. According to Mead (1934), shared meanings become embodied through language and can only be learned through socialisation. Mead (1934) derives the concept of ‘self’ from the idea that the identity of ‘the self’ develops through the process of social interaction with others and the social self ‘allows us to take on social roles, reflect on ourselves and internalise social expectations’ (Bratton, 2015, p. 89).

Mead (1934) emphasises individual sociability and places the human experience of ‘self’ centre stage. According to Mead’s (1934), the self has two parts: the ‘I’ (unsocialised self) and the ‘Me’ (socialised self). Mead emphasises the ‘I’ as the key source of creativity in which the individual’s values are located and contain something that all individuals

seek, that is, self-realisation. Mead (1934) posited that as a society develops, its inhabitants become increasingly dominated by the 'I' and less by the 'Me'.

Kegan (1982) also states that during psychological development, the 'I' of one stage of development becomes the 'Me' at the next stage and how it is both the capacity for and the journey through the adult developmental trajectory of increasing expansive levels of consciousness that closes the gap between these two parts of the self, which he refers to as the subject-object self. This process occurs within parts of the self and is then externalised through more expansive levels of connection and alignment with 'the other', echoing Wilber (2000) who suggests that because of this process, 'the interests of others fall into the orbit of his own extended identity' (p.36).

In this process, the 'I' is known as the proximate self, or the subject self, which can also become the object self (farther away from self). As stated by Kegan (1994):

Subject refers to those elements of our knowing or organising that we are identified with, tied to, fused with, or embedded in. We have objects; we are subject. We cannot be responsible for, in control of or reflect upon that which is subject. (p. 32)

Kegan (1994) also notes that 'Object refers to those elements of our knowing or organising that we can reflect on, handle, look at, be responsible for, relate to each other, take control of, internalise, assimilate or otherwise operate upon' (p.34).

Wilber (2000) refers to the 'I' and the 'Me' together as 'the overall self' and states that what each of us calls 'I' or a proximate self is 'both a constant function and a developmental stream' (p. 32). According to Wilber (2000), empirical evidence shows that 'the self's centre of gravity tends to hover around a LOC at any given moment with the proximate self-reflecting both as a stage and a developmental stream' (p.30). The subject or proximate self is the central source of identity, and that identity, according to Wilber (2000), 'deepens as the self goes from egocentric to sociocentric to world-centric self, otherwise known as pre-conventional, conventional and post-conventional self' (p.360).

The 'I' and the 'Me' within the self can also be understood as to how they are held within the socialisation process of a corporate organisation. For example, to what degree is the 'I' enabled to be released into new LOC of leadership inside constructs of organisations within the agency-structure debate in the management literature (Zoller and Fairhurst, 2007). This agency-structure debate in turn is reflected in broader issues of power in

social theory such as that defined by Foucault (1980) which ‘ prevents some behaviours while at the same time positively encourages others , both at the broadest political and historical levels and at the deepest levels of individual identity’ (Bratton, 2015,p. 378).

Strati (2000, p. 69) states that this agency–structure debate of the relationship between an individual and an organisation in organisational studies has yet to be resolved. This type of dualism of agency and structure is what Simpson (2018) describes in the management literature as ‘the ostensive and performative (or structure and agency) perspectives’ and is likened to Mead’s presentation of the ‘I’ and the ‘Me’ as different aspects of the self.

This duality is relevant to the six different organisations and executive leaders in this study regarding what they understand their individual leadership to mean or what it might be (agency) regarding their organisation (structure) and its holding environment. This meaning-making is within the context of deep-rooted operating assumptions, which permeate the atmosphere as a cultural space (Benson, 2001) and are learned and absorbed merely as what is.

Weick (2001) uses the metaphor of an orchestra to describe the idea of an organisation as something that exists only in the heads of the orchestra members, expressing the organisation's reality. Contextually, organisations are flexible mental models rooted in social constructions regarding the paradigms that underwrite their meaning-making at given moments in time. Langenberg and Wesseling (2016) suggest that Weick’s (2001) description of organisations creates a more critical understanding of organisations where ‘the relationship between the organisation and the individual act can also be expanded and the question about the role of the organisation in the world today can be asked in a different way.’ (p.220).

This type of expansion in the social construction of an organisation and the role of the individual act within it can be observed in the emergence of alternative models of organisation that have emerged in the literature. One such model is Laloux’s (2014) model of organisations as stages of consciousness used in this study. However, before outlining Laloux’s (2014) framework, the next section provides a critique of other models of organisations to contextualise the approach to leadership as a psychological developmental construct mirroring and mirrored in the creation of alternative models of organisational constructs.

2.2.4 Alternative Models of Organising and Organisation

According to Wolfe (2012), an organisation and its individuals cannot behave or operate in ways contrary to the context framing defining the organisation. He observes that this context:

Is found in shared stories, the mythology we use to explain our world to ourselves and to others. As such it is not something that we can easily observe or measure, but it literally defines what is and is not possible around here. (p. 27)

Wolfe (2012) offers an alternative paradigm of organisation, which he describes as the living organisation moving beyond the machine metaphor broadly associated with the dominant scientific model of organisation.

He argues that the living organisation is a better paradigm of organisation than the machine paradigm regarding 21st century challenges, suggesting that 'Just as physics needed to transcend the mechanistic view of classical Newtonian physics, business needs to replace the rational, mechanistic paradigm that limits our range of choices and evolve to the next level of The Living Organisation' (p. 24). The distinction of this model is moving 'from people serving the process to the process serving the people' (Wolfe, 2012, p. 25). Furthermore, Wolfe (2012) argues that 'in the machine paradigm, profit is the goal of the organisation. In the living organisation paradigm, profit is an indicator of how well we are performing in service to our customers' (2012, p.25).

Wolfe (2012) also distinguishes the living organisation paradigm from the machine model of the organisation, much like energy flowing through the human body, of which he applies this concept to the model regarding activity, relationships, and context. He suggests that people are viewed as the core source of all energy in the living organisation paradigm. Unlike the 'machine' model of organisation, in which people are replaceable and interchangeable, in the living organisation, people are seen as being unique and constantly renewable and through growth, 'they can increase the sources and amount of energy they can tap into and bring forward' (2012, p. 25).

He also describes how unlike in the machine metaphor of organisation, where people are seen generally as input costs about effective outcomes, the living organisation regards people as the optimum way an organisation can increase its effectiveness and obtain a return on investment by focusing on a process of learning through the development of its people.

Wolfe (2012) posits that the living organisation paradigm addresses a deep need for the connection of people with an organisation in the sense of a soulful purpose for meaning. He describes this soulful purpose of sense-making as one that connects and aligns the individual by transcending the need to simply produce goods and services and instead 'to make a contribution to the market it serves and to the greater society' (Wolfe, 2012, p. 28).

Wolfe (2012) suggests that this alternative paradigm of organisation requires a new form of leadership, suggesting that the evolutionary journey of the modern corporation is also mirrored in the evolutionary journey of those that led them. He argues that the new role of leadership within the alternative paradigm of a living organisation is as follows:

This is the new focus of organisational leadership that sets the context, develop people, build community, and be in service. This effort will naturally lead to organisations whose focus is more than winning and more than merely making money. We will create organisations whose focus is to be of service to their customers and society. Corporations that are living organisations will naturally be socially responsible citizens who contribute to the welfare of their community, whether local or global. (2012, p. 30)

Wolfe (2012) explains how leaders in this model will help give voice to a deeper purpose and meaning, that is, a soulful purpose, while leaders will also consciously focus on developing the individual's growth as a whole person, leading to an increase in the overall collective level of energy contributed to the organisation. The leader will be responsible for building relationships across and within the organisation 'bound together by a set of common ideals, a community of people who give to the community and in return receive from the community' (p.29). Wolfe (2012) further states 'that leaders in this paradigm of the organisation recognised that all value is created through being of service and the purpose of the living organisation will always be to improve the life of its customers' (p. 30). One could also argue that this construct of leadership within such an alternative model as the living organisation paradigm is espoused in the work of Benefiel (2008) as it relates to soulful leadership.

Benefiel (2008) outlines how 21st century leaders are rewarded for their drive, decisiveness, and productivity. However, she questioned what happens to the leader's soul and the organisation it serves in such environments, arguing that the soul 'shrivels and dies, resulting in harm to the leaders and the organisation' (2008, p. 8).

Benefiel (2008) defines the soul as the deep essence of a person and 'that soul is the way that emotional and relational depth is honoured and the way that yearnings for

development or evolution are given space, whether in a religious context or other contexts' (p. 9).

Within this, she reflects on 'the many scandals in business, non-profits and religious institutions where leaders give into the pressures to cook the books, to cut quality to make a quick buck, or to the allure of greed, lust and power' (2008, p. 15). She argues that neither the business environment nor business schools allow 'the theme of the soul to take centre stage' (p.16). She maintains that the model of organisation, with its social-scientific language that has dominated Western society's constructs of organisation and leadership, have emphasised efficiencies and effectiveness based on external measures. She suggests that, while these are necessary measures of effectiveness, they can also distort the balance when they are the only measurement.

The external results lauded by those who study leadership depend upon the internal. Yet paradoxically, the internal is largely a taboo subject in mainstream leadership and management literature. Like arborists trying to improve the health of a tree while ignoring its roots, leadership scholars, by and large, have been blind to a significant dimension of leadership. (Benefiel, 2008, p. 19)

Benefiel (2008) argues for what she refers to as 'the reintegration of the internal and external in both the study and practice of leadership' (p. 19), suggesting, in turn, that both internal soul formation and external skills are 'necessary for effective, inspired, ethical leadership over the long haul' (p. 19). Benefiel (2008) also suggests that when these two aspects of the leader, the inner world and outer world, are addressed, then a process of transformation regarding leading with soul can occur in the leader and is paralleled by the transformation in the leader's organisation.

While Benefiel (2006) addresses the connection between the internal world of the leader and the external world of the organisation, this study also considers Laloux's (2014) work as a progression on these ideas by relating the LOC of leaders to the model of organisation in practice.

The idea of natural co-operation is an area that Laloux (2014, p. 22) argues, has received limited attention in the research on organisational models and that within successive evolutionary movements into new organisational models, with 'each breakthrough in human consciousness, there also came a breakthrough in our ability to collaborate bringing a new organisational model'.

This idea of natural cooperation is echoed in Laloux's (2014) research on organisations based on second-tier consciousness, which have organisational designs that reflect different LOC of leadership constructs.

These have been described by Kegan (2015) as the best vision to date of organisations working from a fifth-stage form of mind, which is understood in his theory as a self-transformative form of mind:

People have long asked me what a "5th order, or "high-stage" organisation would look like in the flesh. Frederic Laloux's richly researched book is the closest anyone has come yet to answering this question. This is a stimulating and inspiring read! (Laloux, 2015, p. 3)

Laloux (2014) states that human consciousness is empirically proven to move in successive stages, and this, in turn, is reflected in different organisational models evolving historically into different paradigms of meaning-making based on this evolution of consciousness. This evolutionary movement in Laloux's (2014) research on the stages of consciousness of an organisation understands the centre of gravity of the organisation's meaning-making at a given moment in time to be evidenced in the leadership, culture, processes, and systems of the organisation.

It is suggested by the author of this study that Laloux's (2014) reference to culture as a map for gaining insight into the developmental level of the organisation is echoed in what Kegan (1982) refers to as the holding environment of the organisation. This implicitly includes the hidden curriculum of the organisation, permeating the sense-making within the mindsets of the people in the organisation. It reflects, in turn, different role identities and different senses of location and place (Benson, 2001) inside the distinct units or disciplines of an organisation, which all occur in the mix of the overall culture of the holding environment of the whole organisation as a collective mindset.

The emergence of organisational models, for example, Laloux's (2014) second tier of consciousness, while not yet the normative model of organisation, reflects significant movements in the realm of meaning-making and is of particular interest because it counters the dominant narrative of leadership theories that are frequently used to describe effective leadership strategies in organisations.

2.3 Overview of Leadership Theories

Billsberry (2009) states that the literature on leadership is vast, while the definition of the construct of leadership itself is heavily contested. Yukl (1989) also states that the definitions vary based on whether they focus on traits, behaviours, follower perceptions, role relationships, whether one person holds the leadership role within a group setting, or whether the leadership role is shared between the group's members.

Grint (1997) also suggests that leadership as a construct is heavily contextualised, thus arguing that some ideology underwrites all theories with the construct of leaders based on a division between our objective and subjective assumptions regarding knowledge and data. Grint (1997) further argues that there is no essential category for defining leadership, but rather that it is constituted and reconstituted as a heuristic continuum of meaning-making between essentialist constructs of leadership that can be objectively defined and non-essentialist, which perceive leadership to be entirely subjective. These constructs reflect different movements in the meaning-making of leadership over time.

Grint's (1997) approach to leadership suggests a constituted and reconstituted leadership theory to be interwoven with acts of persuasion in which all voices are equal, but some are more equal than others. As such, leadership as a construct is contingent on the power of persuasive accounts and not contingent on rational or relational analyses. In other words, the constitutive approach to leadership is:

Derived from constructivist theories in social science and its most radical format, rejects the notions of essences entirely (Grant and Wolgan, 1997). It rejects the idea that we can ever have objective accounts of either the individual or the situation because all such accounts are derived from linguistic reconstructions; they are not transparent reproductions of truth. Instead, the approach suggests that what the situation and the leader actually is a consequence of various accounts and interpretations, all of which vie for domination.(p. 17)

Within this conceptualisation of leadership, the various theories that exist can be broadly divided between those that reflect the dominance of the Ford production paradigm of Western organisations and those reflecting post-Fordist paradigms (from the 1970s onwards) within management theory. Fordism reflects leadership more as a transactional paradigm, in which the role of the leader is to motivate subordinates by clarifying the role and task requirements and reflects the first systemic approaches to leadership in the 20th century (Lewin et al. 1930; Mann, 1959; Fiedler, 1964; Hersey and Blanchard, 1969; House, 1971; Stogdill, 1974; Blake and Mouton, 1978; Kerr and Jermier, 1978).

Within this context, among the first of the approaches to emerge was the great man trait theory, based on the idea that there are essential and innate traits with which one is born that make one a leader. For example, Galton (1869, cited in Bass, 1990) examined leadership qualities in the families of powerful men. After showing that the number of eminent relatives declined when moving from first-degree to second-degree relatives, Galton concluded that leadership was inherited. In other words, 'leaders were born, not made'. Stogdill (1974) developed trait theory further by identifying complex groupings of traits and social interactions rather than a single trait. He suggested that some positive traits were associated with leadership, such as stamina, class position, intelligence, and a desire to excel together with social attributes such as diplomacy and tact. According to Stogdill (1974), this cluster of traits differentiates leaders from followers and effective from ineffective leaders.

This theory is echoed in the idea of the heroic leader as a conceptual definition of leadership. In this theory, the emphasis is on selecting the right leader with these innate traits because while one might try to develop these traits, if they are not there in the first place, they cannot be developed. This trait approach continues to have its advocates, with Yukl (2013) identifying eight significant traits that are positively related to leadership effectiveness (energy, internal locus of control, self-confidence, emotional maturity, integrity, power motivation, achievement orientation and a low need for affiliation), while Kirkpatrick and Locke (1991) argue 'that it is unequivocally clear that leaders are not like other people' (p. 59).

However, a critique of trait theory is that it does not consider context, for example, as in this study, the holding environment of a particular organisation that a leader inhabits, while also failing to recognise the importance of the followership process in leadership (Harter et al.2006). A further critique of these leadership theories is that the trait approach is not cross-cultural in its application as, despite globalisation, what might be perceived as a positive personal characteristic in Anglo-American culture may not have the same sense in other cultures, as noted by (Granrose, 2001 cited in Bratton, 2015).

Zaccaro (2007) further notes that trait theories focus on a small set of individual attributes and neglect cognitive abilities, motives, values, social skills, expertise, and problem-solving skills, while equally failing to distinguish between those leader attributes that are generally not malleable over time and those that are shaped by and bound to situational influences.

Denis et al. (2001) also cautions against the glorification of a single individual hero as leader, while Miendl et al. (1985) argue that the concept of a heroic romanticised leader overshadows the follower.

As a function of ongoing changes in the constructs and models of work organisation, a new focus in leadership theories emerged based on behavioural theories in the 1930s and 1940s (Lewin et al., 1939; Blake and Mouton, 1978) and on situational/contingency theories (Fielder, 1964; Hersey and Blanchard, 1969; House, 1971; Kerr and Jeremy, 1978).

Behavioural theories move away from the idea that leaders are born to what leaders do and to how they behave towards followers. In the 1940s, two research programmes in the United States, the Michigan, and the Ohio studies, focused on the analytical frameworks of followers' assessments of their leaders' behaviour based on two core dimensions: a concern to accomplish the task and a concern for the people. The Michigan researchers found that employee-orientated leadership behaviours were associated with higher workgroup performances and higher satisfaction among group members regarding effectiveness (Kahn and Katz, 1966). The Ohio research found that the most effective leader scored highly on both dimensions and that leadership can originate from individuals who held no formal position in the organisation (Grint, 1997).

These studies provided the foundations for behavioural theories of leadership for the next 30 years (Bass, 1990; House and Aditya, 1997; Quinn, 2005; DeRue et al., 2011), which focused on different patterns of behaviour grouped and labelled as styles (Northouse, 2015).

The drive behind these theories correlated with the initial move away from the Tayloristic scientific principles of management in work organisations into the human relations approach to work organisation, with its emphasis on finding the right combination of task focus and person focus style of leader behaviour, with a focus on gaining best performance outcomes with workers as a function of getting this combination right.

Some taxonomies of leadership have also been developed based on these underlying concepts, such as the leadership grid by Blake and Mouton (1978), designed for leadership trainees to assess their current levels of task-and people-orientated styles. The leadership grid has been tested several times, and the results have been mixed, leading to criticisms of the behavioural style approach to leadership research.

The approach has been critiqued based on the tenuous link between production and relationship behaviours, while others, such as Yukl (2013), suggest that akin to the trait approach, the behavioural approach to leadership seeks simple answers to complex questions. Generally, the consensus among researchers is that there is no single best way to lead and instead that the effectiveness of a leadership style is dependent on situational factors. Indeed, Collinson (2005) states that many leadership studies have only concentrated on leaders' traits and styles and ignored or underestimated the relationship between leaders and followers.

Contingency theories (see, for example, Fielder, 1967; Hersey and Blanchard, 1969; House 1971; Kerr and Jerkier, 1978) proposed that the most effective leadership style depends on the leader, the followers, and the situation and posited that the situational conditions under which leaders and followers interact with each other are imperative in organisational success (Vroom and Jago, 2007).

First developed by Fielder's (1967), contingency models assume that leaders are either task-or relationship-oriented and can change their orientations using a framework for matching the leadership style to the situation, which looks at the favourableness of the environment for the leader. However, Fielder's (1967) model has generated debate about its validity, with Peters et al. (1985) suggesting that it is better supported in the laboratory than in field studies.

The literature on behavioural approaches to leadership also displays some evidence that leaders can change and adapt depending on the situation, which, subsequently, can play a critical role in leadership and organisational effectiveness (Sternberg and Vroom, 2002; Vroom and Jago, 2007; Nye et al., 2008). For example, the situational theory of leadership developed by Hersey and Blanchard (1969) and Hersey et al. (1977) suggested that a leader's behaviour should be adjusted according to the maturity of the followers. It uses the two core dimensions of the Ohio studies: one is task orientated, and the other is people orientated. The theory outlines four styles of leader behaviour that could be adapted: telling, selling, participating, and delegating (Hersey and Blanchard, 1969; Hersey et al., 1977). These styles are subsequently dependent on the correlation between the levels of ability or inability versus the willingness and unwillingness of the followers to take responsibility for their work due to their different maturity levels.

The situational leadership model, while questioned for not having a central hypothesis that can be tested, has undergone some tests that found support for the model as a valid, reliable theory of leadership (Bratton, 2015). However, other studies have found no support for it as a valid and reliable theory of leadership (Vecchio, 1987; Blank et al., 1990). The change in leadership research to more contemporary leadership theories reflected a change in the macro forces of the environment and its impact on the constructs of work organisation models that form the next section of this study.

2.3.1 Contemporary Theories of Leadership

The change within organisational structures to working in groups and teams and the related concepts of empowering people at different levels of the organisation is reflected in the emergence of leadership theories, such as leadership in practice (Carrol et al. 2008) and shared and super leadership (Manz and Sims, 1989; Raelin, 2011). Other theories have emerged incrementally, such as emotional intelligence (Goleman, 1998; Goleman, Boyatzis and McKee, 2004), Heifetz's model of the adaptive leader (1994; Heifetz, Glashow, and Linksy, 2009) and Greenleaf's (1977) idea of servant leadership. Goleman et al. (2001, p.66) focus is on the importance of understanding what they refer to as 'the science of moods' of the CEO as emotional leadership and its impact on effective or ineffective performance outcomes of an organisation.

In the last quarter of the 20th century, considerable enthusiasm emerged for 'the transformative outcomes attributed to the perceived charismatic leader' (Bratton, 2015 p. 339). The transformative leader (Burns, 1978) emphasises symbolic behaviour and an inspirational appeal to values and self-sacrifice. The core proposition of this theory is that leaders can have a transformational effect on followers' performances, worldviews, sense of self and morality. Burns (1978) argued that a transformational leader helps move people beyond their wants and desires to higher levels of motivation and morality, and some scholars have suggested that transformational leaders are agents of social and organisational change (Bass, 1985; Bass et al., 2003). According to Bass (1985), this type of leadership encourages followers' growth and development, enabling them to transcend their own self-interest for a higher, collective purpose.

Bass and Steidlmeier (1999) argue that 'to be truly transformational, leadership must be grounded in moral foundations' (p. 181).

However, they also highlight that a pseudo-transformational leader may appear to be a transformational leader but is not genuine and that a leader can often display the characteristics and behaviours of a transformational leader but does not have the moral basis to be transformational.

Within this leadership construct, there is evidence to suggest that transformational leadership can enhance employee motivation, performance, levels of satisfaction and organisational measures of effectiveness (Bratton, 2015). However, Yukl (1989, p. 212) noted that the focus on the transformational model 'is an unwarranted oversimplification of a complex phenomenon', which does not consider group or organisational processes.

Furthermore, according to Tourish (2014, p. 68), followers are positioned as passive, malleable beings 'whose role it is to respond to leaders'. Contextually, given what Gardner et al. (2011) refer to as 'deep-rooted concerns about the ethical conduct of today's leaders based on chilling examples of corporate and government malfeasance' (p. 120), this sense-making of transformative leadership in practice in organisations is called into question.

The notion itself of transformative leadership is critiqued by Tourish (2013) as an inevitable idolisation of sorts as power that is never very far from who or what is empowered inside these theories. Alvesson and Kärreman (2016) argue that mainstream studies of leadership, such as transformational leadership, are not ideologically untouched because ideology-free studies are impossible. However, the authors suggest that texts can be 'ideologically' disruptive and unruly rather than reinforcing comforting thought patterns.

Furthermore, Alvesson and Kärreman (2016) maintain that a considerable amount of leadership research is about the detailed investigation of specific theories, while the underlying ideological nature of the entire enterprise tends to be neglected. They further argue that few studies have looked deeply or closely at this subject matter; hence, there is considerable 'black boxing' concerning what happens in leadership.

In reviewing these different leadership theories, Grint (1997, p. 23) suggests that 'we concentrate not just on what leaders do and what the situation is but on the formative issues behind all phenomena'. In this context, considering this idea of Grint's (1997), it is noteworthy that the author of this study suggests that the essence of transformational leadership is based on processes of change and transformation. However, the question arises on whose behalf this transformation occurs regarding the operating assumptions or

ideologies driving that transformation on behalf of an organisation. If it is on behalf of the leader's vision, how does that vision align with the collective good? Additionally, who decides what the collective good is regarding the social value, and how is that understood in sense-making within the dominant market economy's operating assumptions and enacted sense-making? For example, it could be argued that before the global financial crisis of 2008, organisations were using transformational leadership to increase their profits and stimulate a vibrant economy.

However, when the metaphorical house of cards collapsed, that is, when Lehman Brothers collapsed, it became evident that the effectiveness of transformational leadership did not consider the collective good as suggested, for example, by (Bass and Steidlmeier, 1999) in being grounded in moral foundations given the enormous social cost for many in society because of the decision-making of many leaders in financial organisations during this period of financial upheaval.

A key point of Kegan's (1982) constructive development theory is that in the movement through stages of consciousness, it is crucial to know at any given point what form of mind one is using to manage meaning. It is posited that this holds true within organisations reflecting different forms of consciousness as their primary centre of gravity and the sense-making of constructs such as transformative leadership, for example, and its manifestation in the follow-through decision-making of a particular hegemony of a dominant order of mind.

Furthermore, if, as Laloux (2014) argued, an organisation's leadership can only operate at the stage of the development of its leaders, is there some link between the capacity of the individual leader to sustain such values and the self-sacrifice espoused as the essence of transformational leadership inside different organisations' models, as outlined by Laloux (2014). Additionally, when there is a competing, conflicting commitment for organisational success, how might understanding the different stages of Kegan's (1982) meaning making in LOC in the structures of the mind help gain insight into how leaders respond to these competing conflicts and how they might or could respond differently with a more complex form of mind.

Day and Antonakis (2012, p.12) have stressed that 'understanding the contextual factors in which leadership is embedded is necessary for advancing a more general understanding of leadership'. Furthermore, according to Hosking (1988), there is a need to focus on leadership research on the relational processes in which social order is negotiated and less

of a focus on individual leaders regarding behaviours and traits, thereby emphasising the construction of leadership as locally and culturally historically situated.

Parry and Bryan (2006) suggest that there has been progress in variations and developments in leadership studies, such as relational theory (Uhl-Bien, 2006), dialectical and critical understandings (Collinson, 2005, 2011), developmental approaches (Hesling and Howell, 2014) and critical approaches (Alvesson, 2011). Furthermore, Tourish (2015) reimagined leadership by drawing on the process and communication-based theories of an organisation in which leadership emerges through the interactions of the organisational actors and has a contested fluid meaning for all of them. This perspective resonates with Kegan (1994), who argues for leadership models that urge leaders to create a context in which all interested parties can create a collective vision together in contrast to the leader directly providing a vision for leadership suggested by Heifetz (1998).

According to Collinson et al. (2018) it is time to stop romancing leadership and relinquish concepts of heroes, whether they are based on knowledge or skills or spiritual theories of the transcendence of the self, which enables such theories to be interpreted as a privileged unit of thought 'above the fray of political or historical critique' (p.1642). Instead, Collinson et al. (2018) suggest that we might recognise that, in the words of the Hopi Indians, 'we are the ones we have been waiting for warts and all' (p.1642). Contextually, Crevani et al. (2007) and Cunliffe and Eriksen (2011) emphasise that leadership is dynamic, created and continually unfolding in mundane and everyday discourses and interactions. Indeed, Heifetz and Laurie (2002) warn that as the organisational environment becomes more complex, leaders must partially abandon their focus on being technical gurus to assist followers to become problem solvers in the face of situations requiring adaptation.

This study aims to consider what Tourish (2015) describes as some of the pitfalls and argues that transformational leadership can be 'rooted in a profound appreciation of context, an understanding of the limitations inherent to leader agency and the acknowledgement of the agency of others.' (p. 151).

It is suggested in this study that these are the types of issues that can be usefully examined inside forms of mind and the operating assumptions that underwrite their meaning-making, which this study explores at the micro-level of the six case studies of individual executive leaders and their organisations.

Indeed, Day et al. (2008) call for research that focuses on development as the criterion of interest rather than leader performance. Thus, the focus of this study is not on the effectiveness of leadership in purely economic terms and performance outcomes, but rather how those performance outcomes are understood regarding the value added to others in society and the overall impact of those outcomes on society. Within this context, a developmentalist approach to leadership has been adapted for this study.

2.3.2 Leadership and developmental approaches

Regarding the inquiry of this study, the LOC of the leader as conceptualised inside Kegan's five stages of consciousness and their potential to mature the structures governing the meaning-making of the mind would seem to be pivotal. As Kegan (1994) notes:

The expectations upon us [in modern life] ...demand something more than mere behaviour, the acquisition of specific skills, or the mastery of knowledge. They make demands on our minds, on how we know, and on the complexity of our consciousness. We are, as he asserted, 'in over our heads' with the kinds of adaptive challenges we are facing today; our 'conventional' consciousness is not geared to respond effectively. (p. 5)

Correspondingly, according to Chesley et al. (2020, p. 180), 'less than 10% of leaders have the qualities of mind to optimally lead in volatile, uncertain, complex and ambiguous (VUCA) environments. Furthermore, Chesley et al. (2020) described how 80% of leaders are operating from the conventional stage 'while emerging complexities call for the higher order of mental complexity found in post-conventional stages' (p. 182). Vincent et al. (2015, p. 239) state:

More than ever, the world needs leaders who operate from post-conventional consciousness because of their transformational capacity, agility, creativity, flexibility and mature insight (Barker and Torbert, 2011; Cook-Greuter, 2004; Joiner and Josephs, 2007; Kegan and Lahey, 2009; Rooke and Torbert, 2005)

Chesley et al. (2020) further suggest that the way to address this gap is to shift the focus 'from competency models of leadership skills to growing and cultivating more sophisticated and agile mindsets' (p. 181). Probert and Turnbull James (2011) argue that competency models of leadership 'do not consider implicit cultural and psychological processes' (p. 138). Furthermore, Probert and Turnbull James (2011, p.138) suggest that

the competency model approach disregards ‘the subtle, moral, emotional, and relational aspects of leadership (Bolden and Gosling, 2006, p. 158)’ and ‘only articulates that which is objective, measurable, technical, and tangible (Carroll et al. 2008, p. 365).’

Chesley et al. (2020) argue for the use of constructive adult development theory as the map for adopting a mindset developmental approach to leadership by suggesting that the journey through different adult developmental stages and associated theories (Loevinger, 1976; Cook-Grueter and Miller 1994; Rooke and Torbert, 2005; Kegan and Lahey, 2009) is characterised ‘by different motivations, behaviours and decision-making orientations to self, others and the environment’ (p.181).

Additionally, Vincent et al. (2015, p. 238) state that constructive developmental theory has begun to influence the field of leadership (Laske, 2003; McCauley et al., 2006), being seen as a valuable map to developing levels of consciousness. This they suggest enables a new capacity to deal with ambiguity and ‘to collaborate more effectively with diverse others, view problems holistically and engage with them courageously and creatively’ (Cook-Grueter, 1999, 2004).

Kegan and Lahey’s (2009) *Immunity to Change* is one such constructive developmental approach to leadership with a focus on understanding leadership not just as *what* we know but also *how* we know, launching an opportunity for awareness of what order or form of mind is directing the meaning-making of the mindset inside the individual self or the organisation.

It is an approach to leadership that seeks to help individuals gain access to what is happening in the invisible layers of their consciousness, which directs the meaning-making in the structures of their minds. This access helps them become more self-aware of their own meaning-making and how their realities are constructed, thereby allowing movement into more complex levels of meaning-making to organise the individual’s increased understanding of their experiences (Kegan and Lahey, 2009).

2.3.3 Immunity to Change

The emphasis of *Immunity to Change* (2009) is on individuals gaining more insight into what Kegan and Lahey (2009) refer to as hidden competing commitments or the subconscious ways that we as humans tend to hold on to beliefs and ideas inside our minds, even as we consciously seek to change them.

Immunity to Change (2009) is a developmental tool used to obtain a kind of internal x-ray into one's mindset and, in doing so, gain more insight into the competing commitments both at the individual level and at the organisational level. It is a process to open an awareness of the operating assumptions that lie at the heart of what we are doing or not doing regarding our behaviour and decision making that paradoxically maintain the status quo even while we seek to change it consciously.

Kegan and Lahey (2009) refer to 'hidden competing commitments' as individually scripted responses or reactions within the individual self to a way of being in an organisation because of managing oneself inside what the individual self perceives or understands as its curriculum. The hidden curriculum relates to the deep operating assumptions driving the cultural and political realities and identities inside any system in society or organisations, which underwrites its theories, policies, and practices.

Kegan and Lahey (2009) suggest that competing commitments make people personally immune to change and, at worst, can undermine employees and organisational success. They argue that in taking a psychological approach to sense-making, as they expound in their immunity to change process, one is challenging the most profound psychological foundations of employees and their deep-rooted beliefs. It is the experience of this disequilibrium—this optimal conflict, according to Kegan and Lahey (2009), that is the key to opening the door into these hidden competing commitments, which is understood as the first step to both building and choosing the capacity to change these behaviours. This capacity is a function of first becoming aware that these operating assumptions are what is driving one's behaviour and, second, engaging in different types of behaviours and practices and testing these assumptions as a way of changing them where appropriate within the self and in one's behaviour.

Kegan and Lahey (2009) argue that this approach helps employees become much more effective and, subsequently, make more significant contributions to an organisation. Furthermore, they outlined that the approach helps organisations identify what is occurring when people become obstinate when resisting change. They suggest that gaining insight into one's own subconscious both at an individual and organisational level enables all those involved to obtain greater accomplishments, and the organisation benefits by gaining greater access to people's talents.

Regarding organisations, Kegan and Lahey (2009) argued that without understanding these hidden competing commitments, how they work and ways to overcome them, no amount of change management within organisational behaviour would be sustainable. Within this context, Kegan (1994) describes a holding environment as a place that ‘provides both welcoming acknowledgements to exactly who a person is right now....and fosters the person’s psychological evolution’ (p.43). Furthermore, ‘the holding environment is an idea intrinsic to evolution.... there is not one holding environment but a succession of holding environments’ (Kegan, 1982, p.116). McCauley et al. (2006) describe the holding environment as the ‘totality of the surrounding and embedding social and interpersonal world of love, family, work and play’ (p. 636).

This study sought to gain insight into whether the individual leaders experienced the case study organisations as ‘holding environments’ in the way Kegan describes through understanding more about the capacity of the executive leaders sense-making to evolve or not into new LOC. Therefore, executive leaders were sought who were willing to be involved in a longitudinal study on their own sense-making of their leadership as conceptualised within Kegan’s (1982) forms of mind and the nature of that relationship to their perception of the leadership within their distinct organisations.

It is argued in general and in this study that the environmental changes expressed in the acronym VUCA require leadership constructs that focus on a capacity to build more complex and adaptive abilities (Avolio, 2009; Day et al., 2014; Petrie, 2014) and that newer theories of leadership and its development require a focus not just on ‘what’ is being developed but ‘how’ it is being developed (Kegan and Lahey, 2009; Day et al., 2014; Petrie, 2014).

The study adopts a social constructivist approach to leadership as a phenomenon that, as Osborn et al. (2002) propose, ‘may vary across time and across firms and is embedded in time, in a place and in the collective minds of the observers’ (p. 805) and within this context, as Probert and Turnbull James (2011) suggest, is ‘uniquely defined in each organisation’ (p. 140).

According to Cook-Greuter and Soulan (2007), ‘with the dawn of the 21st century, developmental thinking has finally reached a critical mass, and this mass has been a response to a ‘need for profound and rapid change’ (p. 182). The following section outlines the adult development theories, which provide the basis for the use of constructive development stage theories and their application to leadership.

2.4 Adult Development Theories

Since the 1960s, psychologists began working on adult development (Loevinger, 1966; Kohlberg, 1969; Graves, 1970), with a focus on how adults make meaning at multiple levels and ‘how each developmental stage is more comprehensive, more differentiated, and more effective in handling the complexities of life than its predecessors’ (Cook-Greuter and Soulan, 2007, p. 181).

Wilber (2000, p. 40) describes Graves’ (1970) developmental approach ‘as a profound and elegant system of human development, a system that subsequent research has refined and validated’ and further outlines Graves’ approach as follows:

Briefly, what I am proposing is that the psychology of the mature human being is an unfolding, emergent, oscillating spiralling process marked by the progressive subordination of older lower order behaviour systems to newer higher order systems as man’s existential problems change. Each successive stage, wave or level of existence is a state through which people pass on their way to other states of being. When the human is centralised in one state of existence – that is, when the self’s centre of gravity hovers around a given level of consciousness – he or she has a psychology that is particular to that state. His or her feelings, motivations, ethics and values, biochemistry, degree of neurological activation, learning system, belief systems, conception of mental health, ideas as to what mental illness is and how it should be treated, conceptions of and preferences for management, education, economics and political theory and practice are all appropriate to that state. (p. 40)

Becks and Cowan (1996), building on Graves’ (1970) work, developed their theory of Spiral Dynamics using colour coding to express different levels and movements in consciousness and applying the theory to wider social and cultural problems. Laloux (2014), in his research, conceptualises and applies stages of development to organisations drawing both on Becks and Cowan’s (1996) framework and Wilber’s (2000) quadrant framework to develop his own framework based on colour as metaphors for different paradigms of organisational models.

Loevinger’s research (1966) focuses on ego development, in which she found that the ego moves through ten stages of development. Wilber (2000, p. 49) described the ego as the proximate self, which is the central source of identity of the self and ‘which expands and deepens as the self-navigates from egocentric to sociocentric to world-centric or pre-conventional, conventional and post-conventional forms of identity’. Loevinger (1966) developed the Washington University Sentence Completion Test to measure adult stages

of ego development, and her work has been applied cross-culturally and received substantial support.

Cook-Greuter (1976) built on Loevinger's (1966) work and developed her model of self-development, which she applied to studies on leadership collaborating with Torbert (1994). According to Cook-Greuter and Soulan (2007), Torbert (1987), in his theory of action logics, was the first to bring this developmental approach into the field of organisational development, introducing a developmental approach to leadership and its stages to reflect the corporate environment in his action inquiry. According to Torbert and Rooke (2005), this developmental perspective offers an understanding of the capacity and growth potential of individuals, teams, and whole organisations. Torbert and Rooke (2005) and Eigel (2008) found in their research that a leader's stage of consciousness development and an organisation's effectiveness is significant.

While these theories all have a particular developmental lens or focus, Wilber (2000) described their distinctions metaphorically through the image of a mountain. He stated that while each line of development research has a different view of the mountain, they are all looking at the same mountain. The models all emerge from different egocentric levels to social-centric to world-centric views of the mountain and within that can operate at the pre-conventional, conventional, post-conventional and post-post-conventional levels of self (Wilber, 2000).

This may explain why an executive leader, or the leadership vision and mission of an organisation is espoused to be a concern for the wellbeing of all in society as its purpose as a business. However, possibly when the organisation comes under pressure, it reverts to a more instrumental or pre-conventional level of self-based on the self-interest of its organisation over and above the consequences for society. From a purely instrumental functionalist approach to leadership, this may seem legitimate. However, if one is seeking a more ethical approach that involves concern and care for all the stakeholders affected by the decision making, then a more post-conventional LOC can also be important.

This idea is echoed by Vincent et al. (2015), who argued that we need leaders who operate from post-conventional LOC in the world and our organisations more than ever.

According to Donovan (1997), to address and resolve the 21st century adaptive challenges we are facing in our organisations, communities, and at a global level, a fundamental mind shift in leadership is required and not just an alternative set of views about the world but an alternative way at arriving at such views. This way of thinking

must transcend any individual, group, or country (Hewlett, 2004), of which it is suggested that this way of thinking can also apply to meta systems of leadership in responding to the challenges of the Covid 19 pandemic era.

Furthermore, as suggested by Cook-Greuter (2004, p. 4), only those who have progressed to later stages of development regarding the structures directing the meaning-making of the mind can transcend the interest of any one group, or in this case, organisation. Contextually, LOC is an essential and critical variable in the holding environment of an organisation if one is to understand the nature of its decision making. Second, understanding its present LOC, it is argued in this study is an important first step in building forward into the new capacities of leadership expressed in higher LOC as mental complexity (Kegan and Lahey, 2009).

2.4.1 Kegan's Constructive Developmental Theory

Drago-Severson and Blum-DeStefano (2017) describe constructive developmental theory as a neo-Piagetian theory of human development that draws on more than 45 years of research about how people learn, grow, and develop (Piaget, 1952; Perry, 1970; Kohlberg, 1969, 1984; Kegan, 1982, 1994, 2000; Drago-Severson, 2004b, 2007, 2009, 2012, 2016; Baxter-Mangold, 2009; Kegan and Lahey, 2009). In this regard, they state the following:

Drawing from more than 45 years of research about how people learn, make sense of their experiences, and develop across the lifespan (e.g., Piaget, 1952; Kohlberg, 1969, 1984; Perry, 1970; Kegan, 1982, 1994, 2000; Basseches, 1984; Belinsky et al., 1997; Drago-Severson, 2004a, 2004b, 2009, 2012, 2016; Baxter-Magolda, 2009; Kegan and Lahey, 2009, 2016), constructive developmental theory posits that growth in adulthood occurs in qualitatively different stages – or ways of knowing. More specifically, constructive developmental theory identifies four qualitatively different ways of knowing more commonly in adulthood: instrumental, socialising, self-authoring, and self-transforming. (p .463)

According to this theory, adulthood can be a productive time of growth, rather than a monolithic life stage, if we are given appropriate developmental support and challenges.

A neo-Piagetian theory of adult development, Kegan's (1982, 1994, 2000) theory, builds off and extends the pathfinding work of Swiss psychologist Jean Piaget and illuminates how adults make meaning at a given point and over time and how our ways of knowing (i.e., developmental orientations) can grow and become more complex if we are offered appropriate developmental supports and challenges. (Drago-Severson, 2016, p. 66)

Kegan's (1982) theory is based on the evolutionary movements in consciousness through adult life in which development occurs through qualitatively different stages as the individual's sense-making system transforms. Specifically, Kegan's (1982) constructive developmental theory illuminates how our ways of knowing reflect qualitatively different orientations to the world concerning authority, responsibility, the ability to tolerate complexity and ambiguity, and perspective-taking on others, ourselves, our relationships, etc. (Garvey-Berger, 2012, p. 15). Garvey-Berger (2012, p. 16) stated in referencing these that:

The easiest way to understand them is as they relate to perspective-taking and in relationship to their own responsibility. As people develop, they become more able to understand and consider the perspectives of others, while at the same time becoming more aware of their own responsibility for their emotions and life events. As people develop, the content of their ideas may not change (e.g., someone might retain a belief he developed in his MBA programme that a good leader maintains open lines of communication with his direct reports), but the way they understand these ideas is likely to change (e.g., what 'open communication' means may be revised and expanded).

Wilber (2000, p. 42) describes Robert Kegan as 'everybody's favourite developmentalist (count me in)'.

Kegan's approach is especially important, in my view, because he so clearly elucidates the nature of embedding (identifying) and de-embedding (transcending), which marks each major wave of self-development. His books *The Evolving Self* (1982) and *In Over Our Heads* (1994), show why a developmental approach is so important (and why Kegan is everybody's favourite son)

In these texts, Kegan (1982, 1994) outlines a well-rounded picture of the 'self' as continuous 'meaning-making', as he calls it. This he understands as an intended solution to the dialectic of self and other, as it is embodied in the problematic alternatives of attachment and autonomy in ways which are played out over a lifelong series of Piagetian/Erikson-type stages. The self is pictured as a comprehensive and continuous attempt to achieve a sense of meaning as an evolving and revisable course of action. He states the following:

This book is about a way of seeing others, its secret devotion is to the dangerous recruitability such seeing brings on ... Seeing better increases our vulnerability to being recruited to the welfare of another ... a person's life depends ... on whether he ... moves someone in this way. Our survival and development depend upon our capacity to recruit the invested attention of others to us. (Kegan, 1982, pp. 16–17)

Kegan's (1982) theory of personhood focuses on being, that is, who or what a human is rather than what they do. He described how language, more particularly Western language, reflects static polarity thinking and its constraint on the communication of the nature of human beings and a constraint on its comprehension within the concept of constructive adult development theory itself. In this context, it is worth noting that Loevinger's (1976) ego development is measured using the Washington University Sentence Completion Test (WUSCT), which is widely used in the field of personality research. However, the criticism of WUSCT by Reams (2014) is based precisely on the test's dependency on language as the only measure to assess an individual's meaning-making and the fact that it is entirely dependent on written responses that do not allow for clarification of meaning-making.

In contrast, Kegan's SOI, which is the measure of his theory developed by Lahey et al. (1988), does allow for this inquiry of language and its sense-making. According to Reams (2014), the SOI engages people in a conversation in which they are encouraged to reveal the structure of their meaning-making by explaining their responses to specific probes and therefore, it does not rely solely on written responses. Further, Helsing and Howell (2014, p. 3) stated that Kegan's (1982) theory is 'unique in drawing a clear distinction between the deep underlying structure of an adult's meaning system rather than the contents of that system'. Furthermore, Berger and Atkins (2009) proposed that the SOI method for assessing the constructive developmental stage is intensive and arduous to learn and time-consuming to score, which suggests that it allows for more depth in interpreting sense-making within its conceptual framework.

One of the implicit criticisms of the hierarchical nature of the constructive developmental description of the forms of mind of adult development theories in general and, as outlined in Kegan's (1982) theory, is the notion of having to reach something higher. However, Berger (2003) argued that while Kegan's theory is hierarchical, the numbers used are simply a tool that reflects the journey that people are on, and there is no stage that is inherently better than any other stage.

According to Wilber (2000), the developmental process is analogous to atoms, molecules and cells all emerging into whole systems, which are not regarded as hierarchical but rather as completing themselves as both parts and wholes of an overall system. Similarly, adult development is a process of transformation within which there is the capacity to perceive the self and the other as both autonomous and connected inside a whole system that underlies the gradual merging of the subject-object into ones beingness.

The constructive developmental approach is implicitly a marriage of ontology and epistemology as it seeks to understand our way of knowing, how we construct that way of knowing and the different levels of that knowing, which suggest growth into a sense of one's ontological sense of self and a more profound connection to our human beingness. It is argued in this study that the subject-object nature of the theory sits well within the hermeneutic circle, given that it is concerned with the dynamic relationship between the part and the whole at many levels and works in a non-linear style of thinking and reflecting.

McCauley et al. (2006) validated Kegan's research by examining the application of constructive developmental theory to leadership literature and suggested that Kegan's theory could be used as a means of understanding leader development. However, they also acknowledged that 'no research examines the features of these interventions that support development or whether using these designs induces increased developmental movement' (p. 642). Day et al. (2014) also state that Kegan's (1982, 1994) theory can be used to understand what is developed as a function of leadership development in a given context.

Hesling and Howell (2014) outlined how Kegan (1982), along with other theorists (Loevinger, 1976; Cook-Greuter, 1990), considers the self to be an integrating, unifying system that incorporates the various domains of human experience into a framework, thus implying that there is coherence across these dimensions. In other words, as we interact with our environment, we make sense of our experience, and through this interaction and negotiation, our meaning systems may gradually evolve and become more complex (Hesling and Howell, 2014).

The authors further suggested that the interconnection between the three lines of development in Kegan's (1982) theory – cognitive, interpersonal, and intrapersonal – is key to his theory, beneficial for exploring leadership as a psychological developmental process within the self. Berger and Atkins (2009) note that the use of Kegan's theory offers both a description of the different stages of development and the processes through which movement occurs between the stages. They further noted that the SOI, the research method used to measure subject-object relations, tends to be an enjoyable experience for participants, leading to important insights. Accordingly, this chapter now outlines Kegan's (1982) subject-object theory.

2.4.2 Subject–Object Theory

According to Kegan (1982), the epistemology of the meaning-making of reality is reflected in the dynamic nature between the two concepts of subject-object and how the self transforms through the subject-object relationship of the self. Kegan (1982, p. 77) states:

Subject-object relations emerge out of a lifelong process of development: a succession of qualitative differentiations of the self from the world with a qualitatively more extensive object with which to be in relation created each time; a natural history of qualitatively better guarantees to the world of its distinctness; successive triumphs of “relationship to” rather than “embeddedness in”.

Garvey-Berger (2012, p. 18) also describe the subject-object relationship as

The distinction between subject (that which you cannot yet see because you are fused with it) and object (that which you can see and make decisions about because you have gained more distance from it). As elements of understanding move from subject (hidden) to object (seen), our worldview becomes more complex and constructive developmental theorists would say we have developed.

This movement through different LOC is understood as the transformational process within this theory. What one identifies with as subject and what one considers to be object within the individual self reflects both the present structure managing the meaning-making of the mind and the potential for movement into new LOC within the self as a mirror of that meaning-making at a given moment in time. The subject-object relationship, then, according to Kegan (1982), is a sense-making and reality making construction within the self as it interacts with and through the other.

In this regard, the other is those aspects of the subject–object within the interior self (Wilber, 2000) and the subject-object dynamic outside the self as we interact with other people, that is, the exterior self (Wilber, 2000). This dynamic and dynamic relationship of the ebbs and flows of these relationships provides a space for a reconstituted sense of an overall self (Wilber, 2000) to grow into a new stage of consciousness.

Strang and Kuhnert (2009, p. 2) describe the subject as how the individual understands, organises, and defines their experience and is their meaning-making lens into and on the world. It is the process of moving what is subject to object that one gains the ability to take perspectives on how one was organising meaning when subject to it.

According to Strang and Kuhnert (2009, p.2), this is described by Kuhnert and Russell (1990) as a process where ‘individuals are able to see and reflect upon the way that they previously organised their experience, rather than being defined by it’.

Berger and Atkins (2009) state that the most profound example of a move from subject to object is when entire meaning-making systems move from what was once an unself-conscious lens through which the person viewed the world to something that can be seen and reflected upon. According to Kegan (1982), this subject-object dialectic within the self reflects the dynamic nature of the different structures operating as the centre of gravity of an individual’s meaning-making at a given moment in time. Kegan (1982, p. 116) states:

There is never “just an individual”; the very word refers only to that side of the person that is individuated, the side of differentiation. There is, always as well the side that is embedded; the *person* is more than an individual. “Individual” names a current state of evolution, a stage, a maintained balance or defended differentiation; “person” refers to the fundamental motion of evolution itself and is as much about that side of the self embedded in the life-surround as that which is individuated from it. The person is an “individual” *and* an “embeddual.”

The subject-object dialectic between the simultaneously differentiated ‘individual’ and the ‘person’ as a reflection of the movement between ‘embeddedness’ in the life-surround mirrors the underlying capacity for movement into more expansive structures with the meaning-making of the mind. In this sense, Kegan (1982) emphasised developmental movement itself rather than simply focusing on the levels or orders of development as outcomes in themselves.

Constructive developmental psychology reconceives the whole question of the relationship between the individual and the social by reminding that the distinction is not absolute, that development is intrinsically about the continual settling and resettling of this very distinction’ (Kegan, 1982, p. 115)

Bugenhagen and Barbuto (2012) suggested that capturing the transitions between constructive developmental stages is important as development occurs during periods of stability and change, which are measured via the change in subject-object relations. Barbuto and Millard (2012, p. 238) suggested that ‘leaders may find themselves at some point in transition far more than within one of the orders’, while Kegan (1994) saw the transition points as a continuum until fully embedded within a new order.

It is Kegan's (1982) position that personal, and self-development as conceptualised within the movement of the subject-object relationship is what constitutes his construct of leadership as developmental, and this development is echoed in the epistemology of the structure running the meaning-making of the mind. Furthermore, Drago-Severson and Blum-DeStefano (2016, p. 463) suggested that understanding the developmental trajectory of adulthood and anticipating the developmental diversity that will occur in nearly any team, group, or organisation (Kegan et al.2001) can help us better differentiate the supports and challenges we offer to each other as we work to manage complexity, examine assumptions, and relate across lines of difference.

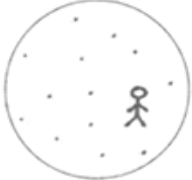
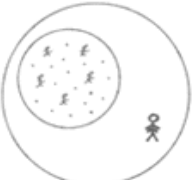
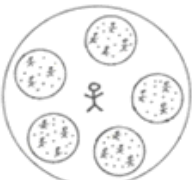
The forms of mind at each new LOC are temporary forms of psychological meaning-making with a named distinction between subject and object. In *The Evolving Self*, Kegan (1982, p. 108) described these periods in any of these orders of mind as 'evolutionary truces' and what creates a stage of development. Each new level takes up the previous level, enabling it to move in a more complex model of mental complexity. It is this dynamic nature of the self with its movements over time towards differentiation and growth on the one hand and autonomy and connection on the other and the tensions between these dynamics as one traverses the world of adult life that Kegan (1982) expressed in the five orders of consciousness.

The five stages or levels of consciousness represented in Kegan's constructive developmental model comprise impulsive, instrumental, socialising, self-authoring, and self-transforming forms of mind. These different stages influence the meaning-making that impacts the behaviour, decision making, and sense-making of leadership.

As Kegan (1982, 1994) identified, it takes time and maturity that comes with age and real work to develop these capacities. Kegan and Lahey (2009) argued that what distinguishes an individual's leadership from others in the years ahead is that they will have grown into their future possibilities. According to Caldwell and Claxton (2010, p. 6), 'One of the assumptions of stage theory is that meaning-making in more evolved stages becomes less rigid, simplistic and dogmatic and more flexible, open, complex, empathic and tolerant of difference'.

Figure 1 shows Kegan's theory of the five orders or stages of mind, which mirror an individual's capacity to assume the position of 'the other', that is, to view phenomena from another's perspective. This is followed by (Table 2.1 – 2.4) a more detailed description of how these orders of mind can be understood regarding each stage's

behaviour and how these forms of mind can be applied and understood regarding leadership.

Developmental Stage/ Order of Mind (typical ages)	What can be seen as <i>object</i> (the content of one's knowing)	What one is <i>subject</i> to (the structure of one's knowing)	Underlying Structure of Meaning-Making
1st Order: Impulsive Mind (~2-6 years-old)	one's reflexes	one's impulses, perceptions	Single Point 
2nd Order: Instrumental Mind (~6 years-old through adolescence)	one's impulses, perceptions	one's needs, interests, desires	Categories 
3rd Order: Socialized Mind (post-adolescence)	one's needs, interests, desires	interpersonal relationships, mutuality	Across Categories 
4th Order: Self-Authoring Mind (variable, if achieved)	interpersonal relationships, mutuality	self-authorship, identity, ideology	Systemic 
5th Order: Self-Transforming Mind (typically > ~40, if achieved)	self-authorship, identity, ideology	the dialectic between ideologies	System of Systems 

Adapted from Robert Kegan, *In Over Our Heads: the Mental Demands of Modern Life* (Cambridge: Harvard University Press, 1994). pp. 314-315 by Peter W. Pruvn. <http://developmentalobserver.blog.com>.

Figure 1: Kegan's Five Orders of Mind, adapted from Kegan (1994, p. 314–315)

Stage	Description
<i>1st Order Impulsive Mind</i>	- Similar to Torbert's (2004) action logics' impulsive stage and Loevinger's (1976) ego development stage of the pre-social. - From up to 6 or 7 years of age, only self exists as children are cognitively capable of perceiving only their own point of view (Waddock, 2006, p. 86). - Actions result from impulses or fantasy (magic), and they do not significantly differentiate between the roles of various individuals. - 'The child has differentiated him or herself from reflexes but is unable to differentiate between his or her perceptions and reality' (Phipps, 2010, p. 154).
<i>2nd Order Instrumental Mind</i>	- Mirrored in Torbert's (2004) action logics' opportunity stage and Loevinger's (1976) impulsive and self-protective stages of mind. - From the ages of 6 to 15 years, individuals tend to operate at the concrete stage and can recognise that others exist externally. They can begin to make cause and effect inferences and typically engage in a tit-for-tat kind of reasoning or reciprocity (Waddock, 2006). - They do not incorporate the perspectives of others into their viewpoint but rather define others, friends, colleagues, and strangers in terms of how each person can assist them. - This form of mind is described by Garvey Berger (2012) as one in which while an individual may be curious about the perspectives of others, they cannot yet make sense of those perspectives by themselves and cannot think about their own inner workings either. - People in this order as described by Barbuto and Millard (2012) follow rules only in their own best interests and break them if it will help to meet their personal needs. - The individual is self-centred at this stage and 'cannot take the perspective of another and is driven only by his or her own needs' (Turknett and Turknett, 2005, p. 1).

Table 2.1: Summary of Kegan's (1982) 1st and 2nd Order forms of mind

Stage	Description	Leadership
<i>3rd Order Socialised Mind</i>	This level in Kegan's model is mirrored in Torbert's (2004) action logics' diplomat and expert stage and Loevinger's (1976) conformist and self-aware stage of mind. The stages as stated describe a journey that individuals are on throughout their lifetimes; however, the majority of (58%) the population measured to date are in this stage and have not proceeded as far as the self-authoring stage (Kegan and Lahey, 2009). Waddock (2006, p. 88) stated that in this order of mind, individuals become conscious of the roles they take, and it is the beginning of the interpersonal stage. They can modify or defer their own expectations to fulfil the expectations of other individuals. Interpersonal conflict in this way of knowing is experienced as a threat, resulting in avoiding conflict because it has presented a risk to the loyalty of the institution and 'is experienced as a threat to the coherence of their very selves' (Drago-Severson, 2008, p. 45). For example, events that signify the violation of social expectations, such as an irate manager, are particularly likely to be conceptualised as a threat. Whenever they feel that they have breached these expectations, they anticipate that one of their mutual relationships may dissolve. Berger (2003) noted that in this form of mind, adults have internalised one or more systems of meaning (e.g., their family's values, a political or national ideology, a professional or organisational culture). Kegan and Lahey (1984) and Ignelzi (2000) specified that at this level, the sense of self is fused with others' expectations; however, people are limited in their ability to both reflect on a shared reality and how they were indeed influenced by it in the first place.	Barbuto and Millard (2012, p. 238) argued that the focus on the 'other' enables leadership to emerge at this stage of mind and that leaders, while they can co-construct their sense of meaning with others, are not differentiated from them. According to Hesling and Howell (2014, p. 188), socialised leaders derive their sense of authority and knowledge from external sources to which they measure their success. They may be best suited to leadership roles in which their responsibilities are 'fundamentally about faithfully representing the prevailing views of a constituency'. Hesling and Howell (2014) also state that socialised leaders cannot exercise some capacities that may be necessary for many complex leadership situations. They cannot reflect upon or critique the assessments, values, or group positions with which they are identified. When authority is located completely externally, a socialised leader locates responsibility externally, and without an independent source of authority, they are unable to make judgements about their contributions to a problem or solution (Hesling and Howell, 2014, p. 188).

Table 2.2: Summary of Kegan's (1982) 3rd Order form of mind as applied to Leadership.in Organisations

Stage	Description	Leadership
4 th Order <i>Self-Authored Mind</i>	This level in Kegan’s model is mirrored in. Torbert’s (2004) action logics’ achiever and individualist stages and Loevinger’s (1976) individualistic and conscientious stages. Research indicates that only 20–30% of adults reach Stage 4 (Ericksen, 2006; Kegan and Lahey, 2009; Petrie, 2014). The self-authoring way of knowing means that an individual can uphold their belief system and take stands and create and regulate boundaries on behalf of their internal values (Kegan and Lahey, 2009). Yet, when contexts change, some self-authoring minds struggle with transforming their deeply held personal frames of reference or mindsets to make sense of new experiences. In the fourth order, Barbuto and Millard (2012) outlined how people are often self-motivated and self-directed in their decision-making and can be empathetic without being submissive to external authorities. According to Berger (2003), adults in the fourth stage of development have achieved all that those at the third stage of development have achieved, but also, they have created a self that is the author of its connections to its own ideologies.	Hesling and Howell (2014, p. 189) state that the self-authoring leader can think critically and thereby examine and evaluate the opinions and expectations of others. Further, self-authoring capacities are necessary for leaders to develop respectful but bounded relationships in which they can empathise with, but not become captive of the emotions of others and can make tough decisions that can involve disappointing others on behalf of a larger vision or purpose. McCauley et al. (2006, p. 647) argue that self-authoring leaders are more likely ‘to enact leadership in ways deemed effective in most modern organisations.’ Hesling and Howell (2014) stated that a study by Eigel (1998) found that leaders’ developmental capacities correlated with their abilities to challenge existing processes, inspire a shared vision, manage conflict, solve problems, delegate, empower and build relationships. Barbuto and Millard (2012, p. 238) suggested that as leaders’ transition from the third to fourth order, they ‘begin to develop a sense of authorship as separate from institutional boundaries.

Table 2:3 Summary Kegan’s (1982) 4th Order of Mind as applied to Leadership.

Stage	Description	Leadership
<i>5th Order Self-Authored Mind</i>	This level of mind is mirrored in Torbert's (2004) action logics' stage as a combination of strategist, alchemist, and ironist, while in Loevinger's (1976) ego developmental stage this level is described as autonomous and integrated, respectively. Drago-Severson (2017) states that in 1994, based on a meta-analysis, Kegan estimated that only 3% to 5% of adults in the United States were making meaning with a self-transforming mind or way of knowing. Estimates almost 20 years later suggest 11% of U.S. adults were making meaning with more of a self-transforming capacity which, according to Kegan and Lahey (2009, 2016) and Drago-Severson (2004b, 2009, 2012), may have increased because of the more complex challenges faced in today's world and which Drago-Severson (2016) suggests are 'a call for more and greater internal capacities to meet needs such as social justice and equity' (p. 464). People in this form of mind can accommodate contradictions and oppositions because they recognise multiple systems exist. According to Bochman and Kroth (2010), they can evaluate their own assumptions, reframing their perspectives as needed when data indicates that their existing mindset is inadequate for the changing circumstances and can also handle adaptive challenges and higher levels of complexity.	According to Kegan (2013), the complexities of modern life require more people to reach this stage if they are to cope effectively with the competing demands imposed on them, and more leaders and leadership itself need to operate from a self-transformative mind. Barbuto and Millaird (2012) suggest that adults in this stage realise the limits of their own system and can tolerate emotional conflict, while Kegan (1994) argues that leaders at this stage return to a sense of connectedness through welcoming paradox and contradictions as part of their developmental process. While the form of mind tends to grow over time, such growth is only important to the demands made upon it. Garvey Berger (2011) suggests that it is the interaction between the demands made on the leader and the leader's capacity for self-complexity that matters most. According to Garvey Berger (2011, p. 48), possessing the capacity to cope with complexity does not necessarily mean that a leader is a careful observer and has good interpersonal skills but rather that the leader has the capacity to perceive more nuance and manage paradox and ambiguity with a capacity to be agile and responsive.

Table 2.4 Summary Kegan's (1982) 5th Order of Mind as applied to Leadership

According to Phipps (2010, p. 156), it was Kegan who first suggested the idea of a leader's stage of constructive development and connection to leadership style 'shortly after introducing constructive development theory (Kegan and Lahey, 1984)'. Phipps (2010) outlines how Kuhnert and Lewis (1987) were also responsible for seeing a possible connection between the leader's developmental stage and the chosen leadership style. She states:

Reasoning that a leader's choice between transactional and transformational leadership would be constrained by the leader's stage of constructive development, they argued that a leader at Stage 2 would be developmentally incapable of engaging in transformational leadership practices by virtue of their method of making meaning (Kuhnert and Lewis, 1987). While instructive, their analysis was limited to the difference between transactional and transformational leadership. (2010, p. 156)

Kuhnert and Lewis (1987) applied four of Kegan's orders of consciousness to levels and leadership, which Eigel and Kuhnert (2005) further conceptualised regarding leadership capacity, which they described as the leadership development level defined as the 'measurable capacity to understand ourselves, others and our situations' outlined in the following table (Strange and Kuhnert, 2009, p. 2).

CD Stage/Leader Development Level (LDL)	Subject (Organising process)	Object (Content of experience)
Stage 2 (<i>Instrumental mind</i>)	Personal goals and agenda	Immediate needs and feelings
Stage 3 (<i>Socialised stage</i>)	Interpersonal connections	Personal goals and agenda
Stage 4 (<i>Self-authored mind</i>)	Personal standards and value system	Interpersonal connections
Stage 5 (<i>Self-transformational mind</i>)	Openness and paradox	Personal standards and value system

Table 2.5 CD Stage/Leader Development level adapted from Strange and Kuhnert (2009, p. 2)

According to Strange and Kuhnert (2009), this framework provides a useful way for understanding the ways leaders construct meaning for both themselves and others, with an expansion throughout this developmental process of 'people's ability to reflect on and understand their personal and interpersonal worlds' (2009, p. 2). Further, Strang and Kuhnert (2009) identified how previous research 'suggests that a person's level of

development does impact leader performance as evidenced by personal and organisational outcomes' (p. 2). The authors proceed to reference studies by Rooke and Torbert (1998, p. 2), which found 'that the ego development stage of a company's Chief Executive Officer and his/her senior advisers is a critical variable in successful organisational transformation'.

Nonetheless, McCauley et al. (2006, p. 648) state that there has been limited research examining 'the dynamics of developmental movements in leaders'. Moreover, few studies address the impact of context variables, such as the holding environment, on the developmental order of mind and leadership in organisations. Laloux (2014), however, focuses on the context and environment of the organisation through his application of stages of development as an evolution in consciousness to his research on organisational models and the leadership within them that have emerged historically, drawing on Wilber's (2000) integral theory in which he situated his framework.

2.5 Laloux's Organisational Model

Wilber (2000) synthesised the work of 24 different developmental researchers into his quadrant integral theory. According to Laloux (2014), Wilber (2000) discovered a profound truth about the nature of reality, that is, that any phenomenon has four facets that can be approached from four sides. To understand this phenomenon, we should look at it both objectively from the outside (the tangible, measurable exterior dimension) and we should also sense the dimension that exists inside (the intangible interior dimension of thoughts, feelings, and sensations) (Laloux, 2014, p. 226).

Wilber's (2000) integral theory focuses on an individual interior level of self (upper left quadrant) and interior collective (bottom left quadrant) on the one hand and an individual exterior level of self (upper right quadrant) and exterior collective (bottom right quadrant) on the other. It is a four-by-four conceptual Holon framework for capturing the essential interior and exterior dimensions of the subject-object self within these theories.

Holons are whole and parts because things are simultaneously something whole in themselves and part of something larger than themselves. Individuals are whole in themselves and parts of larger systems, as Senge (1990) outlined in his systems theory, in which he argued for the need to develop more complex forms of thinking in his work on the learning organisation.

Regarding holons, corporate organisations are whole entities comprising many parts, and they are simultaneously parts of the societies in which they operate. Wilber’s holon framework adapted from *Integral Psychology* (Wilber, 2000, p. 120) is outlined to contextualise Laloux’s (2014) models of organisations (Figure 2).

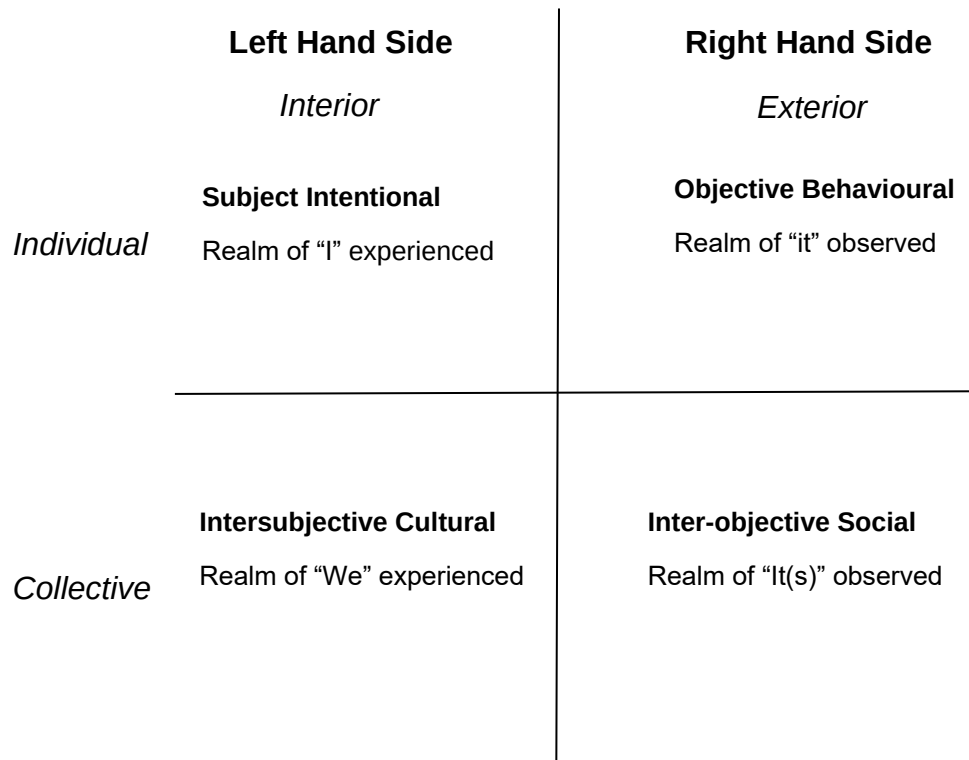


Figure 2. Wilber’s Holons, adapted from Wilber (2000, p. 120)

Wilber’s (2000) framework has been adapted by Laloux (2014) and applied to his research on organisational models with the interior perspective involving individual people’s beliefs and mindsets (upper left quadrant) and the exterior (upper right quadrant) involving people’s collective behaviour expressing collective centres of gravity as meaning-making at given moments in time. Similarly, the lower left quadrant is about the individual and their intersubjective expression in organisational culture, and the lower right quadrant is about their collective expression in the organisation’s systems, structures, processes, and practices.

Laloux (2014, p. 227) further outlined how we must not look at each level in isolation but rather how development occurs through the reciprocal relationship of the person and the environment. He argued that leaders establish structures, processes and systems that make sense to them and relate to their world views. In this context, a change in any dimension

will ripple through the other dimensions. Therefore, it is posited that measuring which structure is directing the meaning-making of the mind is important regarding understanding leadership at the individual level, which, in turn, is evidenced throughout the organisation's culture.

According to Laloux (2014), some modern organisations demonstrate new emergent LOC by reflecting what developmental psychologists describe as second-tier consciousness in their organisation model. For developmental psychologists, second-tier consciousness is understood as higher levels of consciousness emerging as another evolutionary movement in which pioneering leaders ask what the highest purpose for the organisation is to ensure the well-being of all citizens for all time.

Laloux (2014) referred to this second-tier of consciousness as evolutionary Teal in his models of the stages of organisational consciousness. As Graves (1974 cited in Laloux, 2014, p.430) suggested, the distinction from earlier models regarding consciousness is that this type of consciousness and the variations of organisations within it has incrementally evolved to no longer believe that their world view is the only right one.

Laloux (2014) emphasised that not everyone moves or grows at the same pace and argued that within organisations, no one could force a stage of development in consciousness, as each individual works with and receives this process in their own way and time. This is echoed in the work of Kegan and Lahey (2009). They suggested that the issue is that organisations adapt system-wide approaches and do not consider that everyone may both perceive and interpret the change as a function of where they are positioned in the organisation regarding the sense of place, role identity and power dependence issues.

In this context, Kegan and Lahey (2009) argued that one needs to consider the fundamental operating system driving the organisation inside the structures directing the meaning-making of the mind as the key developmental focus of leadership needed for organisational complexities. Further, Laloux (2014) suggested that it is possible to create organisational environments that allow space for and are conducive to growing into the later stages of consciousness echoed in their leadership constructs, systems, and overall processes. The chapter continues with an outline of Laloux's (2014) framework of organisations as stages of development in consciousness.

2.5. 1 Laloux's Conceptualisation of Organisational Paradigms

Laloux (2014) uses colour codes as metaphors for the different stages of development of corporate organisations within the management theory of the last 50 years, with each reflecting different worldviews, beliefs and corresponding cultures and systems. These codes are Red, Amber, Orange and Green, and the central idea is that each stage allows for more of a person's potential and talent to emerge, but these are still limited by the politics, silos, and individualism at the heart of the paradigm on which the corporate organisation is built. It is the emergence of the Teal organisation as a second-tier stage of consciousness that moves beyond this limited construct in Laloux's (2014) research and conceptualisation. In second-tier consciousness, or evolutionary Teal as Laloux (2014) conceptualises it, there is a move to more complex and refined ways of dealing with the world, such as Kegan's fifth stage of the self-transformative form of mind.

Laloux (2014, p. 50) describes the Teal organisation as follows:

Taming the ego could have deep repercussions on how we structure and run organisations. Many of the corporate ills today can be traced to behaviours driven by fearful egos: politics, bureaucratic rules and processes, endless meetings, analysis paralysis, information hoarding and secrecy, wishful thinking, ignoring problems away, lack of authenticity, silos and infighting, decision making concentrated at the top of organisations and so forth. In teal organisations, less driven by ego, we can hope to put some of these corporate ills behind us. More generally, the relationship to power can be transformed in quite fundamental ways. When trust replaces fear, will a hierarchical pyramid still provide the best structure? Will we need all the rules and policies, detailed budgets, targets, and roadmaps that give leaders today a sense of control? Perhaps there are much simpler ways to run organisations when the fears of the ego are out of the way. As people in Teal are busy exploring the calling in their lives, they are likely to affiliate only with organisations that have a clear and noble purpose of their own. We can expect that purpose, more than profitability, growth, or market share, will be the guiding principle for organisational decision making.

The distinctions of these organisational models can be best understood in their approach to decision-making, as outlined in tables 2.6 and 2.7.

Stages of Laloux's (2014) Paradigms of Organisations	Decision Making in each Stage
<i>Red-Impulsive</i>	- In this model of organisation, as a stage of development, a good decision is the one that gets me (organisation) what I want. The guiding metaphor Laloux (2014) used for this model of organisation is of the wolf pack, with its key advance historically being a commanding authority and a division of labour. - In a red organisation, there is a constant exercise of power to keep the troops in line, with fear as the glue of the organisation. A red organisation is highly reactive and thrives in chaotic situations. Examples of organisations within this paradigm are tribal militias, the Mafia and street gangs.
<i>Conformist-Amber</i>	- In this model, decisions are based on conformity with the social norms and decisions which one's family, religion or social class considers legitimate. - The guiding metaphor that Laloux (2014) used for this type of organisation is an army in which highly formal roles exist within a hierarchical pyramid. The key advance regarding the model of the organisation is the creation of formal roles (stable and scalable hierarchies with a focus on processes to achieve long-term prospects). - There is a top-down command and control, with stability valued above all through rigorous processes and the future as a repetition of the past. Examples in this type of model are the Catholic Church, the military, most government agencies, and public-school systems.

Table 2.6 Laloux (2014) Organisational paradigms (Red Impulsive and Conformist Amber) as applied to Decision Making

Stages of Laloux's (2014) Paradigms of Organisations	Decision Making in each Stage
<i>Achievement Orange</i>	- In this model, decision-making is based on effectiveness and success as the yardsticks by which decisions are made. The metaphor guiding this type of organisation is the machine and the central premise is to defeat the competition, to achieve profit and growth, with innovation as the key to remaining ahead. - Management is by objectives with command and control of the 'what' and freedom in the 'how'. Its key advances are innovation, accountability, and meritocracy, and it is the model found in multinational companies.
<i>Pluralist-Green</i>	- In this model, decision making is based on the criteria of belonging and harmony, with its guiding metaphor being the family. - The focus within a classic hierarchical pyramid is on culture and empowerment to achieve extraordinary employee motivation, and the key advances of this model of organisation are empowerment, a value-driven culture, and a stakeholder model.
<i>Evolutionary -Teal</i>	- In this model, there is a shift from external to internal yardsticks in decision making and it is concerned with the question of inner rightness as in, does this decision seem right? Am I true to myself? Am I of service to the world? - This is evolving and emerging as an organisational model and yet there is no guiding metaphor or advances other than the current movement in consciousness, which is in the process of creating new constructs of organisational models and their requisite constructs of leadership.

Table 2.7 Laloux (2014) Organisational paradigms (Achievement Orange, Pluralist-Green, Evolutionary -Teal) as applied to Decision Making

Laloux (2014) stated that most organisations today are operating from Conformist-Amber or Achievement-Orange. According to Laloux (2014), the first four metaphors of the different types of organisational models that have emerged over time can all co-exist as types of organisational models simultaneously in our present society. These first four metaphors of organisational models can be understood as being held inside a consciousness of meaning-making underwritten by measures that provide the ego identity with ‘recognition, success, wealth and belonging, all viewed as pleasant experiences’ (Laloux, 2014, p. 44). In contrast, the order is reversed for Teal organisations. Laloux states that ‘we do not pursue recognition, success, wealth and belonging to live a good life. We pursue a life well lived, and the consequence might just be recognition, success, wealth and love’ (2014, p. 300).

Laloux (2014, p. 41) also stated that the stage from which an organisation operates is the ‘stage through which its leadership tends to look at the world’ and, moreover, that this means that an organisation cannot ‘evolve beyond its leadership’s stage of development’. He provides an example to illustrate the push and pull at the different stages of development of the practice of providing shared values and mission statements. In Orange organisations, the yardstick for decisions is success and because the practice of defining a set of shared values has become popular currency, ‘leaders in Orange organisations increasingly feel obliged to have a task force come up with some values and a mission statement’ (Laloux, 2014, p. 46). However, Laloux (2014, p. 44) observes:

Looking to values and mission statements only makes sense in the Pluralistic-Green Paradigm, and while in Orange Organisations, leadership might pay lip service to the values but when the rubber hits the road, and the leaders must choose between profit and values, they will predictably go for the former. They cannot uphold a practice and culture (in this case, a value-driven culture) that stems from a later stage of development.

These different levels of organisational consciousness are made visible, according to Laloux (2014), through exploring the expressions of the culture, processes and systems of the organisation as perceived by the people within them. In this study, these expressions are explored through the executive leaders’ perceptions of their own organisation’s leadership as an LOC within Kegan’s (1982, 1994) five stages. These perceptions are accessed through the data from two different sets of interviews, which are conceptualised, conducted, and transcribed within the principles of the subject-object protocols.

The study used two different sets of tools for the two interviews. The first is the repertory grid adapted and created by the author of this study into a perceptual matrix, drawing on the SOI principles. The second is the SOI, the formal assessment measure of Kegan's (1982) subject-object theory. The SOI measure is outlined in detail in the research methods chapter.

The repertory grid (Kelly, 1955) is the methodological tool of personal construct theory (Fransella, Bell and Bannister, 2004) which was adapted for this study to access the perceptual meaning-making within the individual executives' own leadership underwriting the structure of the leadership of the holding environment within their distinct organisations. The study used the repertory grid as a heuristic tool for designing the perceptual matrix and adapting the SOI principles within it for the first set of interviews. These interviews sought the sense-making of the individual executive leaders LOC of their perceptions of their organisations' leadership and their own individual sense-making within this holding environment simultaneously within the matrix. This set of repertory grid interviews contrasted with the SOI scores. The narrative analysis within these scores provided a rich depth of analysis for the sense-making of the executives' leadership as a function of developmental consciousness (Kegan, 1982) and their different organisations inside six case studies. The chapter proceeds to outline (Kelly's 1955) personal construct theory as outlined in (Bannister and Fransella, 1986; Fransella, 2005), which is the conceptual framework that underwrites the repertory grid as designed for use in this study and which is outlined in detail in the research chapter.

2.6. Personal Construct Theory

Kelly's (1955) personal construct theory is a constructivist theory and approach for understanding perception and behaviour, which proposes that we each individually create a personal construct system that we innately use to understand our environment (Cridland et al. 2014). According to Butt and Warren (2016, p.48) Kelly's theory bridged the world of both pragmatism and constructivism in that he proposed that 'the world we perceive is both found and made'. In this context, Kelly's personal construct psychology understood the person as socially constructed but equally once constructed, 'the person is, to some extent, a centre for choice and agency'. (Butt and Warren, 2016, p.47).

In this context Kelly's focus is on how individuals differ in their meaning-making of their constructs understood as a mechanism of discrimination a person can make about 'part of the way you stand towards the world as a complete person' (Bannister and Fransella, 1986, p. 21). Furthermore, the authors state:

In personal construct psychology we are reacting to our environment *as we see it*, or, to put the same thing the other way around, we are working out our own nature in terms of a real external world. Our purposes and our issues are our own, but they can only be furthered to the degree and in the way that we understand external reality (Bannister and Fransella 1986, p.8)

Kelly (1955) believed that all individuals operate a system of ideas, and hence, attention needs to be given 'to exploring and analysing the system of interrelated interpretations of the world used by the individuals to bring coherence to their view' (Bannister and Mair, 1968, p. 5).

The author of this study suggests that Kelly's (1955) personal construct theory is similar to Kegan's, as it is based on the individual capacity to construe and reconstrue the meaning-making of an event or experience. In Kegan's (1982) theory, this capacity occurs regarding movement in LOC because of an optimal conflict and associated disequilibrium, creating the conditions for new meaning-making expressed in his theory as a new LOC. In the context of this study, this is expressed as a new level of mental complexity regarding the meaning-making of leadership.

In Kelly's theory (1955), the focus is on a self-emergent from interaction similar in this regard to Mead's (1934) concept of self. In Kelly's theory, the individual is actively involved in anticipating events within their individual perception as a function of the presented stimulus and internal hypotheses, expectations, and stored knowledge (Bannister and Mair, 1968).

In the case of this study, this stored knowledge may be what is inside the perceptual filters within executive leaders mindsets where the meaning-making of leadership is stored inside different metaphorical rooms of a particular LOC as conceptualised by Kegan (1982). As Kegan argued, the LOC is the deciding factor in understanding a person's meaning-making and is often not understood as such. Kegan (1994) suggested that people may be 'in over their heads' regarding the limits and capacities of their sense-making of a particular phenomenon, relationship, decision making or constructs of leadership.

Similarly, Kelly's (1955) personal construct theory is 'an individual construct system that sets the limits beyond that which is impossible for a person to perceive. Consequently, constructs are controls on a person's outlook and ultimately controls on their behaviour' (Bannister and Mair, 1968 p.25).

Kelly (1955) observed both a cognitive and emotional dimension of knowledge, eschewing any dualism of body and mind with an essentially holistic focus that perceived humans as integral to the universe. According to Kelly (1955), humans are always in movement and those motions are an inevitable aspect of human functioning with constructs also potentially in a constant state of motion and, therefore, open to change. In response to critiques that Kelly's theory was not developmental, Franscella (2005) suggested that this is an implicit aspect of Kelly's theory in its very construction as a theory of meaning-making of the whole self. According to Butt (2008), Kelly's (1955) phenomenological approach to self perceives the self as an event concerning other events, with the self-discussed as emergent and relational in that it emerges through dialogue with other events, particularly persons.

This idea of the self as relational and emergent in Kelly's (1955) personal construct theory makes it a useful theoretical framework to underwrite the development of a perceptual matrix based on a repertory grid as a method for a set of semi-structured interviews in this study. The repertory grid is the methodology devised by Kelly to investigate his theory. In this study, the repertory grid provided the basis for the creation of a perceptual matrix to access the two emergent and relational aspects within the executives' meaning-making of their leadership as agency (embodied) and the meaning-making of leadership as structure (embeddedness) mirrored in the holding environment of their organisation as they interpreted it through Kegan's (1982) theory of the five forms of mind.

Kegan (2009) argued that there needs to be a bridge anchored on either side of the individual's experience and its relationship to the organisation's social context for effective development in the stages of consciousness to occur. This dynamic is echoed in Wilber's (2000) suggestion that developmental theory, in general, has been moving towards a more integrative and holistic perspective, which views individual development as only one aspect of a developing system.

This study situates itself on Kegan's (1982) bridge in exploring leadership as a reflection of movements in LOC within the self and in relationship to the other as the organisation, drawing on Conifer's (2009, p. 91) idea that 'the existential focus on individual responsibility and the hermeneutic emphasis of self always in relation to other can offer a way of reframing leadership'.

The author of this study suggests that using both the SOI of Kegan's (1982) theory and the adaptation of the repertory grid from Kelly's personal construct theory (1955) to create the perceptual matrix to use in this study provides both qualitative and quantitative data that add robustness to the study. The SOI provides themes drawn from rich, detailed data based on Kegan's (1982) constructive developmental theory. The perceptual matrix generates another set of data that provides a triangularisation process for both interview data sets.

It is argued that this design approach provides for more elaboration and understanding of what different experiences have meant for individual executive leaders, particularly concerning the sense of self and leadership constructs in the organisational context. Both the SOI and the repertory grid perceptual matrix are detailed in the next chapter.

CHAPTER 3

METHODOLOGY

3:1 Introduction

The objective of this study was to gain a greater understanding of what is calling to be resolved in terms of developing new levels of mental complexity as LOC in constructs of leadership and its enactment and sensemaking in 21st century organisations (Weick,1995). Consequently, it sought to explore leadership as a psychological developmental process between the individual leader and the organisation as a holding environment.

The chapter first provides a macro view of the dominant philosophical traditions and worldviews that influenced research design to contextualise the pragmatic methodology chosen for this study. This is followed by a description of the multi-phase mixed methods research design approach used in the study.

The penultimate part of this chapter describes the research measure of the SOI, followed by a description of the repertory grid and its development into a perceptual matrix that was used for the analysis of the SOI. Finally, the chapter concludes with an outline of the ethical considerations and the limitations of the research.

3.2 Philosophical Assumptions

Different researchers adopt different approaches to research based on their core beliefs about the nature of reality, what it is and whether or how it can be known. These beliefs are described by Creswell (2008) as philosophical assumptions, worldviews, or paradigms, all synonymous terms to address beliefs that influence research design. Their interconnection is outlined in Figure 3.

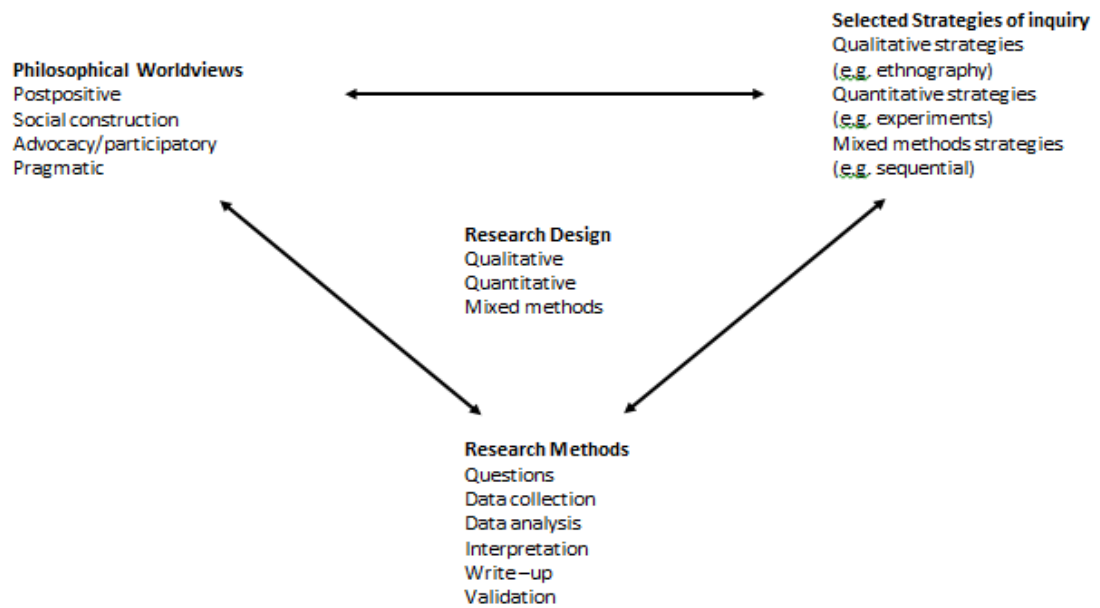


Figure 3. A framework for design: The interconnection of worldviews, strategies of inquiry, and research methods. (Source: Creswell 2008, ch.1, para.8, fig.1.1).

Within these synonymous terms, the concept of a paradigm, a term coined by Kuhn (1962) in his book *The Structure of Scientific Revolution*, has itself been the focus of debate as to its definition. Guba (1990) describes paradigms as characterised by questions such as what is out there to know (Ontology), how do we know what we know (Epistemology) and how do we acquire knowledge (Methodology) and ‘an axiological assumption about value freedoms’ (Lincoln and Guba 1985, p.28). For Creswell (2012), axiology is based on the concept that the researcher ‘openly discusses values that shape the narrative and includes his or her interpretation in conjunction with the interpretation of participant’ (p.21). According to Bryman (2012), the method used by the researcher ‘does not exist in a bubble hermetically sealed off from the social sciences and the various intellectual allegiances that their practitioners hold methods of social research are closely tied to different versions of how social reality should be studied (p.19).

Bryman (2004, p. 20) sets out what is considered to be the fundamental differences between the qualitative (interpretive, naturalistic) and quantitative (positivistic) approaches in social research as in Table 3.1.

Orientation	Quantitative	Qualitative
Principal orientation to the role of theory concerning research	Deductive: testing of theory	Inductive: generating theory
Epistemological Orientation	Natural Science Model in particular positivism	Interpretivism
Ontological Orientation	Objectivism	Constructionism

Table 3.1 Fundamental Differences between Quantitative and Qualitative Research Strategies (Source: Bryman, 2004, p. 20)

In the positivist paradigm, researchers believe they can act as a neutral observer and close the gap between theory and facts, and that knowledge is only of significance if it can be based on observations of an external reality (Easterby-Smith, Thorpe, and Jackson, 2012). This positivist paradigm, in turn, is associated with Quantitative research strategies and methods such as surveys and statistical analysis to collect and interpret objective data deemed the best epistemological approach to use within the operating assumption that there is an objective reality that can be known (Crotty, 1998; Neuman, 2003; Marczyk, DeMatteo and Festinger, 2005). On the other hand, Interpretivism is a worldview that suggests that all reality is constructed through and by people's experiences and belief systems and according to (Patton, 2002) there is no world view that can be uniquely determined by empirical data.

Interpretivism is broadly associated with Qualitative research and studies which seek to go beyond the basic facts to develop a deeper understanding of factors, which are sometimes hidden, and that may account for behaviour (Merriam, 2009). According to Denzin and Lincoln (2005), 'Qualitative is a situated activity that locates the observer in the world. It consists of material that makes the world visible.... it involves an interpretive, naturalistic approach' (p.3.) Rallis and Rossman (2003) describe a paradigm as an era of thought, while (Tashakkori and Teddlie, 2003) describe it as referencing a particular group of scholars or communities with a particular world view in their research approach, such as combining QUAN and QUAL methods as in MMR approaches. Within this broader narrative of paradigms, Morgan (2007) argues for the addition of pragmatism as a methodological paradigm worthy of its place alongside the two traditions stating that no one way has the way to truth and knowledge but rather than recognising different methods as appropriate for different situations and research questions and what Patton (1988, 2002) describes as a 'paradigm of choices'.

3.3 Philosophical Foundations of this Research

When making choices about research design, Antonesa et al. (2006, p.12) suggest that such choices are not as simple as ‘choosing one over the other’ because, as stated by Creswell (2012), the more complex issues we face in our world require more nuanced ways of seeking to inquire into such complexity. It was the implicit complexity of stages of mind and the complexity of different organisational contexts that informed the choice of anchoring this study inside paradigms of a constructivist worldview married to a pragmatic worldview and methodology. As stated by Stewart and Wolodko (2016), Kegan's theory (1982) of adult meaning-making ‘is a relational theory that places the thinking and acting person within complex contexts’ (p.40). These paradigms were deemed as the best fit for underwriting this study, s exploration of leadership as LOC and its sense making for emerging complexities of 21st society and constructs of organisational models within them and the leaders and or leadership that inform them.

For example, this study’s central focus is on exploring the structure running the meaning-making of the mind of the executive leaders, and that structure is embodied inside a fusion of individual and social identities expressed through different perceptual lenses. Perception itself as a social information processing model is hugely complex, being ‘subjective, selective and largely automatic’ (Bratton, 2016, p.134) and therefore inquiring into an aspect of this perceptual lens requires more than one approach to allow for this complexity. Pragmatism allows for pluralism of different research traditions going back and forth as warranted and employing experimental methods from different research traditions based on using whatever best helps the inquiry to construct emergent futures. (Morgan, 2007).

Equally, social constructionism focuses on knowledge being context-bound, where individuals make personal meaning of their learning experiences through the internal construction of reality and active meaning-making by individuals (Scott et al.2007). This type of internal construction aligns with the exploration in this study of the meaning-making of leadership inside the contexts of organisations and the individual interpretation and enactment by individual executive leaders expressed as a LOC within those contexts.

In this regard, this study was informed by these types of constructivist assumptions based on the principle that people actively contribute to making meaning and that there are different views of the world (Schwandt, 2005). Correspondingly, the study's research methodology was anchored in a philosophy of classical pragmatism with its intellectual roots in (James, 1912; Mead, 1934; Dewey, 1949; Peirce, 1965 cited in Simpson, 2018) and their associated focus on non-duality and non-foundational approaches to research. Simpson (2018) states:

Classical pragmatism rejects formalisms and abstractions in favour of a genuine concern for how our worlds continuously unfold through our collective efforts to cope with the day-to-day exigencies of modern life and 'has considerable potential to inform those aspects of business and management research that are concerned with the dynamics of human and social practice.' (p.54).

Concerning the broader debate around definitions of paradigms, Cahill, and Freshwater (2012, p.152) proposed that irrespective of definition and emphasis, 'understanding the constructed view of paradigm is key'. This constructed view of the concept of paradigms echoed Morgan's (2007) contention that the paradigm debate itself is a social construction. Further, while Morgan (2007) acknowledged the place of ontology and epistemology in research activity, he argued that privileging one ontological or epistemological approach over the other was a constructed view. Furthermore, Morgan (2007) argued that a pragmatic approach to methodology is on experience and action and is interested in 'asking questions about how humans live their lives rather than staying in never-ending debates about the nature of knowledge.' (p.68).

Morgan (2007) suggests that the two-paradigm view was too narrow in the pursuit of knowledge, which is not how research is conducted in practice. Morgan (2007) does not dismiss any of the traditions but instead sees them as simply part of different techniques for the broad purposes of breadth and depth of understanding and corroboration. Morgan (2007) argues for research approaches that include pragmatism as a legitimate paradigm among many and one which marries epistemological concerns with methodology and methods, stating that 'we need to devote equal attention to studying the connection between methodology and epistemology and the connection between methodology and methods' (p 68).

In this context, Morgan (2007) argued that the purpose of a pragmatist approach is to ‘attempt to gain knowledge in the pursuit of desired ends rather than to remain in abstract debates about the nature of reality’ (p.69). Furthermore, Morgan (2007) noted that a pragmatist approach, as espoused by Dewey, Mead and Pierce (1937, 1949), is focused on ‘lines of action’ in terms of what can be observed in the action of the actor in their living experience of day-to-day life and what might be anticipated as the cause of the action ‘warranted assertions’ and to the ‘workability’ of how these assertions might influence future action.

In this study, it is in the observation of the actor(s) themselves (inside six case study organisations) of their own ‘lines of action’, and the researcher’s interpretation of those ‘lines of action’ within the principles of the subject-object theory of Kegan’s (1982) LOC that considered Morgan’s (2007) alternative pragmatic paradigm of research methodology to be the most beneficial for the inquiry of this study.

3:3:1 A Pragmatic Alternative Methodological Approach

Morgan’s (2007) alternative pragmatic approach connecting the epistemology of the research inquiry to the chosen methodology is outlined in Table 3:2:

	Qualitative	Quantitative	Pragmatic
		Approach	Approach
<i>Connection of theory and data</i>	Induction	Deduction	Abduction
<i>Relationship to the research process</i>	Subjectivity	Objectivity	Intersubjectivity
<i>Inference from data</i>	Context	Generality	Transferability

Table 3.2 Paradigms Lost and Pragmatism Regained: Methodological implications of Combining Qualitative and Quantitative Methods. (Source: Morgan 2007, p. 71)

In discussing connecting theory to data in the abduction approach in his framework Morgan (2007) stated that it involves combining both qualitative and quantitative methods in a sequential fashion and where ‘the inductive results from a qualitative approach can serve as inputs to the deductive goals of a quantitative approach and vice versa.’ (p.50).

The study draws on this abductive approach to research methodology, noting the distinction of the abductive nature of research for exploring LOC inside individuals and

different types of organisation models (Laloux,2014). Simpson (2018) also notes that the classical pragmatism of Pierce (1965) described the inductive and deductive as useful approaches to research for what is already known while the abductive is most useful for exploring what might be stating:

While deduction and induction are adequate inferential tools for a world that already exists, the emergence of a world in process cannot be accounted for without the logic of abduction and an associated pragmatic approach to data generation. (p.58)

The LOC, as conceptualised in Kegan's (1982) theory, are implicitly about 'a world in process'. As such, they reflect the emergence of *what might be* possible in new LOC and, in this regard, are abductive. The matrix design combined QUAN and QUAL data to explore ideal LOC as perceived by the executive leaders of themselves and their organisation's sensemaking of leadership and captured the idea of what might be in terms of their own and their organisations LOC.

In discussing and describing the intersubjectivity aspect and its relationship to the research process in his framework Morgan (2007) notes the use of both subjectivities (QUAL) and objectivity (QUAN) approaches in the research process, which he sees as necessary to understand shared meaning and communication processes. In this study, the structure running the meaning-making of the mind as conceptualised in Kegan's (1982) subject-object theory is implicitly a movement between different levels of intersubjectivity.

This intersubjectivity is one facet of a capacity to influence the individual LOC in terms of its centre of gravity as a LOC at a given moment and simultaneously as a developmental stream (Wilber,2000). This intersubjectivity leads the way to the possibility of emerging into new LOC conceptualised in this study as expressions of leadership and its construction as a developmental process of the self (Kegan, 1982). This developmental process within Kegan's (1982) subject-object theory is embodied in the research measure of the SOI (Lahey et al. 1988) as its theoretical underpinning used in the study.

Based on the literature review, the grid that was designed for this study as a perceptual matrix provided the means to explore the present LOC and the ideal (abductive) LOC. This design further allowed for a window into the connection of those two places to the actual LOC (inductive) of both the individual executive and the organisation (deductive) as perceived by them, which was then interpreted and analysed through SOI protocols.

The third element of Morgan's (2007) framework is transferability, a concept based on inferences made from data. Morgan (2007) advocates for 'a pragmatic approach of what people can do with the knowledge they produce and not on abstract arguments about the possibility and impossibility of generalizability' (p. 72). This, he argues, enables researchers to take risks and explore challenging questions without stopping before ever starting for fear of issues of generalizability. Within this pragmatic methodological background, a case study approach incorporating mixed methods was used as the strategy of inquiry to conduct this study drawing on Yin's (2014) conceptualisation that the case study approach is 'suited to situations where it is impossible to separate the phenomenon variables from the context.' (p.29).

3.4 Strategies of Inquiry

3.4.1 Case Study

Remenyi (1998) suggested that case study research aims to provide a multidimensional holistic picture of the situation in a real-life context, while Creswell (2007, p.73) describes a case as 'a bounded system (for one case) or 'multiple bounded systems' (for more than one) with the researcher clearly outlining the objective, scope and focus of the research.

This study's objective was to identify and understand more about the underlying structure running the meaning-making of the executive leaders' personal constructs of their leadership expressed as a developmental stage of mind. The focus is within their individual LOC as self (agency) and their organisation's (structure) LOC as self, and the scope is within the particularisation of six different organisations. In this context, as Yin (2014) pointed out, case studies 'can include single or multiple cases' (p. 3) and is 'a linear and iterative process' (p.21).

Yin (2014) further states that case study is a discrete and worthy research method by emphasising the importance of context and contemporary phenomena. Furthermore, Yin (2014) outlined how in an experimental approach to research design, the focus is on separating phenomenon from its context while controlling for as few variables as possible to best manage the reliability and validity of the experiment.

He also argues that while surveys can deal with phenomenon and context, it can be difficult, for example, to investigate context due to constraints of numbers of questions and the number of respondents who are to be surveyed in such a research approach. In explicating the usefulness and distinction of using a case study approach to research design, Yin (2014) made further important distinctions relevant to his operational definition of case study methodology as an all-encompassing method emphasising how it is practised as a key variable inside the following features of the approach. In other words, case study research:

- Copes with the technically distinctive situation in which there will be many more variables of interest than data points and as a result
- Relies on multiple sources of evidence, with data needing to converge in a triangulating fashion and as another result
- Benefits from the prior development of theoretical propositions to guide data collection and analysis. (Yin, 2014. p. 17).

This study encompassed all these elements as identified by Yin (2014), being real-world contemporary cases as phenomena focused inside the context of different organisations and different individual executive leaders inside an exploration of LOC, a complex phenomenon in and of itself. Indeed, Stake (1995), in discussing the value and uniqueness of a case study approach, states that:

Previously unknown relationships and variables can be expected to emerge from case studies leading to rethinking of the phenomenon being studied. Insights into how things get to be the way they are can expect to result from case studies. (p.47)

Furthermore, Merriman (1998) defines case study research as ‘an intensive, holistic description and analysis of a single instance, phenomenon or social unit’ (p. 21) and also added that while words predominate QUAL data:

That numbers can be recognised as another form of QUAL data as like words, numbers are also representations, yielding a different quality than words, the quality of Quantification. This suggests the value of studying the same phenomenon through collecting a variety of forms of data or using multiple approaches, a process known as triangulation (p. 104).

The use of a case study method was deemed the optimum approach to use in this study, enabling a multiphase convergent approach with a triangulation of data using mixed methods guiding the data collection and inquiry. Denzin (1978) defined triangulation as ‘the combination of methodologies in the study of the same phenomenon (p.291). This study uses both methodological triangulation in its use of mixed methods and data triangulation by using QUAN and QUAL data in six case study organisations. Farquhar (2013) stated that using different data sources helped triangulation where the investigation from different perspectives ‘provides robust foundations for the findings and supports arguments for its contribution to knowledge’ (p.7).

However, one of the criticisms of case study research is that it is not objectivist, where the researcher is often immersed in the cases that can lead to subjectivity. In this regard, Stake’s (1995, p .1) vision of case study research is that as a researcher, ‘We enter the scene with a sincere interest in learning how (actors) function in ordinary pursuits and milieus and with a willingness to put aside many presumptions while we learn’. Further Yin (2009) stated that the purpose of the case study approach is not seeking objectivity in terms of generalizability, but rather it is intended to provide an opportunity for an in-depth understanding of a contemporary phenomenon in context. Equally, Stake (1995) argues that the real business of a case is particularisation and understanding the case itself.

Each case to be studied is a complex entity located in its own situation. It has its special contexts or backgrounds. Historical context is almost always of interest but so are cultural and physical contexts. Others that are often of interest are economic, political, ethical, and aesthetic contexts (Stake, 1995, p.25).

This study against this broader overview of research methodology uses a mixed-method approach within a case study strategy drawing on both (QUAN and QUAL) data collection. This allows for what Yin (2009) described as the benefits of case study as a strategy to create the opportunity for depth of analysis and exploratory and explanatory phases in the inquiry helping to explain, describe, illustrate, and enlighten.

Furthermore, a case study (Yin, 2009; Stake, 1995) approach with its focus on the importance of context reflects the research inquiry of this study into the complexity of the phenomenon of developmental LOC in the context of the holding environment of the organisation conceptualising leadership (social capital) and leader development (human capital) as an interlinked activity (Drath et al. 2008) and bridging them through Kegan's (1982) theory of forms of mind.

The approach taken allows both the collection and analysis of both quantitative numeric data and qualitative narrative data, allowing through this combination approach as stated by Stentz, Plano Clark and Matkin (2012) for a maximisation of:

The strengths of each approach while making up for the weaknesses of the approaches, develop more complete and complementary understandings, increase validity of results, use one form to build on the results of the other, and/or examine contextualized understandings, multi-level perspectives, and cultural influence (p.2)

Yin (2009) outlines how case study research is particularly suited to questions of how, why and who and 'the essential tactic and a characteristic of case study research is to use several different sources of data within each case or cases' (p.35). In this context, the chapter outlines mixed methods as a strategy of inquiry that was adopted in the study.

3.4.2 Mixed Methods Research

Youngs and Piggott-Irvine (2012) suggest that mixed methods 'is in the middle of the postpositivist to constructivist paradigm continuum (Leech, Dellinger, Brannigan & Tanaka, 2008) and is an eclectically oriented paradigm' (p.187). Johnson et al. (2007) described a mixed-methods approach as the third research paradigm operating a middle way between quantitative and qualitative approaches, while Greene (2012) suggests mixed-methods inquiry common goal is 'to yield a better understanding of key phenomena' (p.758).

Within these operating definitions and purposes of mixed methods, its primary purpose is to enable the use of different QUAN and QUAL strategies of inquiry that are best suited for the research question argued by Tashakkori (2006) as a bottom-up approach where the research question drives the mixed methods approach.

Furthermore, Johnson and Onwuegbuzie (2004, p.17) argue that 'what is most fundamental is that the research question and research methods should *follow* research questions in a way that offers the best chance to obtain useful answers'.

Indeed, Wolf (2010) argues against a “one-size-fits-all” approach to research inquiry but rather, ‘to use tailor-made *triangulation* strategies fitted to the respective research topics, questions, and interests’ (p.160).

Equally relevant to this study is a call for a mixed-method approach to leadership by Stentz et al. (2012), who stated that ‘much of what is currently understood about leadership development has been developed through quantitative and statistical approaches’ (p.1). Therefore, the authors argue that ‘to understand relevant leadership processes best and dynamics, the field of leadership research calls for the application of multiple research approaches’ (2012, p.1).

However, the use of mixed methods as strategies of inquiry is not without its critics. As Rossman and Wilson (1985) stated:

Purists usually focus on the paradigm level and hold that qualitative and quantitative approaches derive from different, mutually exclusive epistemological and ontological assumptions about the nature of research and society (Collins, 1984; Bryman, 1984). Smith (1983) argues that the two approaches cannot be combined, and Burrell as mutually exclusive.... A synthesis is not possible, since in their pure forms they are contradictory, being based on at least one set of opposing metatheoretical assumptions (p. 3)

The authors (1985) also argued that most pragmatists would agree with Denzin (1970) assessment that ‘a false dichotomy exists between these two types of data.’ However, they also state that:

Our experience suggests that numbers and words can be used together in a variety of ways to produce richer and more insightful analyses of complex phenomena than can be achieved by either one alone (1985, p. 641)

Concerning this study with its interest in exploring and examining the complexity of gaining insight into the structures running the meaning-making of the mind of the individual executive leaders sense making of their own leadership and its relationship to their organisation’s sense making of leadership, it is argued that combining both numbers and words helped in deepening the analysis of this complex phenomena.

3.5 Research Design used in this Study

This study used a multi-phase convergence research design consisting of four distinct phases. Each phase was sequentially aligned with other phases to build upon and provide an overall interpretation of the study. Youngs and Piggott-Irvine (2012) state that the convergence model is used when researchers ‘want to compare results or validate, confirm, or corroborate quantitative results with qualitative findings (Creswell and Plano Clark, 2007, p. 65)’ (p.189).

This convergent approach consisted of four distinct levels to identify numbers (QUAN) as values representing different LOC. These values together with the QUAL data of the related transcripts were scored applying the principles and protocols of the SOI measure providing simultaneous QUAL and QUAN data underwriting the numeric score of LOC (Figure 4).

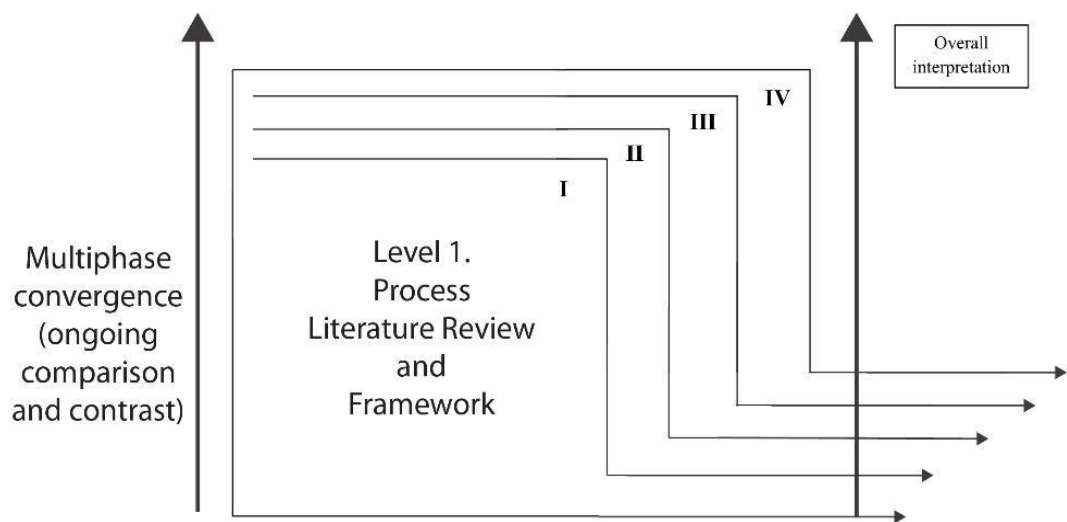


Figure 4: Multi-phase research design used in the study. Adapted from Youngs, H., and Piggott-Irvine, E. (2012). (Source: Youngs, and Piggott-Irvine 2012, p.190, fig.2)

Level 1

- Phase one consisted of a review of the literature (Chapter 2), which identified Kegan’s (1982, 1994) conceptual framework and its associated SOI as the key measure to use in the research inquiry.
- This phase also led to the development of a repertory grid underwritten by the subject-object principles. This repertory grid was developed as a perceptual

matrix by the researcher and used as an interview instrument to access both the ostensive (Me) and performative (I) self at both the individual executive leader level and organisation level as expressions of LOC and/or forms of mind (Kegan's 1982, 1994).

Level 2

- This phase adopted a case study approach to examine the organisations and the individual executive leaders regarding their perceived LOC of both the organisation and insight into the agency-structure (subject-object) dynamic and its impact on leadership as a LOC.
- Phase two (exploratory) Conducting the first set of interviews using the repertory grid (QUAN and QUAL). This led to the identification of the individual executives' perceptions of their own form of mind (as leadership as agency) and their perception of the organisation's form of mind (leadership as structure) expressed through numbers using Kegan's 1—5 range of the SOI measure. The researcher of this study is trained to both conduct and score the Subject-Object Interview (Lahey et al.1988) and used these principles in both the design and analysis of the repertory grids.
- These (QUAN) numbers and self-identified scores of forms of mind or (LOC) were underwritten by analysis and interpretation of the transcripts of the interviews of the Grids adding a (QUAL) dimension to the analysis of the score using subject-object measures and protocols. Thus, the repertory grid is not a formal assessment like the SOI measure but an interview technique. Its purpose is to use both the numbers generated by the participants and the recorded transcripts to identify a stated perception of their LOC and their organisation's LOC as constructs of leadership.

The researcher of this study then separately interpreted their scores based on the transcripts in the context of SOI protocols for comparison with their stated score as a form of mind expressing their leadership and organisation leadership.

Level 3

- Phase 3 (explanatory), the second set of interviews were conducted using the SOI as the formal psychological assessment measure of the individual executive leaders forms of mind. Again, the transcripts were transcribed, analysed, and scored (QUAL) according to the protocols of this measure by the author.
- These interviews were double scored by another trained scorer of the SOI for comparison of scores. The two sets of interviews provided for a triangulation of the data generated through structured interviews and the second set of semi-structured interviews. In using different methods to collect data, this research concurs with Patton's (2002) avowal that cross-data 'leads to consistency checks in the methodology' (p. 554). Furthermore,

The logic of triangulation is based on the premise that no single method ever adequately solves the problem of rival explanations due to biases and singularity in the data for example (Patton, 2002, p. 555).

Level 4

- In this level there was a review of the holding environment of each organisation together with a profile of each executive leader within each organisation as six discrete case studies resulting in a convergence of the various stages into a composite overall interpretation of the study outlined in the Presentation and Analysis chapter.

The chapter proceeds to outline the SOI (Lahey et al. 1988) both as a measure of LOC and its associated analysis. This is followed by an outline of the repertory grid which is also underwritten by the principles of Kegan's (1982) theory and the SOI protocols for conducting and analysing data. While the repertory grid was used for the first set of interviews its sense making lies within the principles of the SOI and on that basis, the SOI is first described.

3.6 Subject-Object Interview

The SOI is a research methodology developed by Kegan and Lahey (1984) and is a psychological interview used to access orders of mind. It is a semi-structured, 60–90-minute interview designed to explore the ways an individual makes sense of his or her experience, according to Kegan's (1982) subject-object theory.

The SOI is focused on the structure of meaning-making, i.e., how individuals think about the world. Berger-Garvey (2012) stated that it 'offers a window into someone's meaning-making system: a window that an outsider can see into, and that the interviewee can peer into to gain a new level of self-knowledge,' (p.50).

Lahey et al. (1988) argued that the SOI provides in-depth, rich data which can provide a different insight into how individuals interact with their environment. Helsing and Howell (2014) noted that the SOI can help maintain a focus on development and the relationship between one's capacities and the demands that exist within a role or the context of the organisation or environment. Helsing and Howell (2014) further stated that the specific challenges a leader identifies and elaborates on through the SOI are far more powerful than merely having a developmental score.

McCauley et al. (2006) in their review of studies using constructive developmental theory, have related three main sense-making stages, namely dependent order, independent order, and inter-independent order, to leadership development stages, arguing that these stages are representative of stages three, four, and five of Kegan's (1982) constructive-developmental theory.

Kegan and Lahey (2009) outlined these three qualitative different plateaus as expressions of mental complexity described as the socialised mind, the self-authored mind, and the self-transformed mind in terms of meaning-making systems that adults use to make sense of the world and operate within it in profoundly different ways. Each successive way of knowing is deemed more developmentally complex than the previous one, and what was once the subject to the person in the less complex way of knowing becomes the object to the person in the next more complex stage of knowing as outlined in Figure 5.

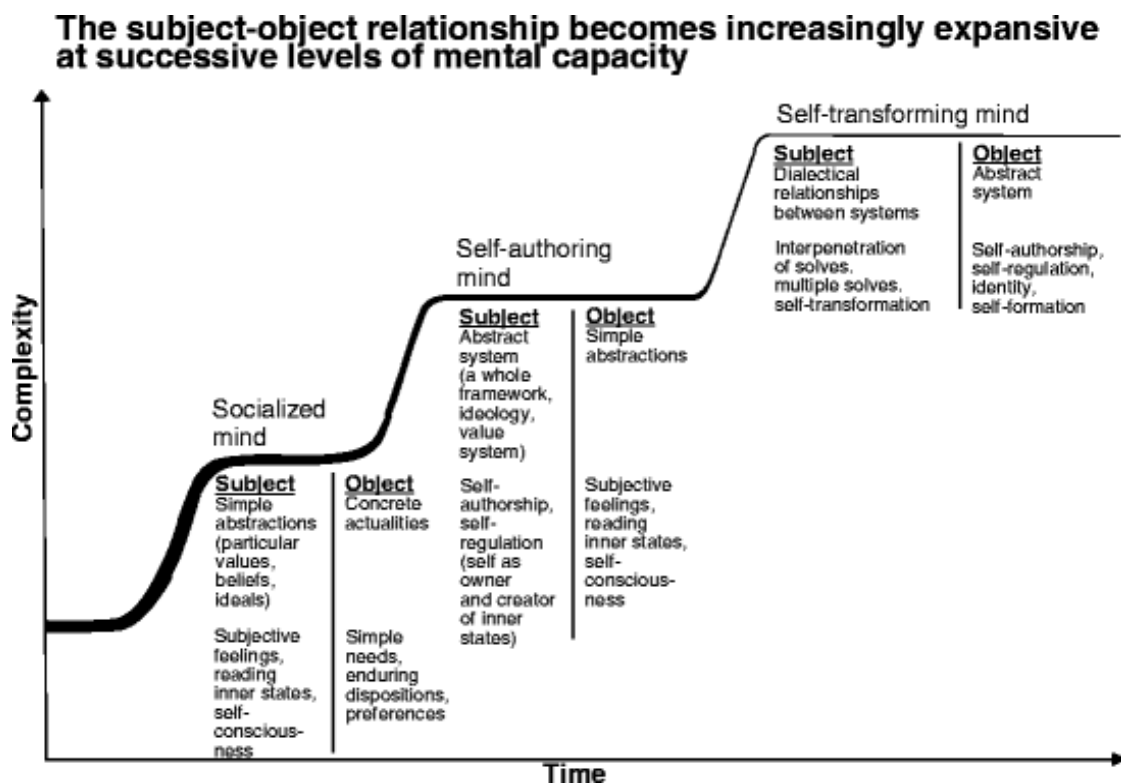


Figure 5: Subject -Object relationship increasing complexity at successive levels of mental complexity. (Source: Kegan and Lahey. 2009, p.52, fig 2-6)

According to Kegan (1994), a person cannot simply learn or be taught the complexities of the successive stages or forms of mind, but rather the person needs to ‘outgrow’ his current way of knowing (less complex) before he or she could organize the environment of the more complex way of knowing. There is, in other words, an ignition of something ‘other’ to realise and release into future possibilities of a more expansive self, creating in turn, more psychological and expansive space for meaning-making and perspective-taking. Kegan (1994) used a geometric metaphor to illustrate this transformation. The metaphor begins with a point, which can be part of and incorporated into a line, which can, in turn, be part of or incorporated into a plane.

Furthermore, Phipps (2010) noted that while the stages occur in sequential order, the later stages are not linked to chronological age, nor will all adults necessarily reach the later stages. Equally, Phipps (2010) noted the movements of transition from one stage to the next and demonstrates that the subject once became the object at the next stage as outlined in Table 3.3.

Stage	Subject	Object
1. Impulsive	Perceptions, immediate needs, feelings	Reflexes
2. Instrumental	Personal goals and agendas	Perceptions, immediate needs, feelings
3. Socialised	Interpersonal connections, mutual obligations	Personal goals and agendas
4. Self-authoring	Personal standards and value system	Interpersonal connections, mutual obligations
5. Self-transformational	Interpretation of systems	Personal standards and value system

Table 3.3 Stages of constructive development. Adapted from Kuhnert and Lewis, 1987 and additional information from Kegan (1982). (Source: Phipps, A.2010, p.155, table 1)

While transitioning between stages, adults will hold onto the current stage and experiment with the next. During this experimentation, a person will face challenges and perhaps struggle while taking on board a new way of making meaning. According to Barbuto and Millard (2012) ‘when life experiences create a dissonance or tension in leaders, they will begin the transition to the next order.’ (p.238).

Kegan (1994) argues that adults will spend their time transitioning between the various stages, holding on to the former stage while experimenting with moving to the next stage. This transitioning dynamic is of interest in this study in terms of how the executive leaders may be experiencing these types of tensions within themselves and within the holding environments of their organisations and expressed inside these different LOC and the transitions within them. These stages and transitions are outlined in the next section to understand how the movement works as identified in the numbers (QUAN) within the different possible LOC that can emerge inside the case studies.

3.6.1 SOI Assessment Measure

Inside each stage or level, there are four possible transitions with the numbers representing the movement from subject to object and the primary number representing which part is the centre of gravity of meaning-making at a given moment in time within the various gradations within each stage. For example, as Hesling and Howell (2014) explain, the discernible developmental distinctions of the four gradations between the socialised (3rd) and self-authoring (4th) orders are represented in the following way: 3(4) 3/4 4/3 4(3)

In these developmental positions, both stages are evident and are designated according to which mindset is predominant. For example, 3(4) indicates that the socialising mindset predominates, but there are signs that the self-authoring mindset is beginning to emerge: 3/4 and 4/3 indicate that both are present, with the first number as the mindset dominating slightly; and finally, 4(3) indicates that while the self-authoring mindset dominates, there are vestiges of the socialising mindset that remain.

Given the age of participants in this study, evidence of Stage 1 (Impulsive stage) was not expected to emerge during the SOI interviews as these stages develop during early childhood. An overview of stage 2 to stage 5 indicates the four gradations within each stage, allowing for a possible 16 transition points between the instrumental and self-transforming stages (Table 3.4).

Stage	Numerical Values	Description
<i>Instrumental</i>	2(3) 2/3, 3/2, 3(2)	Behaviour is governed by individual needs, interest, and desires. Individuals will define others according to how they can be assisted by them.
<i>Socialised</i>	3(4), 3/4, 4/3, 4(3)	Individuals can modify or defer their personal needs to take into consideration the needs of others. Other's perceptions of oneself become very important.
<i>Self Authoring</i>	4(5), 4/5, 5/4, 5(4)	Individuals display more independent thinking with an ability to challenge rather than follow other expectations and demands. This independent thinking stems from a system of values and principles.
<i>Self Transforming</i>	5	Individuals can accommodate more than one ideology and can evaluate ideologies objectively without the threat of criticism.

Table 3.4 Lahey et al. (1988) SOI Stages of Mind and Transitions.

3.6.2 Conducting the SOI

The ultimate purpose of conducting an SOI is to generate data that clarify the person's developmental prevailing stage, as reflected in the interview (Lahey et al.1988). The SOI was conducted with each executive leader. The essential question embedded in the SOI interview protocol is 'from where in the evolution of subject-object relations does the person seem to be constructing his or her reality?' (Lahey et al.1988, p.10). Each interview was tape-recorded and transcribed, and each SOI transcript was analysed (see Lahey et al.1988) using Kegan's (1982) theory to assess each executive leaders developmental level.

The SOI involves the use of ten cards containing certain words to assess a person's developmental level. All ten cards with the following words were used: success, anger, vital to me, sad, lost something, change, torn, strong stand/conviction, moved/touched and anxious/nervous. As recommended by Lahey et al. (1988), each participant was given fifteen minutes of preparation time in advance of the interview and asked to make notes on each card as a prompt for when the interview commenced.

The author showed each card and stated to participants: 'tell me about a time when you experienced anger (sadness, anxiety etc.) at work in the last 6-12 months.' Once the interview commenced, the purpose was to understand the meaning-making level of the participant and the author as the interviewer continued probing by using 'why' questions to understand better the meaning the participants took from their experiences. However, it should be noted that the experience itself is less relevant than the meaning the person attached to it (Kegan and Lahey, 2009).

In a study exploring the experience of learning how to conduct, analyse and score the SOI, Van Diemen van Thor (2014) highlighted several challenges in using the SOI, such as the capability to recognise the stages and the transitions between stages in Kegan's (1982) theory, the discipline required in understanding Kegan's theory and the challenges presented when faced with an interviewee at a more advanced stage.

The SOI training programme was completed by the author conducted by Harvard Graduate School of Education faculty in the USA on analysing the output of SOI interviews. The focus of the training was to identify the characteristics of an individual at each stage, which involved building a guide sheet of these characteristics as output from the training. Subsequently, the author of this study completed additional formal certification in scoring the SOI. This involved scoring a series of sample interviews

successfully within one deviation of the reliable/expert score. The formulation process sheet and overall formulation sheet (see Appendices A and B) had to be submitted for review and evaluation provided by the trainers afterwards.

In this study and to add further reliability, the author sought out a second qualified SOI rater to score the SOI interviews. According to Lahey et al. (1988), for the scoring to be reliable, the researcher's initial rating and the second rater's score must be within one transition point of each other. Mc Cauley et al. (2006) state that the SOI has been widely used and has been empirically tested over the last 30 years.

Prior studies that have used this approach registered complete agreement reliabilities of 70 per cent to 80 per cent, with most reliabilities at 100 per cent for a 1/5 order discrimination (Lahey et al. 1988). Colby et al. (1983) report eight different interrater tests that each involve 10-20 interviews and report complete agreement (using 13 possible distinctions) 60 per cent of the time. They report agreement within 1/3 of stage 96 per cent of the time and adequate levels of test-retest reliability and inter-rater agreement as well as evidence of construct validity.

The test-retest reliability for the SOI is correlated with a Spearman's coefficient of .82 and Pearson's r of .834, which are significant at the .0001 level (Lahey et al., 1988). In addition, Lahey et al. (1988) note positive correlations between the SOI and similar types of measures (e.g., Kohlberg's Moral Judgment Interview, 1984; Loevinger's Sentence Completion Test, 1985).

3.6.3 Analysis and Interpretation

To analyse an SOI, each interview must be transcribed and reviewed for structural evidence (referred to as 'bits'). In reviewing the interviews, the researcher is trying to interpret where the person seems to be constructing his or her reality. To analyse the interviews, a process sheet is completed for each interview (Appendix A). This allows the interviewer to assess each item of data identified in the interview. For each item of data, a proposed range of hypotheses is suggested, and the interviewer must consider the following questions about each one:

- What structural evidence leads you to these hypotheses?
- What evidence leads you to reject other plausible counter hypotheses?
- If you have a range of hypotheses, what further information do you need to narrow the range?

Once the process sheet is completed, the interviewer looks for a minimum of three bits of structure to make a tentative overall hypothesis about the participant's stage of development (Lahey et al.1988). At this stage, a 'Subject-Object analysis' formulation sheet is completed (Appendix B). The purpose of this analysis is to challenge and reject any other plausible hypotheses and set out the rationale for this rejection. Finally, the interviewer usually rejects the development stage on either side of the tentative hypotheses they assess to establish a single overall score. In this way, the interviewer can be sure that they have analysed the interview correctly. To analyse an SOI, the interviewer needs to determine the stage of development and any potential transition points between stages.

It was these SOI protocols and stages of LOC that the author of the study used to inform the development of the repertory grid to access the meaning-making as perceived by the executives of leadership in their organisations as an LOC. The chapter proceeds to outline the repertory grid as a perceptual matrix used as the basis for the first set of structured interviews. Finally, the data from both sets of interviews were analysed to gain insight into the underlying meaning-making system operating within the executive leaders LOC using the SOI measurement protocols.

The study seeks to understand to what degree the executive leaders stated stage of mind correlates with the author's scoring of their repertory grid interview data using the SOI protocols based on the transcripts of their interviews underwriting their numerical scoring within the repertory grid. Furthermore, the study sought to explore whether there was any similarity in the scoring by the executive leaders in their repertory grid data and the formal assessment of their SOI interview using the SOI measurement and to examine the implications of any patterns or distinctions.

The SOI was the second interview conducted with the participants, and the data from both interviews provided the basis of an overall discussion within each of the case studies, of the individual executive leader LOC and the context of the holding environment of their individual organisation. The scoring and related discussion and analysis focused on its implications for the research inquiry in terms of the study's research question based on what is being called to be resolved in developing new levels of mental complexity in leadership sense making and constructs in 21st century organisations.

Having outlined the SOI as an assessment measure that underpins both interviews, the chapter proceeds to describe the repertory grid as a measure and a structured interview tool.

3.7 Repertory Grid as a Structured Interview

The purpose of grids is to inform us about how our system of personal constructs is evolving in both its limitations and possibilities. It is a way of standing in the shoes of others, ‘to see the world from their point of view, to understand their situation their concerns’ (Fransella, Bell and Bannister, 2004, p.6). Jankowicz (2004, p.36) describes the repertory grid as ‘a form of structured interviewing, with ratings or without, which arrives at a precise description uncontaminated by the interviewer’s own viewpoint.’

While the repertory grid has been used for various research aims in business contexts (Klapper, 2014) clinical fields (Beail, 1985; Cridland et al. 2014), it is according to (Patton, 2002) more commonly used to develop a theory or when the literature is limited (Easterby-Smith, Thorpe, and Lowe, 2002; Eisenhardt, 1989).

The repertory technique involves the researcher requiring the respondent to generate a list of ‘elements,’ i.e., objects, people, or processes (about which the interviewee is likely to have constructs), that exemplify the realm of the discourse of the topic in question. When exploring the self-concept, for instance, it is usual to have the self (Myself as I am now) and the ideal self (Myself as I would like to be) as two of the elements, and other elements would be generated by negotiation with the interviewee to represent the topic in question best.

Different interviewees have different constructs concerning any topic, and the purpose of a set of repertory grid interviews is to identify the constructs which different individuals use in giving personal meaning to their experience. Bannister et al. (1994) pointed out:

Construing is not thinking or feeling but an act of discrimination that may take place at many levels of awareness, from intuitive thought to verbal, which then enables us to anticipate future events’ (p. 89).

This was of interest in this study in terms of how different aspects of the organisation's holding environment may manifest in the behavioural dynamics of people in the organisation.

This interplay can become evident in the ‘anticipation’ of the executive leaders’ perception of the meaning-making of leadership present in the organisation and its impact or influence consciously or unconsciously in their own meaning-making of leadership made manifest in its visible behaviours in themselves and others.

Franscella, Bell and Bannister (2004, p .7) defined a construct as ‘a way in which two or more things are alike and thereby different from a third or more things’. Thus, constructs are bipolar in that they represent an opposition, as stated by (Franscella, Bell and Bannister, 2004, p. 7), and it is often the opposite pole of a personal construct that gives a precise meaning to that construct. Furthermore, these authors stated that the ‘essence of a construct is a moveable feast’ and again that the ‘bipolarity resides in the construct itself, not in the two sets of elements that are sorted by the construct’. (Franscella, Bell and Bannister, 2004, p. .8)

Pope and Denicolo (2001) describe how the repertory grid was initially used in a clinical setting, and in this type of setting, the elements and constructs were elicited from the client. However, they pointed out that the use of the grid as a technique has:

Been detached from its theoretical base and so the use of a standard form of a repertory grid in which both the elements and constructs are provided for the person rather than elicited from the individual concerned has become more widespread. (p .71)

Furthermore, in the debate about whether one should supply or elicit constructs, Bell (2005, p. 69) suggests ‘that it would seem to depend on the context in which the grid was being used’ while Pope and Denicolo (2001, p. 68) stated:

The elements in a provided grid should be representative of what Kelly referred to as ‘the universe of discourse’ which is central to the problem area, and similarly, provided constructs should be dimensions which are appropriate to the particular purpose. The repertory grid is a procedure used to help gain an understanding of how an aspect is perceived by a person. Each investigation will be on a particular topic and must be focused on the arena which represents to participants an area they are able to construe

In the context of this study, the purpose of the grid was to understand more about the executive leaders perceptions of leadership within their organisation expressed as their LOC Kegan (1982). The focus was on understanding the underlying subsystems of the meaning making of the executive leaders LOC as influenced by their anticipation and

interpretation of their organisations meaning making of leadership within its holding environment.

Consequently, the grid was designed by the author for this study with supplied elements and constructs within the overall construct of exploring leadership as LOC as ‘the universe of discourse’ inside levels of *self now*, *self-three years ago* and *ideal self* at both an individual and organisational level of analysis to gain insight into the nature of the inter-relationships between them.

Pope and Denicolo (2001) pointed out that while there is no magic answer to the number of constructs in a grid a key rule of thumb is that the function is not to ‘encapsulate the whole of an individual’s construct system but only that part of it which is relevant to the defined purpose’ (p.78).

Bell (2005) describes the repertory grid technique as follows:

A repertory grid may contain both qualitative and quantitative data. The identity of the elements and the nature of the constructs may provide qualitative information while the relationship between the construct and elements may be interpreted as quantitative data. However, the information in a grid clearly depends on only the elements and constructs that have been included. (p. 68)

This study used 16 constructs drawing on Kegan’s (1982) theory and its associated SOI assessment measure which itself is based on interpretation of participants attitudes to Authority, Responsibility, Conflict, Ambiguity and Paradox in terms of understanding how these attitudes relate to an individual’s perspective taking and relationship to their own responsibility in terms of distinctions of different stages of mind inside Kegan’s (1982) theory.

The constructs supplied inside the grid were a representation of these five attitudinal concepts drawing on Kegan and Lahey’s (2009) mental complexity model of the three primary levels of consciousness related to leadership as a developmental process as illustrated in Figure 6.

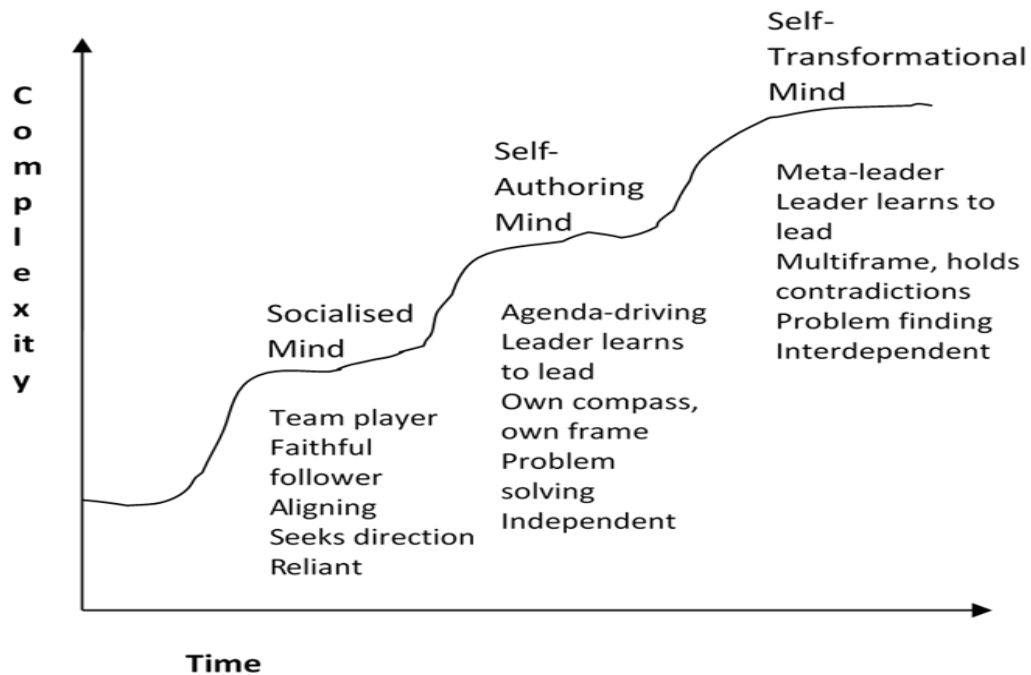


Figure 6: Three plateaus in adult mental development. (Source: Kegan and Lahey, 2009, p.16, fig 1-4).

The various concepts used for each level within this model were adapted and applied inside the grid as constructs presented as bipolarity of meaning making against six elements of the self both as an individual and as an organisational self.

Pope and Denicolo (2001) outlined how in Kelly 'constructs are linked with each other in a hierarchical manner' and state:

The organisation of constructs at any moment in time exerts a limit beyond which it is impossible for a person to perceive and thus the organisation of the constructs has a controlling influence on behaviour. Kelly noted the importance of eliciting more than one construct or dimension. (p. 67)

Furthermore, Pope and Denicolo (2001) described how Kelly noted the importance of eliciting more than one construct or dimension when he wrote:

An event seen only in terms of its placement on one dimension is scarcely more than mere datum. And about all you can do with a datum is just let it sit on its own continuum. But as an event finds its place in terms of many dimensions of consideration, it develops psychological character and uniqueness. (p.67)

The distinct idea of transitions within subject-object theory and the equal idea of different dimensions of meaning making across the grid both aligned with and helped to provide insights the author of this study suggested into some of the inter-relationships in the sense making of the executive leaders LOC as an expression of their own leadership in the interior of themselves and in the exterior of their organisations as they perceived and internalised as an LOC.

With this understanding of purpose, intention and theory underwriting the use of the repertory technique, the grid was designed as a perceptual matrix for use in this study and provided the basis of the first set of interviews which were recorded, transcribed, and analysed using SOI (Lahey et al. 1988) measures (Figure 7).

Range: Max 5 Rate from 5 to 1		Laddering ?		Specialised / 1-2-3 Self-Authored 4 Self- Transformative 5		Socialised /1-2-3 Self-Authored 4 Self- Transformative 5	
Construct Object/Autonomy		Min 1 Construct Subject/Inclusion					
Variable		Myself Now	Myself 3 years <u>ago</u>	My Organisation now	My Organisation 3 years <u>ago</u>	My Ideal Self	Ideal Oranisation
Dimension of Meaning		Dimension of Meaning					
Independent thinker							Faithful follower who seeks Direction
Interdependent							Aligns with group Consensus
Set the agenda							Seeks approval for the agenda solution
Problem Solver							Problem solver within organisational present
Problem Finder							Team Player
Ambiguity							Uncomfortable with Uncertainty
Hold Multiple							Holds to own beliefs and ideologies
Open and Curious							Rigid and closed
Can take Responsibility							Externalises responsibility
Authority							Externalises to authority
Manages Conflict well							Torn in Conflict situation, cannot decide
Delegate							Control
Empower							Hold on/hold back reins
Technical Leadership							Adaptive Leadership
Voice and Act on Values							Subject to the Organisational values/culture
Learn to Lead							Leads to Learn
				Perhaps?			

Socialised / 1-2-3	Laddering Which pole would do you describe yourself as?	Implications Why do you prefer this pole rather than the other?	Link to hidden commitment What are the advantages of this side in contrast to the disadvantages of that side as you see it?	Why is it important for you be ...?

3.7.1 Conducting the Repertory Grid Interview

The purpose of the grid as a perceptual matrix is for the individual executive leader to rate themselves and their LOC inside subject-object constructs both at the individual level and the level of their organisation as the discriminating focus of their evaluative polarity of the constructs as a dimension of meaning across the six elements. This grid was the basis of the first set of interviews based on asking the question to what extent each of the constructs applied to each executive leader within the six elements.

The design of the grid gives the executive leaders an x-ray view into their own LOC and supplies a numerical visualisation tool using the five forms of consciousness of Kegan's (1982) theory as a focus for the structured interview as the individual executive leader respond to questions on the elements and constructs as reflections of their LOC.

They were asked to use the numbers 1—5 within the different constructs and across the different elements as dimensions of meaning when addressing each of the various constructs against each of the elements. The numbers 1, 2 were incorporated inside the grid as part of the Socialised mind (3) though allowing for 1 and 2 to be differentiated by the author through the transcripts of the executive leaders meaning making of the numbers. The numbers 1 and 2 are not generally associated with leadership because of their cognitive perspectives. The exception to this is Kuhnert and Lewis (1987) in terms of their analysis of transactional and transformational leadership and constructive development theory. Kuhnert and Lewis (1987) pointed out that leaders at stage 2 only have the capacity to work out of the transactional leadership style, as an instrumental level of cognitive development has not 'developed the organizing processes (subject) necessary for understanding or participating in mutual experiences and shared perceptions. Leaders at this stage do not have the capacity to reflect on their agendas. They are their agendas' (p.652).

The rating provides a quantitative route map that helps the executive leaders assign numbers as an overall meaning point in their sense making of a particular construct and element both at the individual and the organisational level. This quantitative data is then underwritten by the qualitative data that is used from the transcripts of the grid interviews to get behind the sense making of the assigned numbers by the individual executive

leaders to understand how they are making meaning within Kegan's (1982) subject-object theory by the author who then ascribes an overall score from this data.

The author followed the principles of conducting the repertory grid by allowing for a 'laddering' approach which is a where the interviewee is probed further on their meaning-making. This is particularly useful for superordinate constructs which are understood as more abstract constructions of the mind. The author also asked each executive using the bipolarity of the nature of the repertory grid which pole they preferred to describe themselves as and why their preferences were important to them.

This allowed for insights into their perceptual schema as unconscious bias or cognitive bias as 'hidden competing commitments' or equally the 'hidden curriculum' of their organisation and or both variables perhaps operating as to which construct expressed as a number inside the different elements, they perceived themselves. This was useful for the analysis of the data from the grid when the numerical data (QUAN) was used with the narratives from the transcripts (QUAL) to interpret the numbers, using the SOI principles of interpretation and associated scoring of same by the author.

The numerical basis of the repertory grid as an interview tool enabled a pattern to emerge in terms of the spread of numbers and a capacity to see patterns of both individual and organisational constructs together with distinctions and disparities across the mapping of the forms of mind as the executive leaders identified them. The transcripts in turn from the interviews deepened the capacity for interpretation and understanding of the individual executive leader's scoring of their own perceptual sense making of their leadership and their sense making of their organisation's leadership inside the repertory grid.

3.7.2 Analysis of the Repertory Grid Interviews

The researcher of this study had initially sought to analyse the grid interviews using R software which is associated with the analysis of the repertory grid. The R software works on the principle of analysing the data of the grids through using principal component analysis and cluster analysis and presenting the profiles through different charts such as bi-plots and diagrams. However, on reviewing the data, the author noted discrepancies in

the sense making of the data and in particular numbers seemed to reverse. The author sought clarification on this with the analyst who advised that there was a coding error in the R Software package causing the reversal of the charts.

On that basis, the author deduced that this approach and the data emerging was not reliable (see Appendix C for copy of the report) and chose to do the analysis manually noting the observations of Fransella, Bell and Bannister (2004, p.111) citing (Higginbotham and Bannister, 1983) in terms of using computer packages stated as follows:

If a standard computer program processes the subject's grid to yield 'loadings on components' or 'element distances', then, if such is truly the focus of your psychological interest, all is well. If you proceed to centre your argument upon such measures because *they are yielded by the computer program* and not because they are central to theoretical issues which are at stake for you, then all is not well. Your argument should tell you what to count; your counting method must not be allowed to dictate your argument (p.2)

Correspondingly, the unit of analysis in a repertory grid is always the construct and when analysing the interviews, the author was able to focus on the subsystem of the structure underwriting the content of the executive leader's narratives of their interviews as to their choice of different numbers for different constructs relevant to different elements using the coding principles of the SOI (Lahey et al.1988). These were used not in terms of measurement or assessment but as a means of identifying the perceptual LOC of the executive leader and the nature of its relationship within the context of their organisation. While the orders/stages of development reflect the internal aspect of the executive leaders in Kegan's (1982) subject-object theory, the interdependency of its external aspect is reflected in the notion of the holding environment (Kegan, 1982).

The use of both qualitative and quantitative data was used to help illuminate the LOC that is operating for the executive leader behind their perception of their own LOC and the role of the holding environment of the organisation on that meaning making being the focus of the grid interviews. In doing eyeball analysis of a single grid, one is looking at the patterns in the grid in terms of identifying constructs and elements that are most similar and different at the individual level and organisational level and working through these in a discursive way in terms of exploring and examining what these numbers are reflecting about the subject's LOC.

This was followed by the author's scoring of the grid using the principles of the SOI drawing on the qualitative data from the interview transcripts and an associated discussion of the reasons and evidence for the scoring of LOC in terms of how the executive leader is making meaning. In the context of Kegan's (1982) theory, the author is looking at the structure behind the content of what is being said and identifying at least three pieces of information that illustrate the finding or evidence for an identified LOC drawing on the same process as the SOI used in measuring qualitative data in quantitative terms from interview transcripts and outlined in the section earlier on analysing the SOI.

Equally the analysis of the repertory grid set of interviews drew on Kegan's (1982) point that the movement itself is as important as an end score in the sense that 'development' is a transition between a centre of gravity that is presently dominating one's meaning making as another may be simultaneously seeking to emerge or perhaps being let go of within the dynamics of developmental movement of the form of mind.

3.8 Case Studies Selection

The purpose of this study was to understand something that is almost invisible (Berger-Garvey, 2012), the way individual executive leader's characterise their own leadership experience as a LOC inside their organisations holding environment (Kegan, 1982). This developmental insight has the capacity and potential for new LOC to be supported inside organisations. Therefore, new constructs of leadership individually and collectively for both organisation actors and social organisation systems such as work organisations could emerge, which is the call of 21st century leadership.

In this context, the intention of this study was to gain insight into what is happening in the developmental stages of LOC of individual executive leaders and constructs of leadership as self-complexity inside the holding environments of corporate organisations. Drawing on Creswell's (2012) idea that the goal of case study research is to rely on the participant's experience and the interpretation of their experiences as much as possible and further to Kegan's (1982) point that there is more than one holding environment but a succession of holding environments, the author sought a cross-section of different executive leaders from different organisations for the study. Furthermore, given the exploratory meaning-based nature of the study, the author wanted to have enough

participants to look for both possible patterns and distinctions but few enough so that personal meaning-making could be explored in depth. Indeed, the goal of this research was to look carefully at individual leaders meaning-making as an LOC within and across the cauldron of different organisational contexts in terms of their organisational models of stage development (Laloux, 2014) to allow for patterns, anomalies, and insight.

Initially, seven executives across seven different organisations agreed to participate in the study, with one dropping out due to extenuating circumstances. In this regard, the study was conducted across six organisations with six executive leaders. These participants are between the age range of 35 to 45 years old. This age range was carefully selected as, according to McCauley et al. (2006), they are most likely to be focused on a career trajectory within their organisations in that time frame and have leadership experience in the broader holding environments of their worlds. The organisations involved are national and international organisations from both public, private, and service-based sectors such as the financial sector, pharmaceutical, information technology and tourism sectors.

Once the cases were selected, the first set of repertory grid interviews was conducted, followed two years later, with the second set of SOIs. This time and distance between the two sets of interviews allowed for any changes arising in LOC and exploration of what may have either enabled or inhibited movement in a new LOC. In the time between the two interviews, all participants moved into more senior roles, and two moved into new organisations from the first set of repertory grid interviews. Indeed, Kegan and Lahey (2009) identify time as an essential factor in developing the three levels of mind within mental complexity and the various stages within these levels influencing changes in behaviour reflecting these movements as a LOC. This perspective resonates with Day et al. (2014), who also suggest that of itself, the nature of studying leadership development ‘involves mapping and understanding within and between-person change patterns...over time’ (p.65).

3.9 Ethical considerations

There was an assurance of confidentiality and anonymity given to all the participants, with all persons and organisations names removed from the interview transcripts. The names of the participants and their organisations have been anonymised for this purpose.

Furthermore, it was also agreed that the interview transcripts would only be used for this study and would not be publicly available. A further consideration for the ethics involved in this research was the sense of trust and integrity between the participants and the interviewer.

This enabled a sense of moving beyond people feeling there was a right or wrong answer, but rather enough space married to levels of trust to enable the interviews to be an experience that people enjoyed as well as learning from doing of the interview as a useful insight and visioning process for the participants themselves.

3.10 Limitations of the Study

While various research methods were used in the study, there are also acknowledged limitations that may affect the interpretation of the results of the study. The focus of constructive developmental theory is on complexity and perspective-taking. It is not a theory of intelligence, nor does it focus on groups (although there is much to be learned from group interactions by understanding the meaning-making of individuals).

The focus of this study is not on leadership and performance outcomes in the first instance but on what is happening in the developmental process itself within individual leaders in terms of LOC as expressions of leadership within contexts of their organisations holding environments and conceptualised within the subject-object theory of Kegan (1982, 1994). In this respect, the criterion of intent of this research study is developmental rather than leader performance, a distinction made by (Day, Harrison, Halpin, 2009, p. 35) in exploring and advocating for a different focus of leadership research with adult development theory.

In this context, equally, it draws on Hesling and Howell's (2014) observation that while there is evidence of the effectiveness of higher levels of mental complexity on performance, it is not yet clear how to use that understanding. Bugenhagen and Barbuto (2012, p. 39) outlined how research has found a relationship between third and fourth orders of mind and transformational leadership, for example, in a PhD study conducted by Benay (1997). In the Benay (1997) study, the author explored whether the defining features of transformational leaders imply or infer a specific meaning-making system that is cognitively different from those of transactional leaders. She explored this by doing interviews within the one organisation of 8 executives drawing on Kegan's (1982, 1994)

conceptual framework and the SOI to discover more about how leaders make sense and understand their position in an organisation. Two recent dissertations used in educational environments also used a case study design and a constructive developmental theoretical approach. One thesis completed in Harvard Graduate School of Education is of two school Principals and four teachers (Lippard, 2014). Lippard's (2014) thesis explored the two Principals efforts to support instructional improvement among teachers whose 'ways of knowing' differ. His case study was based on two Principals and four teachers in two different schools. He hired an SOI administrator to conduct SOI interviews with the participants while he conducted two further qualitative interviews with the principals and the teachers to form the basis of the data and one observation in the classroom of the teachers in focus.

Another SOI study is of one Principal and four teachers (Nikolaou, 2015) and was based on a constructive- development case study of a principal's sense-making experience of professional development. The purpose of the study was to uncover, through a leader development model, how one principal makes meaning of his experiences as an instructional leader in leading professional development among his staff in an elementary school. Again, a case study method was used with a single principal and a purposeful sample of teachers in the school and had a maximum of 5 people in total in the study with the focus on the principal.

This study uses six case studies and is equal in number as a PhD thesis to those referenced above, and perhaps it is posited more than equalled through the depth and breadth of the six case study organisations. Furthermore, to maintain the integrity of this research and the anonymity of the research participants, the author of this study went to the US to train in conducting and administering the SOI and invested time to take the exam to become qualified to score the interviews herself and in this case as with the studies above did not require third party assistance. The study did then also have another SOI qualified scorer to be the second scorer of the SOI set of interviews.

The author also developed the instrument for the perceptual matrix used to conduct the first set of interviews. This perceptual matrix drew on Laloux's (2014) research that the leadership of an organisation is reflected in the stage of development of its leaders. It is suggested that the design and use of this matrix was an effective tool anchored in Kelly's (1955) personal construct theory together with Kegan's (1982) theory to access the

organisations leadership forms of mind as conceptualised and perceived as reflections of LOC of the individual executive leaders and the holding environments of their organisations. However, given that the author created it for the particular purpose of this study to access whole systems meaning making as an LOC individually and collectively, it could be subject to bias in its scoring, but equally the use of the SOI principles to score it may balance this potential limitation.

McCauley et al. (2019) also noted that there has been limited research examining organisation and leadership development through a constructive developmental lens. Furthermore, small numbers are not unusual as McCauley et al. (2006) noted that the studies which are based on Kegan or Loevinger/Torbert frameworks have for the most part utilized small samples while only a few have sample sizes larger than thirty.

The small sample sizes are likely driven by the complexity of the measures of developmental order. The Subject-Object Interview and the WUSCT or LDP require training to achieve acceptable levels of reliability and are labour intensive to use. Many of the studies were also dissertations conducted by students, who typically have limited resources and time to devote to data collection (McCauley et al. 2006, p.648).

Indeed Berger Garvey (2012) argues that it takes quite a lot of time and practice to become proficient in both using the SOI and analysing the data arising from the interviews. While the numbers may be small, the author proposes that they are both in line with and more in depth than previous PhD studies given the complexity of the theory and its measurement as outlined by Berger -Garvey (2012).

A significant limitation of the study is possibly the age range of the participants between 35—45 years old. Within Kegan's (1982) theory, it is within this age range where the capacity for evidence of a self-authored mind becomes more possible although 58% of people measured to date have not moved beyond the socialised LOC (Kegan and Lahey, 2009). However equally outlined in the theory of Kegan's and Lahey's (2009) mental complexity is that one can have for example a group of individuals at the same chronological age of thirty years old and within that grouping, some may have moved to self-authored LOC, some maybe in socialised LOC, others maybe in transition between a socialised and self-authored LOC and some may be 5th order LOC although that order of mind would be rare. However, regarding this paradoxical expectation as well as limitation of age on LOC, Berger-Garvey (2012) pointed out that finding 5th order transformative mind is unlikely inside organisations because either the organisational

model has not evolved to enable that LOC to grow and thrive and equally individuals who are making meaning at the 5th order are likely to feel constrained and leave the organisation. Garvey-Berger (2012) suggested that ‘to hold on these leaders and use their strengths, organisations need to develop new ways of thinking about leadership’. (p.47) and again stated ‘that as the world becomes more complex, the complexity of the self-transforming mind is going to be pivotal inside organisations’ (Garvey-Berger 2012, p.47).

Given the Covid 19 global pandemic and its impact on social organising in work organisations and the ongoing yet to be realised impact of same, it could be argued as Kegan (2020) does, that the crisis of the pandemic may open an opportunity for a new significant shift in consciousness. If that indeed happens, then in Kegan’s (1982) theory, there would be an individual and collective opportunity to transcend the self-authored form of mind to the 5th order form of mind. Correspondingly if such potential is realised, then there is likely to be more 5th order leaders in positions of power in organisations that can develop new models of leading as models of care to address the complex problems that the limit of self-authored models is unable to solve, such as poverty and social justice.

Against these changes in work organisations and the challenges of leadership theory and practice within them, the study is limited to a moment in time, and given the developmental nature of the study, it would be beneficial to revisit these organisations and the executive leaders to identify any changes in LOC of their leadership and their holding environment. Further research studies extending to a broader number of participants and with more diverse organisations inclusive of a cross diagonal slice of different age groups of leaders in an organisation would also help address these limitations.

3.11 Conclusion

This chapter described the research design and methodology used in the study. It opened with an overview of the intellectual roots of pragmatism which in turn was linked to the research methodology of pragmatism adopted in the study. This provided the foundation for linking the epistemology of the conceptual framework of Kegan’s (1982, 1994) constructive developmental theory used to drive the inquiry with the alternative pragmatist paradigm of Morgan, s (2007) research methodology. The case study selection

was contextualised with the number of organisations and the executive leaders in the study. There was a detailed description of the SOI, and the central design measure of Kegan's (1982) theory was then provided. This was followed by a detailed overview of the design of the repertory grid and the underwriting principles of subject-object protocols as adapted into a perceptual matrix used to measure the scoring of the grids in terms of LOC inside Kegan's five forms of mind.

Finally, ethical considerations and limitations of the research were discussed. The methodological approach described in this chapter formed the basis for the research findings and the discussion of research findings outlined in the next chapter.

CHAPTER 4

PRESENTATION AND ANALYSIS OF FINDINGS

4.1 Introduction

This chapter presents the results derived from the Repertory Grid interviews and the SOI interviews for the six case studies. As previously stated, the emphasis in constructive developmental theory (Kegan, 1982, 1994; Kegan and Lahey, 2009) is on understanding people's ways of knowing and the cases are analysed, allowing for how each participant involved in the study understands their form of mind inside the content of the data in the interviews.

As each case is unique in identifying the underlying meaning of running the structure of the mind as presented by the executive leader (EL), the analysis focuses on those aspects of the interviews that best illuminates the overall structure of the executive leader in focus.

For each case, the first section is based on the data from the Repertory Grid which starts with an eyeball analysis of the QUAN data from the grid as a perceptual matrix. This includes identifying highest and lowest constructs informed by related QUAL data.

Leading on from this, the penultimate section of each case provides an analysis of the SOI interviews to illuminate the EL form of mind with a discussion of both sets of data presenting LOC from the interviews. Finally, the last section of each case applies Laloux's (2014) stages of organisational models to triangulate the preceding stages of the analysis.

The cases are named for transcript purposes as Executive Leader 1 formulated as for example, EL1, with the number of the page of extracts from the transcript of the interview after it as EL1/10.

4.2 Case One: Organisational Context and Executive Profile

Case one is a financial organisation and deals with legacy issues surrounding a lack of consumer trust in financial institutions. Its overarching mission statement is to rebuild trust in the financial sector. This of itself is an important context in understanding the nature of the holding environment inside financial institutions evident in the organisations sense of self in some of the emergent data from the interviews of this executive leader.

The EL (EL1) in this organisation was a senior leader of a department within the organisation in the first set of repertory grid interviews responsible for thirty finance professionals. In the follow up SOI interviews, EL1 had been promoted to the position of senior Group Executive within the same organisation. EL1 was a trained accountant and had risen through the ranks of the organisation from his early career.

4.2.1 Repertory Grid Eyeball Analysis

As can be seen from (table 4.1) the most striking visualisation of the numerical data in this grid is the consistency of lower numbers across all three elements of the organisation three years ago, the organisation now and the ideal organisation. While the numbers under the ideal organisation for all sixteen constructs get higher, they are still on the lower end of the scale of LOC. The second striking visual is that these organisational numbers are consistently less in LOC than EL1 perceives his own LOC which is thought provoking in terms of exploring the role of the holding environment on the EL1s own LOC.

Also of note is that EL1 did not identify the 5th LOC as their ideal LOC or as his present LOC for himself or his organisation under any of the constructs. This maybe a function as stated by Kegan and Lahey (2016) that only 11 % of adults from a meta-analysis study in the US are making meaning from a 5th LOC. This is an increase from between 3% to 5% of a previous meta-analysis in 1994 which Drago-Severson (2016) suggests is a response to the more complex challenges faced in today's world and more particularly in terms of the need for more internal capacities to address inequity and social justice.

However, in terms of organisations, Berger-Garvey (2012) suggests that one is not likely to find a 5th LOC inside work organisations. This is based on two factors, with one being that the model of organisation itself does not enable the growth of people into 5th order forms of mind while equally so, people who are in those forms of mind may feel constrained and leave the organisation.

	Variables						
	M y s e lf N o w	M y s e lf T h r e e Y e a r s A g o	M y I d e a l S e lf	M y O wn O r g a n i s a t i o n A g o	M y O r g a n i s a t i o n A g o	M o d e l O r g a n i s a t i o n	
Level Five Dimension of Meaning							Level One Dimension of Meaning
Independent Thinker	4	2.5	4.5	1.5	3	3	Faithful Follower who seeks Direction
Interdependent Thinker	4	3	4.5	1.5	2.5	3	Aligns with own Tribe Consensus
Sets Agenda	3.5	3	4.5	1.5	2.5	3	Seeks Approval for Agenda/Solution
Problem Solver	2	1	4	3	2	2.5	Standard Solutions Applied
Problem Finder	3	3	3	1	1.5	2	Team Player
Comfortable with Ambiguity	3	2	3.5	1.5	1.5	2	Uncomfortable with Uncertainty
Holds Multiple Perspectives	3	2	3.5	1.5	1.5	3	Holds to own Beliefs and Ideologies
Open and Curious	3.5	2.5	4	1.5	2	3	Rigid and closed
Can Take Responsibility within Relationships	4	3	4	1.5	2.5	3	Externalises to Responsibility
Internalises own Authority	3.5	3	4	1.5	2.5	3	Externalises to Authority
Manages Conflict Well	3	2.5	4	1	2	3	Torn in Conflict Situations (Can't Decide)
Delegates	3	2	4	1.5	2	3	Controls
Empowers	3	2	4	1.5	2	3	Holds on / Holds back the Reins
Adaptive Leadership	3	2	4	1	1.5	2.5	Technical Leadership
Can Voice and Act on own Values	4	3	4	1.5	2	3	Subject to Organisational Values/Culture
Leads to Learn	2	2	3.5	1.5	1.5	2.5	Learns to Lead

Table 4.1: Case 1: Repertory Grid Eyeball Summary Analysis

Furthermore, Laloux (2014) argues that the stage of development of an organisation is the developmental stage of its leaders and by implication in this context, there is no leadership at a 5th LOC in this organisation from the perceptual lens of this leader.

The third striking visual identified by EL1 as he concluded the interview relates to the number of gaps in the numbers for his own LOC *now* and his *ideal* LOC throughout the different constructs by looking only at the visual data of his perceptual matrix which he suggested is a useful insight in awareness in and of itself.

And for me the initial reflection is for me that there is more work to be done from my perspective because there are gaps most of the way down, almost all the way down in fact. And I have always believed, and I still believe, one of my beliefs is that life is a journey, and you must improve as you go along that journey. But for sure this is a useful stop to measure where you are at and there is more of the journey to go. (EL1/14)

This perspective resonates with Berger-Garvey (2012) who noted that the exercise of doing these types of developmental interviews can often be experienced by interviewees as a developmental value stating that ‘Interviewees tend to experience the conversation itself as incredibly helpful to them, because they think in new ways about an old problem’ (p.51). This insight is also echoed by Hesling and Howell (2014) who suggest that the developmental movement that underwrites any given ‘score’ of an LOC is as important than the actual LOC presently dominating as the centre of gravity of an individual’s meaning making.

Notwithstanding the possible influencing factors on the distinctions of EL1s scoring, it would appear from these patterns alone that this EL is operating an LOC in himself beyond how he perceived the overall leadership LOC of the organisation. In this context, McNamara (2013) notes that people can have a sophisticated language around their own development that might appear like a higher LOC but in fact when you listen to the underlying structure running their meaning making, they may be still operating from a different LOC than that in which they have expressed. This may be the case for EL1, however in agreement with Kegan (1982) to validate this claim it is necessary to use the qualitative data and its interpretation derived from the protocols of the SOI to establish more clearly what LOC EL1 is operating at.

4.2.1.1 *Comparison of Highest order Constructs for Self and Organisation*

In terms of highest order constructs for self and organisation (table 4.2), the fact that the ideal self remains the same for two of these constructs (2 and 3) can be seen as a function that for EL1, he is already where he needed to be metaphorically driving the car (self-authored) as opposed to thinking or having a capacity to think beyond this LOC to multiple

perspectives evidenced in a 5th order LOC and to continue the metaphor to be changing the route of the car or the design of it in itself (Kegan , 1982, 1994).

Highest Constructs	Self as Elements	Organisation Comparison
1. Independent thinker versus faithful follower who sets direction	- Self Now: 4 - Ideal Self: 4.5 - Self three years ago: 3	- Organisation Now: 3 - Ideal Organisation: 3 - Organisation three years ago: 1.5
2. Can take responsibility within relationships versus externalises responsibility	- Self Now: 4 - Ideal Self: 4 - Self three years ago: 3	- Organisation Now: 1.5 - Ideal Organisation: 2.5 - Organisation three years ago: 3
3. Can voice and act on own values versus subject to the organisational culture and values	- Self Now: 4 - Ideal Self: 4 - Self three years ago: 3	- Organisation Now: 2 - Ideal Organisation: 3 - Organisation three years ago: 1.5

Table 4.2: EL1 Comparison of Self and Organisation Highest Constructs

This may also be a function that EL1 is part of the 20% to 30% of adults who according to Petrie (2014) make meaning from self-authored LOC. Furthermore, as (McCauley et al. 2006) argue, self-authoring leaders are more likely to be enacting leadership effectively in the modern organisation and therefore, EL1 may perceive this to be the case in terms of his successful progression to date in the organisation.

However, EL1s scoring may also be a question of ‘being in over his head’ (Kegan, 1994) in that he simply has not yet reached the 5th LOC inside the holding environment of his organisation. He scored the organisation lower in ideal self across all the constructs and his meaning making of these scores as described by him through the interview are anchored inside the idea of the Market ideology which he is either fused or aligned with. The fusion would represent being subject to it whereas a self-authored would be looking at it and from there either aligning itself with it or not. In this regard one of the limits of the 4th LOC, both at an individual and organisational level, is for EL1 to believe that his own self authoring is the only authoring. In that sense, this limits the capacity to move beyond its own system of thinking to potential for other systems to emerge in terms of LOC that would lead to more expansive forms of mind in terms of complexity in its overall sense making (Conner, 2010).

However, overall, the differentials in the scoring between his ideal self and the organisation as ideal self across these constructs would suggest that his meaning making is a 3/4. This scoring is evident in relation to the third construct when EL1 is discussing voicing his values as distinct from the organisation values, where he stated that he has his own values and beliefs and while he welcomed them being challenged, they were not always changed and, in this sense, shows a 4th LOC. However, he subsequently stated that his values did not

conflict with the organisation's values and are in fact aligned Therefore, taken these constructs together there is no conflict for him or in him as regard these differences in the scoring between his ideal self and his ideal organisation and therefore in subject-object terms (Kegan, 1982), he is not experiencing any dis-equilibrium or any kind of optimal conflict to suggest any need to move in LOC which suggests that he is operating as a 3 /4 LOC. The socialised LOC is dominating as there is no reflection evident as to the operating assumptions of the organisation being evaluated in any way and then aligned as it were but rather perceived as a normative given ideology as it were inside EL1s mindset.

4.2.1.2 Comparison of Lowest Constructs for Self and Organisation

The lowest constructs for ELI in (table 4.3) reflected his distinction between his own ideal self LOC being higher across the three constructs than for his ideal organisation. These differentials in the numbers are a function of the distinction he made between the need for certainty as a function of the Market and his interpretation of these constructs within that ideology. Simultaneously he showed a wish to grow in these constructs reflected in his numbers for his ideal self from where he is now, and it is these types of apparent anomalies that can help gain insight into EL1s form of mind by deconstructing further his meaning making inside each of these constructs.

Lowest Constructs	Self as Elements	Organisation Comparison
1. Problem solver versus standard solutions applied	- Self Now: 2 - Ideal Self: 4 - Self three years ago: 1	- Organisation Now: 3 - Ideal Organisation: 2.5 - Organisation three years ago: 3
2. Comfortable with ambiguity versus uncomfortable with ambiguity	- Self Now: 1.5 - Ideal Self: 3.5 - Self three years ago: 1	- Organisation Now: 1.5 - Ideal Organisation: 2.5 - Organisation three years ago: 1.5
3. Lead to learn versus learn to lead	- Self Now: 2 - Ideal Self: 3.5 - Self three years ago: 1	- Organisation Now: 1.5 - Ideal Organisation: 2.5 - Organisation three years ago: 1.5

Table 4.3: EL1 Comparison of Self and Organisation Lowest Constructs

4.2.1.3. Problem Solver versus Standard solutions applied

The dimension of meaning making within this construct is a choice between applying standard solutions in the sense of already standardised ways of solving problems in comparison to being someone who is opened to reviewing standard acceptable ways of solving given problems. The distinction between EL1s scoring of this construct of ideal organisation at a lower score of 2.5 than his own ideal self is a function of being interpreted by EL1 in terms of the world of accounting that his organisation inhabits which must apply

standard solutions in an accounting sense rather than focusing on this construct in a people sense. This construct is where EL1 wished to make a significant leap to self-authored LOC in terms of his tendency to default to standardised solutions which he described ‘as an overpowering driver of my thought and process’ (EL1/3).

EL1 further stated that:

I think I can set the agenda if you look back to the previous question, create different possibilities that’s for sure in terms of the existing issues. Now in terms of let’s say the people type of issues I would typically be creating a different possibility or agenda but once we have got possibility, it’s to then apply that in a standard way. (EL1/4)

This overpowering driver as he described it of his thought and process is further illuminated and understood in the next construct which helps give insight into the conflicted demands for EL1 within these constructs in himself and within the holding environment of the organisation impacting in turn his LOC both in terms of capacity for mental complexity and choices within such capacity.

4.2.1.4 Comfortable with Ambiguity versus Uncomfortable with Uncertainty

EL1s scoring and the difference in the numbers for individual ideal self and organisational ideal self may be accounted for again by the distinction that EL1 has made in his interpretation of the nature of the financial services and the need to have certainty in terms of numbers. Further, EL1 expressed a need to grow inside this construct irrespective of the need of the organisation to remain unambiguous in terms of a focus on the numbers versus his own capacity to be able to handle ambiguity better beyond just numbers. In this regard, EL1 further described how as a personal trait he is uncomfortable with uncertainty and ambiguity which in turn has a significant influence in the way that he thinks about issues and while he would like to be more comfortable with ambiguity it ‘is difficult to overcome a lifetime of structure’ (EL1/8). Further to this point EL1 also stated the following:

It influences my willingness to put myself into types of roles and that to date has been a positive because I have succeeded within that. But when you look to the next role it’s much more uncertain and therefore you know if you have got a life of certainty and you are moving to uncertainty it becomes a challenge. In terms of the organisation, it is uncomfortable with uncertainty and in an ideal world it should be more comfortable with it. It is driven by external factors a lot of it, the market does not like uncertainty and as a result the organisation does not like uncertainty. (EL1/8)

In this context it is apparent that EL1 in terms of his own agency wished to move into new levels of comfort in managing ambiguity which would enable in the first instance a capacity for movement into 5th LOC which he regarded as necessary for his next leadership role in his organisation.

Correspondingly within the subject-object measures, EL1 is exhibiting a socialised mindset which looks to and is influenced by the external authority for its decision making (Kegan and Lahey, 2009) signified here as the holding environment and is operating in this regard as the motivation force for EL1. Paradoxically EL1s drive for an 5th LOC for a potential next leadership role is within an organisation holding environment that is described by EL1 as needing certainty within the implicit assumptions underwriting the organisational model itself.

In this regard the living contradiction is that while EL1 may wish to grow into a new LOC in this construct, he is also limited within the underlying meaning making running the structures of the organisation. This structure, in turn, reflects the deep social structures the organisation itself lives within. This perspective resonates with Foucault (1980) in terms of the agency -structure dichotomies of managing micro levels of power at the subjective level within the broader objective structures and systems of meaning making that have evolved in society in terms of ideology, religion, politics, economics (Bratton, 2015) and in this case the Market. In this sense there is a meeting of two worlds for EL1 of a self which is making meaning within its own perceptual world and within and to its cultural world of the organisation (Benson, 2001) enfolded in subject-object terms of a 3 /4 LOC.

In leadership constructs this type of duality between subject-object within the individual self and the other as the organisation reflects Hosking's (1988, 2007) view that there is a need for a focus in leadership research on the relational processes in which social order is negotiated and less of a focus on individual leaders in terms of behaviours and traits emphasising the construction of leadership as local and culturally historically situated. Correspondingly, Day and Antonakis (2012) state how necessary it is to understand the contextual factors that leadership is embedded in as essential to advancing a more general understanding of leadership.

In terms of accessing the structure running EL1s meaning making, one could argue that his intention to develop these capacities are perceived by him as necessary to progress in the organisation line of leadership and in this context is operating from a socialised LOC. Further while the organisation may be proposing a capacity to manage ambiguity as an important innovative way of demonstrating leadership, it hasn't in fact reached this stage of development itself from the numbers identified by EL1 on the grid for the organisation and as Kegan (1994) would put it, is possibly 'in over its head'. This wish to be more comfortable with ambiguity could be interpreted as a self-authored LOC, but the question arises on what or on whose behalf is this wish to be more comfortable with uncertainty?

For example, if an organisation is to be truly comfortable with ambiguity, it would need to be operating from a 5th LOC where paradox and contradictions are welcomed (Kegan, 1994) whereas in this case, EL1 stated the need of the organisation and the Market for certainty. According to Kjellstrom et al. (2020), from a managerial functionalist perspective, leadership research and practice is based on this certainty as an objective norm 'to increase efficiency and effectiveness (Alvesson and Spicer, 2012; Mabey, 2013).' (p.437). However, from a critical perspective, this need for the organisation to be comfortable with ambiguity and uncertainty can be based on the same managerial functionalist underlying assumptions of leadership development as part of the 'greater good' understood as increased performance and productivity of all workers (Kjellstrom et al.2020). In constructive development theory, the idea of such capacities of a 5th LOC is to have the capacity to look beyond any one ideology and see the capacity for multiple systems and for new systems to emerge as a function of the implicit transformation implied within this self-transformative mind.

EL1 gave some insight into this duality of focus and intention towards the end of the interview when he discussed further his idea of leadership and his own wish to grow within his meaning making of leadership based on the matrix. He was asked which side of the pole on the matrix he preferred, and his response clearly showed his own need to grow into the next role and level of leadership required to run the business mirrored within his own alignment with the organisation's meaning making system reflected in a 3/4 LOC.

So, these are all ways to grow beyond the first role of leadership if it is possible. I would argue it is possible to lead having been on the right-hand side however it's not possible to grow and lead to the next phases of leadership unless you move to the left side. It is important for me to be on the right-hand side because I want to grow in the leadership role, I believe that to me leadership is a critical part of

running the business or of the role that I am in and to sustain that and to grow within that, I must be on the left-hand side. It is almost an imperative. (EL1/15)

Here EL1 stated his own vision of leadership and the distinctions of the different types of leadership evidenced on the constructs on the right hand side as he referred to as a first role of leadership as opposed to a growth in leadership. In this context he showed aspects of a self-authored LOC as evidenced in his stated need to fulfil that vision.

However, he is heavily identified with the organisation's meaning making as a structure which reflects a more socialised LOC in terms of his loyalty to that with which he identifies which in this case is his organisation (Kegan Lahey, 2009).

4.2.1.5 *Leads to learn versus learns to lead*

In this construct, EL1 saw himself as a 2 on this construct and ideal self being a 3.5 with his organisation being a 1.5 and moving to a 2.5. Again, the distinction between the numbers appears to be linked to the nature of the financial services industry and ideas around needed compliance versus EL1s distinction of people issues and, in this construct, his own personal wish to move to a 3:5.

The idea behind this construct is that a leader who learns to lead is operating more from a present understanding of leadership theory and knowledge whereas a lead to learn is a person who wishes to embrace their own uncertainty and lack of knowing all the answers to an openness of mind in their approach to leadership. Leadership that leads to learn according to Kegan and Lahey (2009) shifts from problem solving to problem finding and is an approach that reflects deeper levels of self-awareness and skills needed and as Petrigleiri, Wood and Petriglieri (2011) argue, is necessary to face the leadership challenges of 21st century organisations. In relationship to EL1s scoring of his dimension of meaning making between lead to learn versus learn to lead, EL1 stated that 'it is a significant challenge for anybody. We always tend towards because of our culture and our background to learn to lead for sure. Yeah'. (EL1/20). Here EL1 is addressing the influence of the holding environment it is suggested in shaping how to lead in first instance which is a socialised LOC.

EL1 stated that there was no conflict between himself and the organisation in terms of culture or values so in this sense his constant reference point for his meaning making is his identity

with the organisation. Further while there are aspects throughout the interview, demonstrating a 4th order form of mind EL1 also seemed to consistently reference and adapt to the values and beliefs of the wider organisational environment for his meaning making and, in that sense, he is demonstrating a more dominant socialised LOC. If EL1 was operating fully from a self-authored LOC, he would more clearly show evidence of choosing what was valuable inside himself as opposed to appearing to simply adhere to the values of the organisation. Hesling and Howell (2014) suggest that a 3rd order LOC is best suited for organisational roles which are about representing the prevailing view of the constituency faithfully.

EL1 in this case is deemed from both the QUAN and QUAL data to be operating at a 3/4 LOC while he perceived his organisation operating at a 2/3 and would ideally prefer to see the organisation operating at a 3. In this regard, EL1 may also be an outlier in the sense that both his age and stage of career together within the context of the post financial crisis may all be factors in the differences in the numbers for himself and for the organisation. In fact, EL1 could be the type of new leader the organisation needs and as he stated, it would be interesting to see how he would score himself at different moments in time in terms of his own perception of the organisational environment as a key variable of his meaning making as a holding environment and perhaps his own position within it.

The next section provides an analysis of EL1s formal SOI to examine his form of mind as it presents in that moment in time using the transcript interviews to provide an overall interpretation of the SOI as well as a comparison with the Grid interview.

4.2.1.6 Subject-Object Interview Analysis

As can be seen in (table 4.4) EL1 shared his thoughts around doing a presentation to the Board of his organisation which because he had no direct relationship with as for example, he would have with other members of staff that he was regularly in contact with, created a sense of anxiety around his uncertainty in terms of ensuring that he both anticipated correctly and addressed the focus of the Board in the presentation. This discomfort with uncertainty echoed EL1s grid interview when he talked about always wanting to put structure around uncertainty and his wish to be more comfortable with ambiguity.

One of the stated aims for EL1 was to develop these capacities more in himself in his grid interview as he saw these type of capacities (constructs) as imperative in terms of leadership roles for the future. Yet equally one could argue the organisation will measure EL1 as he perceived it in the context of his capacity to focus in clear terms on exactly what they required. This it is suggested is an example of Kegan's (1994) 'in over their heads' concept where in this instance the organisation is perhaps requiring their leaders to demonstrate 5th LOC in terms of adapting and effectively responding to the broader complexities in the environment (Vincent et al.2015).

Transcript	LOC
So, from my own personal perspective, I am motivated by having clear targets. Giving a perception that those targets are not achieved or not achieved in the right way, therefore would not be a desirable result from my perspective, because I would set out to be clear in what the objective is and be clear in ensuring I deliver that. So, you know, my lack of interaction with them, gives a lack of clarity of that expectation and then a lack of ... So, whereas I have the interaction with the CFO is quite clear, he has a clear expectation. I have a clear objective to deliver to that expectation and I deliver it to that expectation. Because of the interactions with the board and with other senior committees is not as explicitly. It could potentially lead to that lack of clarity and therefore....	4/3
So recently I had to take ... There were several different proposals or options to account for a particular transactions but ultimately when analysed, there's only one correct way to do it. So typically, it's shades of grey, but on this occasion, where there are shades of grey, there's a right answer and there's a not so right answer. So, it's quite ... To come to the decision about what to do, is reasonably straight forward, because the integrity says you do the right answer, you take the right answer or the right path. Because if it is the right thing to do, it's always going to be the right thing to do.	4
It's doing the right thing in terms of whether to grant a career break to an individual. I decided to grant it and the decision was based on not just cost -benefit analysis to the organisation.... to think about not just the organisation, to think about the full ... The impact on the individual, the commitment of the individual to the organisation...	4

Table 4.4: Summary of EL1s overall SOI

However, as Kegan and Lahey (2009) outline, they have not yet developed or been prepared by the organisation for such an LOC as it is not yet there itself in its own LOC (Laloux, 2014). Correspondingly in this regard, as EL1 outlined in his grid interview, the organisation is operating between an instrumental (2) and socialised (3) form of mind. These distinctions by EL1 echo Kegan's (1982) idea of an evolving self that is in a continuous form of meaning making by being both embedded in the life surround whilst simultaneously negotiating this individuated self within that surround.

In the next transcript example, EL1 showed evidence of a clear 4th LOC in his discussion of deciding as to whether to grant a career leave to an employee. He was initially not going to

give it which shows 4th LOC in an ability to decide irrespective of whether it will disappoint others (Hesling and Howell, 2014) while also being willing to review this decision consulting further with others and then decided to grant the leave. In this instance, EL1s meaning making moved beyond a mere cost benefit analysis to the organisation of granting this leave to a sense of fairness to the employee who had a record of commitment to the organisation and his ultimate meaning making for his decision was that it ‘has a level of integrity in the decision’. This showed a capacity in EL1 to manage a conflict by reverting to his own internal value of integrity and to including the needs of the individual employee in this instance which are reflections of a 4th LOC way of knowing. Furthermore, from the outset of the interview EL1 described how his values and most importantly his value of integrity was what he resourced too when making decisions. In this regard, in the third example EL1 made a distinction that when dealing with complex transactions there can be a series of right answers and clearly wrong ones but deciding which is the right answer to go with is identified by him by the value of integrity demonstrating 4th LOC.

What is of note in this interview in comparison to his grid interview is that EL1 now clearly demonstrates a sense of *right* as he defines it, not only in organisational terms but within his own principles. This shows a shift in perspective and a clearer 4th LOC dominating by aligning with EL1s belief system, creating, and regulating his own boundaries on behalf of one’s internal values (Hesling and Howell, 2014). Furthermore, EL1 throws more light on his LOC in this wider organisational context towards the end of the interview.

Yeah, and just to finish out on success. So, once you have clarity on what you want to do and you have clarity on everyone else’s role and that leads to what we want to achieve on a day-to-day basis or a month-to-month basis, then delivery of that and achieving that is part of what drives me ...and its part of the measure of success that I put in place. And then from a personal perspective, leaving aside family and outside of work for the purpose of this interview, I measure personal success as achievement within the organisation in terms of position or in terms of team or in terms of team influence. And ability then to be able to lead a part of the organisation to achieve what the organisation wants to achieve (EL1/10)

The author scores EL1 4 (3) with vestiges of a socialised LOC still operating because while he is clearly demonstrating self-authored LOC, it is on behalf of the organisation and not under any review of its operating assumptions. He does not show any evidence of questioning the norms or purpose of the organisation as a system that could be part of many possible different systems so therefore there is no evidence of a 5th LOC. Rather he appears

to be embedded with the organisation as a system within which he is demonstrating a predominant self-authored form of mind.

4.2.2 Application of Laloux Stages of Organisation derived from SOI and LOC analysis

Kegan (2016) has described Laloux's (2014) Teal organisation representing 2nd tier consciousness in his framework as the nearest form in terms of organisational models to his concept of a 5th level self-transformative form of mind. In that context, it is suggested that Kegan's (1982) forms of mind can be equated with Laloux's (2014) Organisational paradigms (Table 2.6). It is important in this context to recall that (Laloux's, 2014) organisational models are based on describing dominant systems, structures and culture operating in an organisation which can help understand the worldview that the model stems from. Similar to Kegan's (1982) levels or forms of mind, the organisation clusters around a centre of gravity that defines most practices of the organisation. However, inside this centre of gravity, there can be different people operating from different stages and it doesn't mean everyone is operating all the time within a given dominant model of the framework. However, it does illustrate within this broader context how both the holding environment as a dominant model of meaning making can provide another lens into what can be shaping the LOC of people and in this context EL1 within his organisation.

In this regard *Conformist Amber* is reflective of a socialised LOC and *Achievement Orange* of a self-authored LOC both evident in the form of mind of EL1. The *Conformist Amber* model of organisation has its focus on rigorous processes which are operated with and through people and their decision making. Correspondingly this is where the issue of culture and context framing (Wolfe, 2010) in the deep structures of the holding environment over and above its operational practices can paradoxically become evident inside the meaning making structures of the LOC evident in the combination of these different models of organisations reflective of stages of consciousness. In this case the organisation of EL1 maybe perceived between two stages of organisational models in its culture combining the *Achievement Orange* focus on achieving profit and growth, beating the competition and

being innovative to achieve this outcome while simultaneously the financial culture is constrained within the parameters of standardised processes of a *Conformist Amber* model.

In the SOI interview, EL1 moved from a dominant socialised LOC from his grid interview into a more dominant self-authored LOC particularly evident in his leadership and managing of people. In terms of Laloux's (2014) framework EL1 would be now demonstrating more *Achievement Orange* model and as Laloux (2014) outlines both *Conformist Amber* and *Achievement Orange* are the most prevalent models living side by side in the modern organisation and evident inside EL1s form of mind as a reflection of this. In interview one, he is more dominated within *Conformist Amber* operations based on Laloux's (2014) description of this model and in the second interview the *Achievement Orange* is more dominating both within these two models. This was reflected in scores of 3 /4 in the grid interview and 4/ 3 in his SOI interview.

The living contradiction of these models and the paradigms of thought that lies beneath them is evident by looking through the lens of EL1 to understand some of the anomalies that leaders and organisations are dealing with as they navigate through some of these paradoxes and in that context, they can both either individually and collectively be 'in over their heads'. There is a sense of incommensurability of competing paradigms at play between the first four models of Laloux (2014) and the 5th Teal model reflective of 5th LOC.

This 5th LOC is what the constructive development literature on leadership as developmental (McCauley et al.2006) is calling for to respond to new challenges within organisations. However, as Kegan (1994) and Kegan and Lahey (2009) point out many leaders are not operating from the LOC that the organisation requires to be effective. Equally, the paradox is that, in turn, can be function of the limitations of the organisational mindset being played out in its own leadership. In a way, it is the perfect storm or the optimal conflict for a disequilibrium to occur that could lead to new 5th LOC to deal with the demands on a system that cannot function effectively inside models of organisations not fit for purpose for 21st century leadership complexities (Kennedy et al.2013).

Given that subject-object theory is about the capacity to grow in mental complexity and in that growth into new LOC, if leaders such as EL1 grow into more 5th LOC, then there is more choice in terms of closing the gap between subject-object in terms of agency-structure dynamics within the organisation. By default, making meaning at the 5th LOC creates and

has the capacity to embrace multiple perspectives enabling new systems to emerge akin to Laloux's (2014) concept of Teal organisations and its second-tier consciousness.

Within this context it could be argued that the push and pull leading up to the financial crisis of 2008 reflected on by EL1 in the first grid interview was at play in the structures running the meaning making of LOC of the decision makers in these organisational holding environments. In the context of this type of cultural capture and drawing on Kegan's (1994) language the decision makers maybe 'in over their heads' lacking the internal capacities and the external support to navigate the challenge of their situation.

4.3 Case Two: Organisational Context and Executive Leader Profile

EL2 worked in a private financial institution which he had just recently joined in the first grid interview, and when doing the SOI interview, he had been in this organisation for a few years. He referenced a previous financial institution across both interviews and mentioned here to give context for some of his thoughts, reflections and meaning making across both interviews.

EL2 had joined the first organisation from school, spending twenty-five years in the organisation and was head of a business unit of the organisation with responsibility for a staff of 80 and in his present organisation he had responsibility for 150 people.

EL2 is also a parent of young children, and this is referenced in his interviews and important in understanding his LOC and its relationship to his role identity and his perception of his own leadership as an expression of LOC in the holding environment of his organisation (Kegan, 1982) and the holding environment as described by McCauley et al. (2006) which is inclusive of home, family, love, and relationships.

4.3.1 Repertory Grid Eyeball Analysis

As can be seen in (table 4.5) the variables are consistently high across almost all the constructs and particularly where EL2 identified their organisation now and the ideal organisation as aligning within the 5th LOC. This may be a function of a hierarchical interpretation of these numbers and their meaning making for EL2 and /or a function of EL2

perceptual over-estimation of where he would like to be in terms of a developmental scale of understanding these constructs as a reflection on his own LOC (Mc Namara, 2013).

Equally striking is that the numbers across all the constructs within the six elements for the organisation three years ago are consistently on the lower end scale of 2 and 3 forms of mind. The stark contrast in these low numbers as applied to EL2s work organisation three years ago may reflect a need for EL2 to see the new organisation as the better one compared to the organisation he had left behind. As stated by EL2: 'I like...some of this stuff, in my ideal organisation is matching up but where my organisation is now, it could be a honeymoon period as well like you know.' (EL2/21).

Furthermore, this focus on the low numbers on the organisation three years ago and the higher numbers concerning EL2 three years ago could be a way of dealing with a threat or risk to EL2s own sense of meaning making of himself within a socialised LOC. Indeed, according to Hesling and Howell (2014) in a socialised LOC when authority is located externally, a socialised leader locates responsibility externally, and without an independent source of authority, they are unable to make judgements about their contributions to a problem or solution.

As EL2s numbers were highly consistent across a lot of the constructs with some of the qualitative data repetitive inside his meaning making, four were chosen in this case as both incorporating and best illustrative of EL2s overall meaning making and LOC in this interview.

	Variables						
	M y s e lf N o w	M y s e lf T h r e e Y e a r s A g o	M y I d e a l S e lf	M y O wn O r g a n i s a t i o n T h r e e Y e a r s A g o	M y O r g a n i s a t i o n N o w	M o d e l O r g a n i s a t i o n	
Level Five Dimension of Meaning							Level One Dimension of Meaning
Independent Thinker	5	3.5	5	2	5	5	Faithful Follower who seeks Direction
Interdependent Thinker	4	3.5	4	2	4	4	Aligns with own Tribe Consensus
Sets Agenda	4	3	4	2	4	4	Seeks Approval for Agenda/Solution
Problem Solver	4	4	4	3	4	5	Standard Solutions Applied
Problem Finder	3.5	3	4	3	4	4	Team Player
Comfortable with Ambiguity	4	4	4	2	5	4	Uncomfortable with Uncertainty
Holds Multiple Perspectives	4	4	4	3	3	4	Holds to own Beliefs and Ideologies
Open and Curious	4	3	5	3	5	5	Rigid and closed
Can Take Responsibility within Relationships	5	3.5	5	3	4	4	Externalises to Responsibility
Internalises own Authority	4	3	4.5	3	4.5	4.5	Externalises to Authority
Manages Conflict Well	5	4	5	3.5	4.5	5	Torn in Conflict Situations (Can't Decide)
Delegates	5	4	5	3	5	5	Controls
Empowers	4	4	4	2	4.5	4.5	Holds on / Holds back the Reins
Adaptive Leadership	5	3.5	5	2	4.5	4.5	Technical Leadership
Can Voice and Act on own Values	4.5	3.5	4.5	3	4	4.5	Subject to Organisational Values/Culture
Leads to Learn	4	3	4	1.5	5	5	Learns to Lead

Table 4.5: Case 2: Repertory Grid Eyeball Summary Analysis

4.3.1.2 Comparison of Highest order Constructs for Self and Organisation

In both constructs EL2 scored himself and his organisation now as a 5th LOC which as Waddock (2006) suggests these types of minds are comfortable with paradox, contradiction, and ambiguity while also individuals are not defined by their roles and careers but rather recognise, they have chosen these frameworks.

Furthermore, in terms of leadership, these 5th LOC leaders are committed to holding and mediating multiple ideologies, individual identities, and organisational possibilities (Hesling and Howell ,2014). Equally it is these type of 5th LOC leaders that can bring new ways of thinking which Vincent et al. (2015) argue are needed for the complexities of the 21st century organisation because of their capacity to bring the qualities necessary to move beyond any one individual, group, or country.

Highest Constructs	Self as Elements	Organisation as Elements
1.Independent thinker versus faithful follower who seeks direction.	- Self Now: 5 - Ideal Self: 5 - Self-three years ago: 3.5	- Organisation Now: 5 - Ideal Organisation: 5 - Organisation Three years ago: 2
2. Can take responsibility within relationships versus externalises responsibility	- Self now: 5 - Ideal Self: 5 - Self-three years ago: 3.5	- Organisation now: 4 - Ideal Organisation: 4 - Organisation three years ago: 3

Table 4.6: EL2 Comparison of Self and Organisation Highest Constructs

4.3.1.3 Independent thinker versus faithful follower who seeks direction

As can be seen from (table 4.6) while EL2 perceived himself as 5th LOC, the evidence underlying his meaning making on this construct does not include these 5th order capacities and therefore does not align with his perception; rather the analysis suggests that EL2 is more between a 3rd and a 4th LOC. For example, EL2 described his experience as wanting to be seen as someone important in career terms but at the same time was aware that the organisation was ‘bouncing on the bottom, it won’t satisfy my aspirations in the next five years’ (EL2/3). EL2 also within this construct described his experiences doing Leadership courses as being an awakening of his own capability as he measured himself doing as well as those, he admired in his class co-hort and who he measured himself against. In both these instances EL2 is demonstrating socialised LOC which derives its sense of success, authority, and knowledge from external sources to which they measure their success (Hesling and Howell, 2014).

Furthermore, inside this construct EL2 made a distinction by re-interpreting independent thinker inside his meaning making as a clear thinker in terms of ascribing it to his own meaning making.

So, I'll be able to think, ok this is what I want, I want to make some money, my kids are at a young age, I want to make some money, so I'm not going to be fulfilled in [Name of Organisation]. I didn't have a pay increase for four or five years like a lot of people and I said OK let's see if I can now advance myself somewhere else. (EL2/10)

Within this EL2 was no longer faithfully following in terms of staying in the first organisation and his decision to move to a new organisation can be a function of both a combination of image management mirrored in a socialised LOC while also emerging into making decisions based on EL2s own internal value of himself anchored in a revision of that self from his experiences both in attending Leadership courses and in the organisation. Waddock (2006) stated that an aspect of a 5th LOC is one which no longer defines a person's self-worth or value in terms of career or role identity.

In this regard, EL2 was still transitioning inside these types of issues for himself and within the holding environment of the organisation he had been in for 25 years (organisation 1) and the new organisation (organisation 2) he had just joined. This finding resonates with Barbuto and Millard (2012) who suggest that as leaders transition from third to fourth orders they 'begin to develop a sense of authorship as separate from institutional boundaries' (p. 238).

In this regard, the holding environment of the first organisation (Kegan, 1994) together with EL2s interpretation internally of his experiences and their significance for him within organisation (1) may have influenced this type of transitioning between 3rd and 4th order LOC. Within this context an independent thinker is associated with 4th LOC where one has created a self that is the author of its connections to its own ideologies (Berger, 2003). This does not seem to be the case here in that EL2s decisions and actions are not outlined in terms of reflections on his own ideology or that of the organisations here in view but rather in terms of an interpersonal measure of himself which is more anchored inside a socialised LOC.

This gap between the perceived 5th LOC of EL2 and his actual LOC could be an example of Kegan's (1994) point of leaders being 'in over their heads' in terms of this whole arena of agency-structure issues, dilemmas and constraints within organisations on the one hand and within the internal psychological structures of individuals on the other hand as a key issue to be resolved in terms of levels of mental complexity(Kegan and Lahey, 2009) if there is

to be the possibility to enable individuals and organisations to meet these new LOC and related new models of organising and organisations.

Furthermore, Tourish's (2015) reflections in the literature on the meaning making of transformational leadership as profoundly rooted in context is noteworthy in this case of the need to understand the types of limitations that are implicit to the leaders agency and the agency of others. These limitations seem to provide some credence to the idea expressed by Kegan (1994) and (Kegan and Lahey, 2009) that leadership courses should take an adult developmental approach and what Hesling and Howell (2014) refer to as a vertical developmental approach to leadership. Such an approach it is proposed would create space for capacity to integrate new perspectives and learnings into action and develop the type of mental complexity (Kegan and Lahey, 2009) possible for leaders and leadership inside an organisation.

4.3.1.4 Can take Responsibility within relationships versus Externalises Responsibility

In the second construct EL2 scored himself again as a 5th LOC but his organisation now and ideal organisation as a 4th LOC based on his interpretation of the nature of organisation (2) as more commercial than his former employers (1) which he stated had a more a civil service type culture. The organisation he was in now in, he stated was driven by the numbers.

Yes. And [Name of Organisation 2] here now they're very much like....it would be four or a five in taking responsibility you know, they like accountability, you make money, or you lose money, you know the process is on your forehead, right? Ideal organisation I think is a.... yes. I think I.... probably I am not quite comfortable yet with being the ideal.... you know this, like you know where I am now, you know I am not sure if it is the ideal thing. I think we all like a little safety net somewhere, but it probably makes you grow (EL2/15)

In this context, EL2 framed taking responsibility in terms of his own autonomy to make decisions to meet the numbers whilst in organisation (1) there were more support structures and relationships, and the responsibility was spread among people which he described felt more like a 'safety net'. Organisation (2) enabled EL2 to grow perhaps in terms of its challenge to EL2s decision making in the context of how he goes about meeting the numbers, but he did not perceive it as ideal in the sense that there was no safety net and by implication if he does not make the numbers then it is on him. This level of responsibility and accountability is what is at risk for EL2 in this organisation as a holding environment and why perhaps he has a 4th LOC as ideal organisation in this construct rather than a 5th LOC in his meaning making of the drivers of this organisation.

Here EL2, appears to be demonstrating a socialised LOC in his leadership in this context which as Barbuto and Millard (2012) suggest these types of leaders can co-construct their sense of meaning with others, but they are not differentiated from them. The socialised LOC is further evident in that there was no questioning of the beliefs of the organisation but a fusion or acceptance of its ideology (Berger, 2003). This meaning making inside this construct then is reflective of between a 3rd and 4th LOC in that EL2 has more responsibility to make decisions on behalf of the organisational goals (so the 3rd LOC is dominating) but more self-author LOC is also emerging in that he alone must make decisions.

Indeed, some of the challenges for EL2 and his own decision making reflecting his LOC became evident in other parts of the interview.

4.3.1.5 *Comparison of Lowest Constructs for Self and Organisation*

As can be seen from (table 4.7) in looking at the data underwriting these scores it is apparent that the first construct is the only construct where the numbers for EL2s organisation three years ago (1) and the organisation that he presently works (2) are the same. This may be a function of both organisations being financial types of organisations albeit his present organisation (2) being a clearly driven commercial one while organisation (1) is more akin to a public service type of culture, conservative in its structure and systems with everyone being all part of the same system. This aligns with Berger's (2003) point that people in a socialised mindset identify with the ideology of the group or community or organisation they belong to.

Lowest Constructs	Self as Elements	Organisation as Elements
1. Holds Multiple perspectives versus holds to own beliefs and ideology.	- Self now: 4 - Ideal Self:4 - Self-three years ago:4	- Organisation now: 3 - Ideal Organisation: 4 - Organisation Three years ago: 3
2. Can Voice or act on their own values versus subject to the organisational values/culture.	- Self now: 4.5 - Ideal Self:4 - Self-three years ago: 3.5	- Organisation now: 4 - Ideal Organisation: 4.5 - Organisation three years ago: 2

Table 4:7 EL3 Comparison of Self and Organisational Lowest Constructs

4.3.1.6 *Holds multiple perspectives versus holds to own beliefs and ideology*

In terms of the organisation now and three years ago with this first construct being scored the same number as a 3 which is a socialised LOC, it would seem to be accurate in the sense that a socialised LOC is maintaining the status quo in terms of representing the interest of those it identifies with and which in turn is rewarded. While this type of socialised LOC

avoids conflict and operates in the best interest of the organisation (Lahey et al.1988) it can hold firm in making decisions despite possible differences but will not question the core beliefs behind those decisions.

As stated by EL2:

How I deal with people. So, I will stick to my own beliefs and ideologies because I'm comfortable and that's the way I want to be treated. The best advice I ever got is treat somebody like you'd treat your brother or your sister, how they would like to be treated and that's how I interact. So, I never change from that, that's dealing with people, so I have certain beliefs and ideologies and I won't shift away from. (EL2/16)

When asked to qualify this meaning making in terms of holding multiple perspectives as the dimension of meaning within this construct, EL2 also stated the following:

Probably just ok like, I have a certain I have certain flexibilities of them.... ambiguities and that I can probably you know but kind of whole multi perspectives. Yes, I probably could if the company had to downsize right? I would be so caring about my staff, but if they had to downsize for the betterment of the company, ok so that's a caring way of staff and trying to protect the other ones that are there. So, I probably can I'd say. I'd probably be ok on that. (EL2/16)

In this regard, EL2 is stating that he had a clear value of treating people as he wished to be treated suggesting an internal value of a 4th LOC as he stated that he would do it his way if a manager asked him to do something in terms of dealing with someone. However, it was also evident that EL2 was conflicted somewhat in the second narrative piece as he worked through this internal conflict by suggesting as an example that he would take care of others if he had to downsize, indicating a 3/4 LOC. Berger (2012) suggests that someone with a self-authored mind will be made up by their own internal values and that when these are in conflict within themselves, it can be experienced as being torn between parts of oneself.

However, in this case, EL2 is operating from a dominating 3rd LOC as he is not torn between parts of himself but between himself and the organisation. In this context of meaning making, EL2 seems to lean towards taking care of the organisations needs by somewhat avoiding this conflict internally by acting in the best interest ultimately of the organisation, while if downsizing EL2 would take care of people in that process. Here, EL2 appeared to be demonstrating a more dominant socialised mind as while he can disagree with the decision making, he is loyal to the needs of the organisation which are equalled to his own in that he is fused with it albeit by adapting his own way of dealing with such a situation.

4.3.1.7. *Can Voice or act on their own values versus Subject to the Organisational Values/Culture.*

This construct is a useful illustration of the impact of the external holding environment of the organisation and its interpretation for the internal world of its meaning making for EL2 in terms of what was at risk for him in this type of situation. According to EL2, he had never in reality faced a situation of choosing between his own values in conflict with the organisation's values. In this sense, EL2 appeared to be demonstrating a socialised LOC in terms of avoiding the conflict. As Hesling and Howell (2014) state, people operating from this perspective cannot reflect on the values and group processes with which they are identified.

In this overall context EL2 is demonstrating a 4th LOC while dominated inside a socialised LOC understood in the following example as the cultural meaning making of EL2s organisation.

I think I would.... there's probably a financial decision there In a sense if needed the money to earn a living right, for my principle, how far will I go for my principles? I'm not sure, I've never been. pushed there yet. (EL2/18)

In discussing this further EL2 also stated the following: 'I think you nearly have to be in the situation before I can answer that properly. Sorry for avoiding it but I just.... you know.' (EL2/18). It is no surprise therefore that within this overall analysis, EL2 was scored as between a 3(4) LOC.

The next section provides an analysis of EL2s SOI to examine his form of mind as it presents in that moment in time using the transcript interviews to provide an overall interpretation of the SOI as well as a comparison with the Grid interview.

4.3.1.8 *Subject -Object Interview Analysis*

As can be seen in (table 4.8) it is argued based on evidence from this interview that EL2 is transitioning developmentally from 3 (4) to a 3/4 from his first grid interview. In this sense EL2 is mirroring as suggested by Barbuto & Millard (2012) that leaders find themselves

more in transition at some point than fully embedded in the new order while Kegan (1994) sees the transition points as a continuum until fully embedded within the new order.

In the second interview, EL2 was in his new organisation for a few years, and it became clear that there was significant dissonance and tension in EL2 between the demands of the culture of the organisation and his own sense of self, particularly his ethical sense of self and its impact of the structure running the meaning making of his mind reflected in his LOC.

Transcript	LOC
But I'm just saying you'd like every manager how would your family get treated well? How would you treat everybody? Because they're somebody's brother or sister or something like that. So, organisation (1) would allow me to do that. They were very fair. The right thing was done to staff. Where my current job, the right thing isn't done to staff a lot. Like I'm kind of compromised between that. So, I'm torn between working for a company that rewards me reasonably ok. It's not that ethically, there's a fine line at times. As I said to you if you must let somebody go and fire somebody for no reason apart from the budget needs to be hit and they're good people and that's probably at the moment where I'm torn the most.	3/4
It was probably the way I was brought up, but I won't ever compromise myself and my ethics and I feel at the moment, it's a little bit where I am at the moment, in terms of some of the things I'm asked to do, I'm probably uncomfortable with. They're not probably legally wrong, but they're just ... It's not the way I like to treat either our customers sometimes or treat my staff.	4/3
Yes. Very much so and if I want to maintain, like we all like to be liked to some degree, I don't need to be loved or anything like that, but I need to be liked and respected, and if I stand up in front of my staff and say, we'll treat people well here, we'll treat people that ... And then my actions sometimes, like it's not really within my remit, but my remit would be, I'm not going to fire somebody in the, but if I don't do it, somebody else is going to do it. it's terrible, it feels like a total cop out when I say it out loud, but just you know. So, if the numbers are there, you know. And people walk away with a nice redundancy. You know the person got another job straight away and it's you know; it works out fine. I just feel like somebody else ... I can slightly justify my moral decisions, but...	3/4

Table 4.8: Summary of EL2s overall SOI

The theme of how to treat people in terms of his staff was also evident in EL2s grid interview. However, EL2 appears more intensely torn inside himself in this SOI interview than the previous interview in the type of decisions he was making on behalf of the organisation reflecting a 4th order LOC. However, EL2 ultimately does make the decisions required by the organisation by reassuring himself that if he didn't do it then someone else will because of the culture of the organisation and therefore showing a 3/4 LOC in this context.

This LOC reflects the fact that EL2 suggests that the holding environment is the cause of his behaviour and decisions and not himself individually echoing his reticence on a similar point from his grid interview on his capacity to act on his values in the organisation and in the grid, interview being non-committal in that regard. This type of distinction is mirrored in the management literature in different arguments that suggest the system is responsible for

individual choices (Wolf, 2014) while others like (Starkey, 2015) suggest the individual is responsible albeit not by circumstances of their own making.

EL2 no longer felt that he was a good cultural fit for this organisation unlike when he first moved there a few years ago as he spoke about in his grid interview. However, while he said he wanted to change job he had not actively pursued finding an alternative organisation and, in this sense, while he is mirroring a 4th LOC in his thoughts, it is argued that he has not acted on it and in that sense, he is more reflecting a 3/4 form of mind.

In this regard, EL2 was clearly experiencing dissonance throughout the interview inside issues of responsibility to his family and to his staff as intrapersonal conflict and his statement of his ultimate lack of control in the decision making in his organisation. He is conflicted simultaneously inside his sense of identity by providing for a good lifestyle and feeling of value and approval by his family which is aligned with the nature of rewards he received from the organisation as being part of this overall conflict evident of a 3/4 LOC.

Consequently, while EL2 felt some responsibility for his staff and didn't want to disappoint them or lose their approval in terms of how they saw him as a leader, which are indicative of a socialised LOC, he does follow through on the decisions on behalf of the organisation. In a 4th LOC as stated by (Barbuto and Millard, 2012) people are often self-motivated and self-directed in their decision making and can be empathetic without being submissive to external authorities. However, in this case while EL2 can disagree and can argue for a different outcome similarly espoused in his grid interview, EL2 also felt that he had no control as the organisation had the ultimate authority. In this overall context EL2 has not transitioned to a more dominate 4th order LOC which as Berger (2003) states would clearly be the creator of its connections to its own ideologies and perhaps acting on them if fully self-authored.

In this regard, it would be reasonable to suggest that this case is a useful illustration of the agency -structure debate (Strati, 2000) in organisational studies and in this instance reflected in the subject-object theory of Kegan's (1982) evolving self in terms of the degree to which EL2 felt he had choices in a work organisation environment that he is dependent on for measures of success or livelihood expressed as part of his evolving LOC. While there is an awareness by EL2 of being compromised ethically in the decision making and the idea that the decisions are all based on the bottom line, EL2 was also torn in parts of himself which demonstrates a 4th LOC. However, EL2 removed the threat and the risk of acting on this differently (Drago-Severson, 2012) and these choices to himself by suggesting that if 'he

doesn't do it, someone else will'(EL2/11). Furthermore, EL2 reasons on this point that 'people get a good pay off if they must go even though their performance was not actually at issue'(EL2/11) which are more demonstrative of being dominated by a 3/4 LOC.

In this regard, it is worth noting Probert and Turnbull James (2011) argument concerning competency models of leadership in that they don't take account of these types of cultural and psychological processes. Furthermore, the experiences of EL2 would seem to agree with an absence in leadership studies of the subtle and moral dimensions of meaning making those individual leaders are dealing with (Bolden and Gosling, 2006). This would seem to be very evident here for EL2 in terms of the measurable demands of his present organisation (2) and his own moral, relational, and emotional aspects of leadership that he is dealing with inside himself in his 'hidden competing commitments' (Kegan, 1982) together with the context framing (Wolfe, 2012) and curriculum of the organisation (Kegan, 1994).

In EL2s grid interview he scored himself as a 5th LOC which in the leadership literature could be understood as transformational leadership which Burns (1978) argued helps to move people beyond their wants and desires to higher levels of motivation and morality and furthermore what some scholars have suggested that transformational leaders are agents of social and organisational change (Bass, Avolio, Jung and Berson, 2003; Bass, 1985). According to (Bass 1985) this type of leadership encourages the growth and development of their followers enabling followers to transcend their own self-interest for a higher, collective purpose. Indeed, Yukl's (1989) contends that the focus on the transformational model has simplified a complex phenomenon without due regard for group and organisational processes seems evident in this case.

The LOC analysis scored EL2 as 3 /4 having a centre of gravity of meaning making exhibiting elements of a 4th LOC but dominated by a socialised LOC within the intra-conflict of his own sense of right and wrong but ultimately EL2 acted with and for the organisation. Indeed, EL2 consistently referenced financial rewards which he aligned with the provision for his family which in turn made him feel of value and in this way, EL2 demonstrated a socialised LOC which is solidly aligned with the perspectives and judgements of others with whom one identifies (Berger,2003; Waddock, 2006).

The perception of EL2 of being at a 5th LOC in his grid interview and the reality that he is operating and transitioning developmentally between a 3/4 is also a reflection it is suggested in this analysis of Kegan's (1994) view that leaders are 'in over their heads' as the issue is not skills and competencies or transformational leadership as espoused traditionally in the

literature. The issue appears to be more of a developmental one where organisations provide mixed messages about a need to be operating at higher forms of mental complexity but where the underlying operating assumptions in the essential ideology does not align with that requirement as a holding environment. This is the issue to be resolved, this dynamic between agency of the individual form of mind and structure of mind of the organisation further added to an individual self-identity as part of their overall holding environments of work and home and play and love (McCauley et al., 2006) are all inside the struggles evident in this case.

4:3.2 Application of Laloux Stages of Organisation derived from SOI and LOC analysis

Organisation (1) and (2) as described by EL2 in this case would best be described in (Laloux's, 2014) framework as *Conformist Amber* and *Achievement Orange*. Organisation (1) was traditionally anchored inside a public service type of culture which would sit inside the *Conformist Amber* type of model with its focus on decisions based on conformity to social norms and decisions which one's family, religion or social class considers legitimate. On the one hand, it was this very type of organisational model that seemed to play a significant role in EL2 seeking to leave it after twenty-five years while on the other as he reflected on it, from the vantage point of *Achievement Orange* model of organisation (2) he seemed to see it as more of a cultural fit for himself than the competitive model driven by numbers of organisation (2). This gives an interesting insight into EL2's LOC as clearly dominated by a socialised form of mind in terms of his sense of belonging is existential in that his value is a function of his relationship to others. Equally his LOC has moved into aspects of a 4th LOC of *Achievement Orange* model driven arguably by the organisation (2) and its requirements to make decisions. In this regard while he suggested he can find voice to go against the decision making, he ultimately held back that voice inside an embedded one true perspective of a socialised LOC and world view aligned in turn with the holding environment of organisation (2).

Organisation (2) based on EL2 descriptions, and his experiences is arguably an *Achievement Orange* model in its focus on making the numbers and if those are met with the command and control on the what, then it is not too concerned with the how. Laloux (2014) points out that the stage an organisation operates from is the stage through which its leadership tends to look at the world. Furthermore Laloux (2014) states that this means that an organisation cannot develop beyond its leadership's stage of development, and this is reflected in this case. For example, in organisation (2) when EL2 described how he wanted to push back on

a decision that he thought was wrong, EL2s line manager informed him that it's ultimately what the client wants and therefore his line manager as leader was modelling to EL2 'what is and is not possible around here' (Wolfe, 2012, p.27). The clear message from the leader and from this organisation is that the focus was on meeting the numbers at all costs.

Therefore, as a holding environment that might encourage growth and development in terms of developing new levels of mental complexity reflected in turn in more expansive forms of meaning making of purpose and motivation as possibly equally valid propositions for running a financial private business is not happening in this organisation. This finding is at odds with Kegan and Lahey et al. (2016) who provide an example of a very successful US hedge fund company whose business success was predicated on employing the principles of personal evolution and integrity with cultural integrity in the holding environment of the organisation. This would counter the possible assumption that financial types of organisations only need to attend to the numbers and only companies in the human potential business need to grow and develop their leaders. However irrespective of the nature of the company or the nature of the work organisation it is people and their mindsets that come to work and modern work organisations of all kinds more than ever depend on accessing the whole person even more so with the changing complexities in people, work, and society post Covid 19.

4.4 Case Three: Organisational Context and Executive Leader Profile

Case three involves EL3 describing her experiences within three different organisations across the two interviews. In the first Grid interview, EL3 worked as a Fundraising Director for a primary health care organisation which underwrites her scoring and qualitative data in this interview. In the second SOI interview, EL3 worked for a year as a Project manager in an Arts Theatre company and then worked for a hotel group within the Hospitality and Leisure Industry.

The Arts organisation, while publicly funded, was operated as a commercial organisation, and described by EL3 as a corporate organisation. The third organisation, a hotel group, is involved in driving tourism, and the company successfully secures contracts for national and international meetings, conferences, and exhibitions.

EL3 is a woman in her middle thirties, has an undergraduate degree in Arts and Drama and had made a move into business after doing an Executive leadership course. The different organisations that EL3 worked for reflected a period in her personal and professional life

where EL3 was making changes to her career opportunities and her personal life, such as moving to a different part of the country and starting a family.

4.4.1 Repertory Grid Eyeball Analysis

As can be seen from (table 4.9) there are consistently high scores when EL3 is applying the constructs to herself and consistently low scores when being applied to the organisation now and her organisation three years ago, together with high scores of 5th LOC across all the constructs for her ideal organisation. One of the reasons that emerged for the low numbers for the organisation three years ago is that EL3 was not working directly for the hospital but for an administrative charity on behalf of the hospital, which she stated towards the end of the interview. She was answerable to the Board, and there was just herself and one other person working for her, and this fact meant that some of the constructs did not directly apply for example, when talking about *empowering versus delegating*. In this regard, two of the constructs are absent in the scoring of EL3 on the grid. However, given the spread of the dimension of meaning across the fourteen other constructs, the overall analysis was not affected in detailing the qualitative data available for the rest of the constructs, which established the meaning making of the numbers.

EL3 was reflecting on the hospital as her organisation within her distinct role identity as she stated:

See, when I'm talking about my organisation, I'm talking about it in terms of like I work for the board of authority. So, everything in here is in terms of my board. It's not in terms of the operational workings of the hospital if you like. Do you know, so it's kind of it is almost an administrative charity? The organisation is my charity and the board that manage it (EL3/7)

The other issue of note was the focus of EL3 on the rating scale in terms of her hierarchical interpretation of the value of the numbers in her meaning making. This became more evident towards the end of the interview when EL3 stated clearly that she would prefer to see herself on the left-hand pole side of the grid. This left-hand side of the grid has the constructs at the higher end of the scale of mental complexity, although it's the continuum and spread of dimensions of meaning through either end of the pole implicit in the design as much as the actual number is what is in focus here.

	Variables						
	M y s e l f N o w	M y s e l f T h r e e Y e a r s A g o	M y I d e a l S e l f	M y O w n O r g a n i s a t i o n N o w	M y O r g a n i s a t i o n N o w	M o d e l O r g a n i s a t i o n	
Level Five Dimension of Meaning							Level One Dimension of Meaning
Independent Thinker	4	3	4	2	2	4.5	Faithful Follower who seeks Direction
Interdependent Thinker	5	4	5	4	4	4.5	Aligns with own Tribe Consensus
Sets Agenda	0	0	0	0	0	0	Seeks Approval for Agenda/Solution
Problem Solver	4.5	3	4.5	2	2	5	Standard Solutions Applied
Problem Finder	5	3	5	2	2	5	Team Player
Comfortable with Ambiguity	5	4	5	2	2	4.5	Uncomfortable with Uncertainty
Holds Multiple Perspectives	3.5	3	4	2	2	4	Holds to own Beliefs and Ideologies
Open and Curious	0	0	0	0	0	0	Rigid and closed
Can Take Responsibility within Relationships	5	5	5	2	2	5	Externalises to Responsibility
Internalises own Authority	5	4.5	5	1	1	5	Externalises to Authority
Manages Conflict Well	3	3	5	4	4	5	Torn in Conflict Situations (Can't Decide)
Delegates	2	2	3.5	N/A	N/A	0	Controls
Empowers	3.5	3.5	4	3	3	4	Holds on / Holds back the Reins
Adaptive Leadership	4.5	3.5	4.5	1.5	1.5	5	Technical Leadership
Can Voice and Act on own Values	4.5	3.5	5	4.5	4.5	4.5	Subject to Organisational Values/Culture
Leads to Learn	3.5	2	4.5	2	2	4.5	Learns to Lead

Table 4.9: Case 3: Repertory Grid Eyeball Summary Analysis

While EL3 scored herself quite consistently as a 5th LOC, her self-awareness is operating more from a 4th LOC rather than inside a 5th LOC (Kegan's,1982). For example, to be operating from a 5th LOC, one needs to have recognised one's own system as just one among many and further to understand the limits of all systems and that is not in evidence in this

interview. Barbuto and Millard (2012) suggest that adults in the 5th LOC realise the limits of their own system and can tolerate emotional conflict. There is evidence in the interview that emotional conflict was not something that EL3 was comfortable with and while she had a conscious awareness of this in terms of its impact on her both personally and professionally, EL3 was still actively subject to it.

Consequently, while EL3 scored herself on the grid as a dominant 5th LOC and her organisation as a 2 LOC, the author of this study scored her as a 4/3 LOC. This score is reflective of the evidence that while EL3 demonstrated a clear 4th LOC in her self-authored ideology and lived it in some of her actions and behaviours, she simultaneously showed evidence of avoiding conflict and getting stuck when faced with conflicts more reflective of a socialised LOC. This consistent issue around conflict situations become evident when EL3 described how she acted on some of her decisions which created a dissonance in herself seen in the qualitative data outlined inside some of the constructs.

4.4.1.2 Comparison of Highest order Constructs for Self and Organisation

As can be seen in (table 4.10) there is a consistency of 5th LOC across all three constructs as EL3 applied them both to herself now, her ideal self and her ideal organisation while equally seeing herself as having moved developmentally into 5th LOC from three years ago. Furthermore, she ascribed consistently low numbers of both 2s and 1s to her organisation now with no change in these numbers from three years ago. These numbers from EL3 perceptual lens would suggest that her LOC could be constrained within an organisational holding environment that is operating at significantly lower numbers than she saw her own LOC. In constructive development theory (Kegan, 1982, 1994) each level is both cumulative and incremental and when one moves into a new level one does not discard the old one but rather incorporates it. In this case either EL3 is adapting her own LOC to the holding environment which can be the case if she is consciously doing so but equally, she may have an unrealistic perception of her own actual LOC and deconstructing these constructs further will help provide insight into what is the case in this regard.

Highest Constructs	Self as Elements	Organisation Comparison
1. Problem finder versus team player	- Self Now: 5 - Ideal Self: 5 - Self-three years ago: 3	- Organisation Now: 2 - Ideal Organisation: 5 - Organisation three years ago: 2
2. Can take Responsibility versus externalises responsibility	- Self Now: 5 - Ideal Self: 5 - Self three years ago: 2	- Organisation Now: 2 - Ideal Organisation: 5 - Organisation three years ago: 2
3. Internalises own authority versus externalise to authority	- Self Now: 5 - Ideal Self: 5 - Self three years ago: 4.5	- Organisation Now: 1 - Ideal Organisation: 5 - Organisation three years ago: 1

Table 4.10: EL3 Comparison of Self and Organisation Lowest Constructs

4.4.1.3 Problem Finder versus Team Player

Reflecting on the first construct EL3 described how three years ago she would have wanted to be perceived as a team player. This was reflected in her identification of a 3 and was accurate in that a 3rd LOC is identified with being a team player, a key requirement in a modern organisation. In this context then she would be fulfilling the socialised LOC with the idea being that you can modify one's own expectations to fulfil other expectations (Waddock, 2006) which seemed to have been the case here. However, she had learned to leave others at times to find their own way inside a team and in that regard had moved into a more 4th LOC. If EL3 were still operating inside a socialised LOC in this context EL3 would still be anxious about being perceived as a team player for fear of the loss of relationships (Drago-Severson, 2008). The fact that EL3 is potentially willing to disappoint others if the decision feels right and therefore can take a stand by creating and regulating boundaries on behalf of her own internal values (Kegan and Lahey, 2009) is evidence of 4th LOC.

Myself three years ago. One of the learnings that came up in the immunity. to change map was around me constantly being a team player or pulling up the slack. And then realising no, I don't have to pull the slack all the time because sometimes someone needs to drop a ball to learn from it. And I'm not going to pull. So, I probably would have been always anxious to be a team player, to be seen to be a team player, even when it wasn't the most appropriate thing to do. So, my choice around it wouldn't have been as strong. So, it would have been a three. (EL3/10)

4.4.1.4 Can take responsibility within relationships versus Externalises Responsibility

In this construct EL3 again saw her own LOC as operating at 5th LOC compared to the lower numbers she ascribed to her organisation. EL3 perceived the health organisation as being subject to government policy and not active on its own behalf in terms of influencing policy

decisions and therefore scored it low on this construct. In terms of applying this construct to herself EL3 described how she over owns inside this type of construct, and this could be evidence of a 4th LOC. However, the over ownership stated by EL3 maybe more a function of a socialised LOC which is evident throughout the interview when EL3 is in conflict in relationships.

It's going to be a four in that be able to take multiple perspectives, but still. hold onto their core vision. Can take responsibility within relationships. Yes. Externalise responsibility. No. If anything, I own too much. I three years ago, recognise. Yes, I think I'd always sort of sit and see what ownership I have of that. Yes, that would have. My ideal self is a five. Externalises responsibility. Take responsibility within relationships. No, because it's kind of they're reactive to stuff, so they're not really taking responsibility within. They're waiting to see what happens, so what will be done to them, where they will be moved (EL3/11)

4.4.1.5 *Internalises own Authority versus Externalises to Authority*

Analysis of this construct highlights a similar theme as EL3 reflected on the health organisation being subject to government policy to that of *Can take responsibility within relationships versus Externalises Responsibility*

Ok. Yes. So that'd be a five. I think I probably would have been... I would have come along that path in the past. These are a two. My ideal self would be five. Organisation. So, externalises to authority. No, they're waiting. for everything to happen to them, so they're right down at a one. There's a necessity I suppose in the organisation too. Authority, authority, authority. There is none. There is no authority, so five, do you know. You know, it's different if you're like oh, I want to work for a bank, but you know, if I wanted to work for a bank, I'd want them to externalise to authority, to the regulator, you know (EL3/11)

What is of note on EL3 reflections in this context is that if EL3 were operating more from the 5th LOC as she perceived herself to be, then she perhaps would have shown more evidence of a capacity to see the organisation's response inside this construct more from multiple perspectives which a 5th LOC would do. It seemed that EL3 due to the nature of her role was acting more in an independent holding environment as she was working separately on behalf of the primary health care organisation. This role identity and meaning making can be useful in giving her more perspective on the organisation but also more complex in deducing the role of the organisation on EL3s meaning making as an LOC.

Within this broader context of the holding environment and EL3s role within it, it is evident that EL3 was demonstrating 4th LOC being internally driven which as Barbuto and Millard (2012) states is a form of LOC that is often self-motivated and self-directed.

4.4.1.6 Comparison of Lowest Constructs for Self and Organisation

What is of note in these lowest constructs of EL3 is that given she scored herself as a 5th LOC on a number of the other constructs, it is these types of constructs outlined in (table 4.11) which if she were in fact operating as a 5th LOC, she would actually be higher on than she perceived herself to be. Correspondingly, her awareness of her lower scores on these constructs is equally an indication of her capacity to be able to look at them within herself as objective and in this overall regard she is demonstrating a 4/3 LOC.

Lowest Constructs	Self as Elements	Organisation Comparison
1.Manages Conflict well versus torn in conflict situations	- Self Now: 3 - Ideal Self: 5 - Self three years ago: 3	- Organisation Now: 4 - Ideal Organisation: 5 - Organisation three years ago: 4
2.Can Voice and Act on their own Values versus subject to organisational values	- Self Now: 4.5 - Ideal Self: 5 - Self three years ago: 3.5	- Organisation Now: 4.5 - Ideal Organisation: 4.5 - Organisation three years ago: 4.5
3.Lead to learn versus learn to lead	- Self Now: 3.5 - Ideal Self: 4.5 - Self three years ago: 2	- Organisation Now: 2 - Ideal Organisation: 4.5 - Organisation three years ago: 2

Table 4.11: EL3 Comparison of Self and Organisation Lowest Constructs

4.4.1.7 Manages Conflict Well versus Torn in Conflict Situations

It is worth noting EL3 numbers on this construct for the organisation is one of the few constructs that were higher than her own self in terms of how the organisation managed conflict compared to how she perceived her own abilities in this regard. She is showing a capacity again for a level of objectivity and self-awareness inside this construct which is indicative of a 4th LOC. However, it is still held inside aspects of a socialised LOC which becomes evident in her description of some of her experiences within the organisation. Her 4th LOC is evident in her ability to take a stand for her own role identity and speak up about it being eroded by a medical professional who was doing fundraising independently. However, she also found herself torn inside parts of herself typical of a 4th LOC (Berger, 2003) when she is met with a sense of hostility from external sources. Her 3rd LOC is evident in that these external forces have more authority in the sense of the hierarchy of the holding environment and she described how in these types of conflictual situations she feels herself

almost reverting to a child in the sense of feeling unable to respond and shutting down inside herself.

In the sense that as an example, say there was a situation in work whereby another department were doing some fundraising and they were a medical professional and yet I was the fundraiser, and I went in and met with her with a matron. And I put the case in terms of what was wrong about this piece, and it was all objective. It was, you know, the regulation piece, blah, blah, blah. And then they employed almost bullying tactics. Like why are you questioning me? This is how it is. And I was fine in the situation, but when I came back to the office, I was so upset. And it was that piece around I felt like I was being bullied by an adult and I was a child, do you know. (EL3/15)

Consequently, while EL3 is dominated by 4th LOC in her capacity to challenge existing processes (Hesling and Howell, 2014) she is also held inside the socialised LOC in wanting to avoid such conflict situations because of the subsequent internal impact inside of her.

4.4.1.8 Can Voice and Act on their own Values versus Subject to the Organisational Values

In the meaning making of this construct, it is clear that EL3 would leave an organisation that did not align with her values and in this regard demonstrated a 4th order LOC.

No, I would challenge, and I have challenged. So then at the same time, I'll only work in an organisation whose mission or vision I'm aligned with. So, once worked with an organisation that I wasn't connected to their mission, so not a good fit. And I left, so yes. (EL3/16)

In this example EL3s stated capacity to separate and leave the organisation suggests an authorship beyond the organisation which Barbutto and Millard (2012) describe as an aspect of leaders who are transitioning from the third to fourth order as they develop a sense of authorship beyond the boundaries of the institution. Furthermore, this stated action to leave an organisation that does not align with EL3s values could also be a function of Berger-Garvey's (2012) point that it is difficult to find a 5th LOC in organisations because people leave them.

4.4.1.9 Leads to learn versus Learns to lead

In this construct EL3 was working through within her own meaning making the dimensions of meaning within this construct. In doing so EL3 described how she had figured something out in the process as she was navigating this whole construct for herself.

Yes. I suppose it kind of uncovered... Any truth is a bonus, do you know, in terms of what it uncovers and what you figure out about yourself in it. So that was interesting. (EL3/18)

In this regard this could be an example of the value of taking a constructive developmental approach to leadership and its meaning making as a function of capacity for growth in mental complexity. This echoes in turn the argument put forward by Schamer and Yukelson (2015) who suggest that organisation systems and leadership systems are consciousness understanding consciousness as human intention. Within this, the authors argue that behaviours cannot transform within systems of organisations unless people and leaders collectively transform the quality of awareness in these systems at both an individual and collective level and this extract on this construct would seem to reflect this type of awareness that occurred for EL3. In this regard, within this overall analysis of the Grid interview, EL3 was scored as a 4/3 LOC.

The next section provides an analysis of EL3s formal SOI to examine her form of mind as it presents in that moment in time to provide an overall interpretation of the SOI as well as a comparison with the Grid interview.

4.4.1.10 *Subject-Object Analysis*

What was particularly evident in the case of EL3 relates to Kegan's (1982) position that personal and professional development conceptualised within the movement of the subject-object relationship is what constitutes the construct of leadership as developmental. This was particularly visible through the consistent level of self-awareness of EL3 in her bridging both personal and professional development expressed through her experience in her work organisations. In this context EL3 clearly highlighted Kegan's (1982) distinction about the evolutionary nature of his theory of the 'person' being an individual that is *embedded* in the life surround from which it is *differentiating* from as an individual reflected in various transitions within forms of mind.

EL3 had worked in two different organisations since her Grid interview took place and it is useful to be reminded in this context that while the orders of development reflect the internal aspect of the individual self in Kegan's (1982) constructive-developmental theory, the interdependency of its external aspect is reflected in the notion of the holding environment. McCauley et al. (2006) argues that little research in leadership has focused on the context

variables in the holding environment on developmental orders of mind and leadership in organisations which in this regard is of particular note in this case in terms of the degree of impact or influence on EL3 of the holding environment across these different organisations and her LOC.

The three extracts across the two organisations shown in table 4.12 illustrate this point. It is also worth noting that there are two recurring themes for EL3 from her first interview in terms of her own internal meaning making when dealing with conflict or potential conflict situations which are linked to external figures representing authority both personal and professional. While EL3 had 4th LOC leadership developmental capacities such as an ability to challenge existing processes (Eigel, 1998) she was still not comfortable with managing conflict and will if she could avoid it which indicated socialised LOC. In this sense EL3 was reflecting a 4(3) type of developmental transition from her first interview as while these external events still had a hold on her, they did not stop her from acting on a number of different scenarios in the interview albeit with a conflicted self (Berger-Garvey, 2012).

Transcript	LOC
Yeah. And even with my last boss if I take examples of where you know my last boss in XYZ she had wanted to run a workshop and I ... Basically I think she had wanted me to read all this research and to tell the answers. But I framed the workshop that we would explore a few of the statistics together and we would really tease it out and she got really frustrated in the meeting, and she shut me down and it was a team of six and we had a few hours planned together to do it. But because she had shut me down in that way, I had ... I couldn't speak. It literally closed over my sound pipe, and I can't recover from that. I go completely red and what's interesting is that this is someone who has ... She has struggled with people working with her before and had people moved off her team and everything ... So that evening we were doing another meeting about something else, and she said oh well done this morning. And I just started crying, I was like X, you're completely disappointed in me this morning. I did not deliver what you wanted me to deliver. I was delivering in a way that made sense in a way for me to deliver it that included everyone in the process of it. I did do the homework, but just how you shut me down. She said oh my god, and I just got so upset because that six-year-old in a playground, hiccupping and cannot even talk upset. And then when she asked everyone for feedback on the team, they all went yeah, you totally shut her down. So then on the Monday, so that was on the Friday, on the Monday, she apologised in front of the team, said I really must apologise. I have asked everyone for feedback and really, I wasn't.....then I felt oh my God such a deal has been made of this and I still felt like the basket case because something just stops me, I go red, my voice, I just can't verbalise it...	4/3
And there was talk at it that should we put in an objection to this, and I just couldn't stay silent. I was why? That's business. That's competition. Let's just focus on our own operations and be the best and do what we do well. And there was one kind of brash, one kind of ... He's probably a heavy hitter and he said no, what you have to do, you have to look after your own interest, and I felt like he was swaying the CEO a bit towards like this is totally acceptable that you would put in an objection. And that you would fight this just because it may threaten your business. And I just thought it was underhand and I thought it was so ... That was where I actually ... A lot of the time what happens is that I would have a conviction and I won't verbalise it because you're the only voice, it's just you, you're the only one who would voice it. But at this point, I said no, there is a smell off that. There's just a smell of that. I don't think it's the way to tackle this.	4
However, what I do like and what it does ring of the back to the charity thing, if you see a possibility like maybe we should do culture night or this, you can make a case for it and you can make it happen. Whereas in XYZ in that kind of organisation, that corporate organisation, I couldn't even be the spokesperson for the project I was leading. It had to be the PR person, so. There was a foot on your head...	4

Table 4.12: Summary of EL3s overall SOI

In the first extract EL3 made the decision that she would frame a meeting in a certain way doing it as she saw fit irrespective of knowing her manager wanted her to do it a different way and was showing her dominant 4th order LOC by acting on her own internal judgement and decision making in how she would approach the meeting while equally conflicted and torn inside herself by feeling shut down by the manager in the meeting (Berger, 2003). Correspondingly while EL3 could be internally driven, she also demonstrated a socialised aspect which in this case showed up in her experience of a threat to the coherence of herself (Drago-Severson, 2008) in the context of not meeting the expectations of her manager in this event.

It is evident in this extract how the combined themes of conflict and authority are in the mix here in terms of EL3s response and is evidence of the vestiges of a 3rd order LOC having an impact on the structure running the meaning making of EL3s form of mind as a 4(3). Furthermore, if EL3 was operating from a 5th LOC she may have been more aware that her own deeply held frames of reference or mindset was just one mindset. In this instance then, EL3 might have adapted a different approach to the meeting that would accommodate both her own ideas about how to conduct the meeting and the needs of the manager for another way of delivering on the meeting. Therefore, this is an example of how 4th LOC can struggle with the limits of their own beliefs irrespective of how noble or humble they maybe metaphorically speaking. Notwithstanding this possibility of perspective taking as form of leadership, from EL3s account of this situation, it did seem from others present that the manager did shut EL3 down. This leads to another aspect of understanding the relationship between the internal individual self and the interconnection to the external holding environment as part of subject-object developmental movement in forms of mind and meaning making.

For example, in terms of the nature of the holding environment of this corporate type of organisation on EL3, to what extent is this holding environment creating the conditions for EL3 who demonstrated lots of initiative and drive in her work feeling held back and constrained by the curriculum of the organisation (Kegan, 1994)? Equally so, as a holding environment perhaps it sees no need within itself for such initiative and growth reflected in turn in its leadership approach. This finding resonates with Berger-Garvey (2012) who notes that while LOC grows over time, such growth is only important to the demands made on the leader or in this case the organisation. However as stated by Hesling and Howell (2014) there is lots of evidence for at least a 4th LOC as needed to be effective leaders in modern organisations.

EL3 also appeared to have the characteristics of a 4th LOC while equally she may have needed some help with other aspects of this LOC particularly in managing and dealing with conflict to become more fully embedded as a 4th LOC. When EL3 moved to the hotel group in the second extract her 4th LOC was very evident in her capacity to speak up and challenge rather than unconditionally follow social expectations and demands typical of a 4th LOC. (Barbuto and Millard, 2012).

In the SOI, EL3 described being at a Board meeting and while she wondered if it was her place to say anything on an issue being discussed around a new business in the locality as

she was not on the Board, she nevertheless did speak up. In this regard EL3 demonstrated a 4th LOC in that she can uphold her own belief system, can take a stand, and regulate boundaries on behalf of her own internal values (Kegan and Lahey, 2009) and is the author of her own ideologies (Berger, 2003). It is of note that EL3 had found her voice and was not deterred by any internal conflict when stating her opinion irrespective of the power differentials in this context. This suggests that EL3 had transitioned further into a more self-authored 4th LOC as in this example EL3 also expressed the importance of seeing other perspectives on the topic under discussion as necessary to generate best ideas and decisions collectively.

In the third extract EL3 appeared to be comparing her sense of suitability in terms of the fit for her between the culture of the hotel group and the corporate environment of her last work organisation. EL3 acknowledged that the culture of the hotel group as an organisation was not a natural fit for her as she described its culture as living in a past tense in some of its attitudes and in terms of its overall reward system. However, EL3 favoured this organisation as being better than the corporate organisation due to the fact that she had more room to contribute and to grow whereas in the previous organisation she was bounded within the context of a corporate organisation. This extract shows what Kegan (1982) describes as the essence of constructive developmental psychology in how it reconceives the whole question of the relationship between the individual and the social by being mindful that distinction is not absolute, and that development is intrinsically about the continual settling and resettling of this very distinction. This was evident in this research as EL3 described the distinctions between the culture of two different organisations and the advantages and disadvantages of both in terms of the nature of their distinct holding environments and their alignment or lack of it with her LOC.

As previously stated, during the course of this research, EL3 also experienced a considerable amount of personal and professional change. It is as argued by (Kegan and Lahey, 2009) that it is these types of tensions and the dissonance that can occur as one navigates through them that can create the potential for the dynamic equilibrium or dis-equilibrium for the emergence of new levels of mental complexity. In this regard, EL3 appeared to be in a number of holding environments which according to Kegan (1994), we live in a succession of holding environments and the LOC is a function of what part of us as an individual is

differentiated and what part of us is *embedded* in those holding environments at any given moment in time.

Within this overall analysis EL3 demonstrated a dominant 4th LOC in both interviews with evidence of a socialised mind also present but in this second SOI interview, the socialised LOC was fading. However, when the socialised LOC was present it tended to be focused around areas of conflict both in personal situations and professional relationships and when dealing with perceived authority figures in both family related and organisational settings as holding environments and therefore EL3s form of mind was scored in the range of from a 4(3) to a 4.

4.4.2 Application of Laloux Stages of Organisation derived from SOI and LOC analysis

EL3 had worked in three different organisations from first doing the Grid interview and then the SOI interview with each of them distinctive in their industry and the presenting culture as EL3 perceived it. This in turn is reflected in Laloux's (2014) suggestion that different levels of consciousness are made visible through the culture, processes, and systems of the organisation. The primary health organisation that EL3 worked in was a public service organisation which in Laloux's (2014) model is a *Conformist Amber* stage of organisation where the decisions are based on conformity to social norms. Furthermore, in this type of model decisions are based on stability of formal roles and processes.

EL3 was not actively employed as a member of the primary health organisation but rather working on its behalf and in that capacity was not subject to rigorous processes. She was working more as an external resource to the health care organisation through the Board although she did find herself subject to its *Conformist Amber* hierarchy in her conflict around the fundraising issue. She described that experience of being firmly put in her place in the sense of hierarchy within the system and processes mirroring a *Conformist Amber* model of organisation. Within her own role identity, as she was working more as an external consultant which in that context seemed to enable her to work from a *Pluralist Green* model of decision making in Laloux's (2014) framework in the sense that she was empowered, and values driven as an independent self-authored 4th LOC while working for the organisation.

The Theatre company from EL3s experience was run as a commercial entity that suggests an *Achievement Orange* stage of organisation in the sense of a paradigm driven by effectiveness and success as a corporate organisation. Equally within the hierarchy of this organisation there was clear demarcation of role identities, and its systems and culture were more reflective of a *Conformist Amber* type of model of organisation which may have been a function of being a public service organisation being run as a commercial enterprise. This became evident for example when EL3 talked about how she could not be involved in the PR aspects of her projects as that was some-one else's role. In this sense EL3 described a sense of a firm hold on her in terms of what she could and could not do which she found restraining. As Laloux (2014) suggests, organisations can have elements of these different organisational paradigms living side by side in any one organisation.

The hotel group seemed to be an *Achievement Orange* model operating to meet its broadened portfolio and diverse business development plans with the traditions of a *Conformist Amber* stage evident in its roots as a family business anchored in social norms and subject to ideologies which it views as legitimate. Reflecting this model, the organisation had clear formal roles with top-down command and control from the CEO. Laloux (2014) points out the stage an organisation can operate from is the stage through which its leadership looks from and that an organisation cannot evolve beyond its leadership stage of development.

This recalls Probert and Turnbull James (2011) reference to the *leadership concept* where the CEO mindset is usually reflected in the culture and values of the organisation. This seems to be the case in this organisation in examples by EL3 where the underlying deep-rooted attitudes to women and pregnancy and their impact on the business is upheld as a valid point in the first instance by the CEO when a statement to that effect is made by another Director in the company was brought to the attention of the CEO.

These types of attitudes were part of what EL3 referred to as the company not being a natural fit for her yet equally it was these types of attitudes where she was also able to find her voice and, in that sense, provided an optimal conflict (Kegan and Lahey, 2009) for a potential for developmental movement in her subject-object developmental LOC.

4:5 Case Four: Organisational Context and Executive Profile

Case 4 is a financial organisation operating as a commercial entity employing 250 employees. EL4 was a man in his mid-forties and a Chartered accountant with significant experience working previously as head of a business unit in a global organisation. He had recently joined this Irish financial organisation at management level when doing the first repertory grid interview and had become a Senior Manager when doing the SOI interview. He has an undergraduate degree in Commerce and also undertook a number of post-graduate courses in leadership.

4.5.1 Repertory Grid Eyeball Analysis

As can be seen from (table 4.13) what is of note in this case is that the EL4 took a very systematic almost mathematical approach to the grid which could be a function of being a Chartered Accountant and being familiar with numbers. Indeed, EL3 stated at the end of the interview that he found this approach to be very practical and helpful to understanding the conceptual ideas inside the grid rather than simply using language.

For example, EL4 recognised that by looking purely at the eyeball visualisation of the perceptual matrix that there was no construct where he was higher than he was three years ago. Furthermore, in looking at the patterns across all the constructs except one he identified himself now as being lower than where he was three years ago aligning with his organisation now.

In this regard, it was evident that EL4 was demonstrating aspects of 4th LOC in his capacity to be reflective on his own LOC and perspective on the organisation he was presently working in (Waddock, 2006). He also demonstrated evidence of a socialised LOC in both adapting to the organisational norms and secondly in terms of allowing for any dissonance in his conflicts inside himself as to the nature of the organisation by reassuring himself with the learning opportunities and new skillset it was affording him.

	Variables						
	M y s e lf N o w	M y s e lf T h r e e Y e a r s A g o	M y I d e a l S e lf	M y O wn O r g a n i s a t i o n T h r e e Y e a r s A g o	M y O r g a n i s a t i o n N o w	M o d e l O r g a n i s a t i o n	
Level Five Dimension of Meaning							Level One Dimension of Meaning
Independent Thinker	3	4	5	4	3	5	Faithful Follower who seeks Direction
Interdependent Thinker	4	4	5	4	3	5	Aligns with own Tribe Consensus
Sets Agenda	3	4	4	4	2	4	Seeks Approval for Agenda/Solution
Problem Solver	4	5	5	5	3	5	Standard Solutions Applied
Problem Finder	3	5	5	4	3	4	Team Player
Comfortable with Ambiguity	4	4	4	4	3	4	Uncomfortable with Uncertainty
Holds Multiple Perspectives	4	4	4	4	3	4	Holds to own Beliefs and Ideologies
Open and Curious	3	4	4	4	3	4	Rigid and closed
Can Take Responsibility within Relationships	4	4	4	4	3	4	Externalises to Responsibility
Internalises own Authority	3	4	4	4	3	4	Externalises to Authority
Manages Conflict Well	5	5	5	4	3	5	Torn in Conflict Situations (Can't Decide)
Delegates	3	3	4	3	3	4	Controls
Empowers	3	3	4	3	3	4	Holds on / Holds back the Reins
Adaptive Leadership	3	3	2	3	4	2	Technical Leadership
Can Voice and Act on own Values	4	4	4	3	3	4	Subject to Organisational Values/Culture
Leads to Learn	2	2	2	3	4	2	Learns to Lead

Table 4.13: Case 4 Repertory Grid Eyeball Summary Analysis

In this overall context, the case is of note in terms of looking at the phenomenon of leadership as a relational construct that is both local and culturally situated (Hosking, 1988, 2007).

The next sections outline EL4s highest and lowest constructs together with the qualitative data available to deconstruct further his LOC.

4.5.1.2 *Comparison of Highest order Constructs for Self and Organisation*

What is of note as can be seen in (table 4.14) is the levels of differentials in the numbers across all three constructs as EL4 scored his organisation now well below himself and particularly in construct 2. Further the only construct within his three highest constructs that he scored as a 5 is the first one. These constructs will be deconstructed further to identify what is the meaning making of this scoring as reflected in his LOC.

Highest Constructs	Self as Elements	Organisation Comparison
1.Manages conflict well versus torn in conflict situations	- Self Now: 5 - Ideal Self: 5 - Self three years ago: 5	- Organisation Now: 3 - Ideal Organisation: 5 - Organisation three years ago: 4
2. Problem solver versus standard solution applied	- Self Now: 4 - Ideal Self: 4 - Self three years ago: 4	- Organisation Now: 1.5 - Ideal Organisation: 2.5 - Organisation three years ago: 1.5
3.Comfortable with ambiguity versus uncomfortable ambiguity.	- Self Now: 4 - Ideal Self:4 - Self three years ago: 4	- Organisation Now: 3 - Ideal Organisation:4 - Organisation three years ago: 4

Table 4.14: EL4 Comparison of Self and Organisation Highest Constructs

4.5.1.3 *Manages Conflict well versus Torn in Conflict Situations*

EL4 scored himself as a 5th LOC in dealing with conflict in himself now, himself three years ago and ideal organisation with an equal recognition that those numbers are lower on this construct in his present organisation. However, it was apparent that he was not operating at a 5th LOC as while he could reflect on the difference in his present organisational holding environment compared to his previous organisation, he did not appear to be showing evidence through the interview of taking an objective look at ways of knowing. For example, in this type of organisation if EL4 were looking at it from a 5th LOC, he would have looked at its market ideology as just one system of ideas among many possible systems (Bochman and Kroth, 2010). However, while EL4 reflected on the organisation, he did so more inside its present paradigm of meaning making in terms of how it conducts its business rather than any ideology underlying that meaning making which are more evidential of a 4/3 LOC.

In this context the concept of habitus (Bourdieu, 2005) highlights the constant replication of the status quo as a reproduction of the collective outcome of absorbed social norms in

individuals inside organisations expressed as deeply ingrained and embodied habits of thought and action.

I guess I've been a little ...where I currently work, I've been a little bit institutionalised I suppose you know and maybe being forced to conform a bit more yes? Like things are so busy and so much to do that some battles are just not worth...some battles are just not worth fighting and so you kind of.... that's not to say you give in to everything, but I wouldn't be as competitive as I used to be, yes? Now you'd say ok, just get on with it, get.... because I'm learning a whole new set of skillsets, yes? I do but I've things to learn, so you have to bite your lip at times and say, listen I'll keep my mouth shut about that, it's not that important really, ok? (EL4/4)

Within this EL4 appeared to show a socialised LOC in that he was thinking about his thinking (Drago-Severson,2008) and making generalisations about how he has been institutionalised while reflecting on how he had learned to act or not act in 'biting his lip'(EL4/4) rather than questioning some of the processes of the organisation. Equally EL4 appeared to be avoiding unnecessary conflict as he saw it because that may not have been taken well by the institution that he was working for and their norms of expectation reflective of a socialised LOC. In this socialised LOC interpersonal conflict is experienced as a threat resulting in avoiding conflict because it has presented a risk to the loyalty of the institution (Drago-Severson, 2008). While EL4 may not have overtly felt a loyalty or a threat, he was recognising that he was yielding to the organisations norms and in this context exhibiting socialised LOC within an overall 4/3 LOC.

4.5.1.4 Problem Solver versus Standard solution applied

In this construct, he referred to his previous organisation where he had a lot more flexibility operating as a manager rather than the flat structure of his present organisation where he was required to manage a portfolio and deliver results. For EL4 in this context while he had a capacity for a 4th LOC in terms of being internally driven in decision making about meeting the goals there was no push for that in this organisation and therefore, he aligned with that as a norm and in this regard was reflecting a socialised LOC.

I'm being forced to move towards the bigger picture yes, but before I would have been more of a manager, where I would have had more responsibility for building up from a base yes? Whereas now I've such a flat organisation, I'm not a manager, I'm one of many kind of people who are just.... were judged on essentially achieving results, yes? And there isn't any room for kind of ...they don't really want to improve the process that much do you know what I mean? A process has been imported, that's

the way we're going to do it yes. And you just kind of get on with it yes? We're not kind of we're not worried about building in significant improvements and processes along the way (EL4/8)

This construct is of note in terms of the degree to which an individual has agency inside these types of results driven structures and the degree as EL4 stated as to whether any innovation in process is required. However, the evidence in this study suggests that in terms of constructive development theory and leadership, the capacity for its leaders to think beyond the results as well as to how one got to those results is an equal imperative for modern organisations. Furthermore, according to Drago-Severson and Blum-Stefano (2017) the developmental trajectory of adulthood and anticipating the developmental diversity that will occur in nearly any team, group or organisation can help to differentiate the supports and challenges we can offer to each other as we work in the context of managing complexity, examining assumptions, and relating across lines of difference.

4.5.1.5 *Comfortable with Ambiguity versus Uncomfortable with Uncertainty*

Again, what is of note as observed by EL4 is the consistent lower scores on these constructs in terms of EL4s organisation now as illustrated further in the following interview transcript.

True, yes and I have learned I'm being....and I kind of acknowledge I acknowledge that to different roles, so like.... but if you ask me, would I yearn for my previous.... I would probably, as I said to you at the start, I probably yearn for a bit of my previously freedom yes. But I do know what I'm it's good discipline for me as well. What I'm doing now is to learn a new set of skills yes? That hopefully will then be useful to me in the future, yes? (EL4/10)

This could be reflective of EL4 adaptation to the cultural demands and norms of the organisation which in Laloux's (2014) framework is reflective of a *Conformist-Amber* public service type of organisation with clear command and control on the processes and the repetition of those processes. It seems from these numbers he had chosen to take a step back in his form of mind to adapt culturally to the organisation efficiencies approach and is illustrating a socialised LOC in this context.

4.5.1.6 Comparison of Lowest Constructs for Self and Organisation

In terms of EL4s lowest constructs, it is worth noting in (table 4.15) that constructs 2 and 3 are scoring the same across all the elements for both self and organisation. Equally of note is the distinction between EL4s lower numbers for self in comparison to organisation for number 1 construct. These are now further deconstructed for insight into the meaning making of his LOC as evidenced inside EL4s dimensions of meaning making within them.

Lowest Constructs	Self as Elements	Organisation Comparison
1. Learn to lead versus lead to learn	- Self Now: 2 - Ideal Self: 2 - Self three years ago: 2	- Organisation Now: 4 - Ideal Organisation: 2 - Organisation three years ago: 3
2. Delegates versus control	- Self Now: 3 - Ideal Self: 4 - Self three years ago: 3	- Organisation Now: 3 - Ideal Organisation: 4 - Organisation three years ago: 3
3. Empower versus hold back the reins.	- Self Now: 3 - Ideal Self: 4 - Self three years ago: 3	- Organisation Now: 3 - Ideal Organisation: 4 - Organisation three years ago: 3

Table 4.15: EL4 Comparison of Self and Organisation Lowest Constructs

4.5.1.7 Leads to learn versus learns to lead

EL4s numbers on this construct appear to be a complete outlier to his sense making of the numbers for his organisation now across the other 15 constructs and elements. The interpretation could be that EL4s perception of these distinctions was understood as his organisation now learning to lead based perhaps in the nature of its purpose as a tailor-made organisation set up for a defined purpose of selling debts recovered as assets and already leading as a self-authored LOC within that sense making.

His numbers for learn to lead for himself as a 2 and ideal organisation as a 2 learning to lead is perhaps perceived as unnecessary in a profession such as accountancy where the numbers are the numbers in a clear-cut logical sense making. However, his meaning making here is not clear and there is no evidence in the data to clarify this. What is also somewhat paradoxical is that towards the end of the interview, he did express a wish to be on the side of the pole of dimension of meaning of the perceptual matrix that would be more aligned with the constructs on the right hand side, which this construct of *lead to learn* sits, as his expressed wish to be higher in these constructs as a general principle so again somewhat of a contradiction inside this particular construct and his associated meaning making.

The answer may lie in another one of his lower constructs which is technical leadership versus adaptive leadership. Here he scored his ideal self as a 2 and his ideal organisation as a 2 and his organisation now as a 4 which would seem to add some veracity to the interpretation of his sense making of these constructs in terms of financial competencies perhaps as opposed to people and leadership constructs. Finally, the two other related lowest constructs have similar scores and are analysed together.

4.5.1.8 Delegates versus Control and Empower versus Hold back the reins have the same numbers

He scored his ideal self and his ideal organisation as a 4 and his organisation three years ago at 3 and his organisation now a 3, himself now and three years ago also a 3. These numbers seem to reflect the dichotomy between an individual wish to grow into another level of self whilst the nature of the organisation both in the past and now are more based on control which could be a reflection of the nature of accountancy in a financial based organisation. His final comments on which pole of the perceptual map he would prefer are helpful in clarifying his form of mind.

This pole? I think the left pole is a lot more liberal, open, and interesting yes. The one on the right, the pole on the right is a bit a bit wimpish, a bit wimpish, a bit.... you know you see that.... a conform.... conformist. (EL4/16)

And

In an organisation, it's the sum of the individuals. A powerful organisation is an organisation that finds enough space for all the individuals yes. Now you don't need.... you don't want all robots yes in an organisation. Now you do need a certain levels of let's not call them robots, but of conformists, yes? But I wouldn't see myself as fitting into that category and I wouldn't want to be in an organisation where they expect me to be a conformist (EL4/16)

And

And I think that's even.... hence the reason my current role and I get frustrated there, because there is a strong emphasis on conforming. (EL4/17)

And

If you stifle innovation, people's ability to pick their head up, to come up with something new and you don't....and you just stifle the reward, the opportunity of reward, you can't break individual.... if you take it away from the individual, I think you're you end up getting people who are incredibly cynical and incredibly it can be counterproductive. So, people then use that energy in other ways. So, I think it's...I wouldn't ...well that's ...maybe I'm going on and on (EL4/17).

In this extract EL4 talked about the consequences of conformist thinking versus conformist rules where he demonstrated his 4th LOC by describing and taking perspective on this very distinction. He talked about the role of the individual and the dangers inside an organisation that does not give breathing space perhaps for people like himself that have 4th order capacity in their LOC already available to the organisation. He described what can happen to these individuals in terms of diverted energy which is an echo of Kegan and Lahey's (2009) idea in *Immunity to Change* when 'hidden competing commitments' keep the available energy dormant inside these hidden commitments rather than being released into new levels of mental complexity that would enable the organisation to be more successful in achieving its goals while developing itself through and with its people.

These observations of EL4 would seem to confirm his self-authored 4th LOC showing a clear ownership of his own ideology (Berger, 2012). Equally it is argued by the author of this study that the elements that he described of how he experienced the workings and the mood of the organisation, his adjustment to that by biting his lip and focusing on what new skills he was learning as a means of dealing with some levels of cognitive dissonance in this context suggests the presence of elements of a transitional socialised LOC. Within this overall analysis his LOC is scored as a 4/3.

The next section provides an analysis of EL4s formal SOI to examine his form of mind as it presents in that moment in time using the transcript interviews to provide an overall interpretation of the SOI as well as a comparison with the Grid interview.

4.5.1.9 Subject-Object Interview Analysis

In this interview EL4 had been in the same organisation as in his Grid interview for some years and as can be seen in (table 4.14) he showed a developmental move from a 4/3 to a more embedded 4th LOC. This was evident in his willingness to confront the type of decision making that was happening and the way those decisions were made. In this context there was no longer a sense of EL4 being automatically loyal to the institution as a socialised LOC (Drago-Severson and Blum-DeStefano, 2014) as evidenced in his active disagreement with the powers that be in his organisation based on his own internal ideology.

Throughout the interview the main issues he was focused on were to do with the approach of the top leadership to making decisions not being based on the substantial issues for each case but rather a processes-based approach that was largely driven by the mood of the top

person making the decision and form following substance attitude that he described as pervasive in the organisation's decision making.

This approach to the decision making had an impact on him in that there was no listening for his point of view and no opportunity for developing any leadership skills inside this type of environment. His observations on the culture of the organisation evident in its lack of principles of care (Simola, 2012) are of note where he was describing it as actively cruel in its decision making which was almost seen as badge of honour in the organisation in terms of one's capacity to 'put the boot in'(EL4/8) and was at odds with his own internal value system demonstrating a self-authored 4th LOC.

Furthermore, in this interview, EL4 showed a clear 4th LOC in that he was willing to disagree actively with this type of decision making and acknowledged that it had probably had an impact on his career opportunities within the organisation. This has echoes again of Probert and Turnbull James (2011) observations of the impact of the CEO on the culture, mindset, and values of an organisation. It is also mindful of Goleman et al. (2001) reflections on the relationship between the science of moods in effective leadership and its impact on performance outcomes.

Correspondingly Goleman et al. (2001) suggest that given this impact of mood that there is an onus of responsibility on leaders to put the hard work in to develop more self-awareness within this context to improve performance outcomes. In this regard, within its own paradigm of performance outcomes measured inside results, it could be argued that, based on the reflections of EL4, that this organisation is missing a beat in the sense of an opportunity to get even better performance outcomes.

These thoughts of EL4 were all very clear criticisms of the organisation based on his own internal ideology (Berger,2003) as 4th LOC and is interesting the degree to which this organisation and the people working inside of it follow the leader and, in this case, doing so in the sense perhaps of a fusion of a socialised LOC with the organisation ways of doing things. This has echoes of Wolfe's (2012) suggestion that an organisation and the individuals within it cannot behave or operate in ways that are contrary to the context framing defining the organisation.

Transcript	LOC
The first one to speak about is strong stand or conviction. In my work in the last number of years, I would be very strong on being fair with people who have been in financial difficulty. Yes? I would have stood up on a number of occasions and insisted that they would not be messed around, you know. Unfortunately, in the banking/debt recovery environment, a business environment, the culture can be very cruel at times. Yes? And oftentimes the people who are appointed to kind of reasonably high positions can be quite nasty really and quite moody, and depending on the mood they are in, decisions are made and at times, you really have to say no, I don't believe in that. You are wrong. And unfortunately, at times then, it's not liked that you would object, but I had to do that a couple of times and I don't think it's helped me inside where I am, but I have to say banking can be nasty. Yes? And an awful lot of people can try to make careers out of other people's misfortune and then at being seen to be putting the boot in at certain times. Yes? And almost at times like can almost be a measure of are you prepared to put the boot in? Yes.	4/3
But for me, I'm talking about my own experience. I guess there has been a significant change in that, I have to say. Now, of course, where I'm currently working is a very special environment, very particular environment that decisions needed to be taken and it needed to be tough calls, but my view is that on occasions in a banking environment, not all the facts are considered. And So, you can see why we got ourselves into such a mess. Yes? Because a lot of people up the ladder, even though it's quite a flat structure, but you can see why people are just almost saying well, no point in proposing that because I know that X, Y, Z won't like that. Yes? And maybe the proposal should have been made in that format. Yes?	4
I'd be pushing back a bit. I'd be fighting back and pushing back a bit on the excessive review processes going on. Yes? I'd say I'd be fighting my corner with, you know, if X, Y, Z is on the phone talking to Joe Duffy about, you know, oh, sure listen, you know, so and so got ripped off. No, you really need confident people getting on, you know, fighting back there. Yes? And saying, 'Listen, back off'. To fight the corner. But within the organisation, I just think there's a need for just bringing more people into the decision-making process.	4

Table 4.16: Summary of EL4s overall SOI

In EL4s final reflections in this interview he suggested that the organisation needed to have more people involved in the decision-making process and to be less sheepish. He did say when asked what he would do differently that he would encourage a culture of people finding their voice and fighting back. In the context of himself, he had done that within the limits of his role in the organisation by speaking up to authority in terms of challenging the existing processes as a 4th LOC (Hesling and Howell, 2014). These behaviours the author suggests are indicative of a clear 4th LOC where the perspectives and desires of the socialised mind have been both integrated and left behind in the self-authored LOC (Kegan, 1982).

This case is a useful insight into the argument by (McCauley et al.2006) that very little research focuses on the dynamics of developmental movements in the context of the impact of context variables such as an organisation holding environment on the developmental order of mind and leadership in an organisation.

In the first Grid interview there was a clear impact on EL4, and his developmental order of mind as identified by himself in looking at how all the numbers for all but one of the constructs for the variable of his organisation now were lower than three years ago. As the qualitative data uncovered this seemed to be due to a very significant impact of the culture of the organisation on EL4 with its focus on processes and a top-down hierarchy with little scope for EL4 to contribute to the decision making. This seemed to be handled by EL4 in the first interview by adapting somewhat to the culture and equally EL4 had dealt with the cognitive dissonance this gave rise for him by looking to the benefits of learning new skills which would be useful in his career.

In the SOI interview it became evident that the culture and the leadership style associated with the holding environment had left him feeling with less leadership skills than in his previous employment and ultimately EL4 wanted to move on from the organisation in terms of looking for new opportunities elsewhere although concerned about his age for potential options he had to make such a career move. He was clearly making judgements on the organisation now and showing clear personal standards and an internal value system inside his interpersonal connections in the organisation which as (Strang and Kuhnert,2009) describe are aspects of meaning making and leadership as 4th LOC. His career and role were clearly still important to him, and his professional identity was also important both being linked with a self-authored 4thLOC (Waddock,2006). He had found his voice developmentally between the two interviews which may suggest something about EL4s disposition as the culture had not changed but his perspective had inside the intrapersonal and interpersonal tensions he had experienced . This resulted in a move from a 4/3 of the Grid interview to a clear 4th LOC in the SOI interview, a process described by Barbuto and Millard (2012) as life experiences creating dissonance or tension in leaders, who then transition to the next LOC.

These observations that EL4 made on the organisation in addition to his own stated disposition in the Grid interview of not being a conformist in thought are all variables that (Kegan, 1982;Wilber, 2000) suggest influence the rate at which someone passes from and through one stage to the next in adult developmental theory. These aspects of EL4 are evident in his own sense of self identity in professional terms as a chartered accountant but equally connected to his personal sense of values as a person who cares and who

wishes to care by bringing these values into the nature of the decision making in the overall culture based on respect for those inside and outside the organisation.

Furthermore, it is worth noting regarding EL4 and this case, Berger -Garvey's (2012) suggestion that while personality theories can be useful in helping to understand a person's disposition, what is valuable about adult development theory such as Kegan's (1982, 1994) is that it allows for more nuance in the wider cultural and holding environment as influencing factors in understanding someone's response to relationships, events and decision making in organisations. In this context, the structure running the meaning making of the mind of developmental theory helps understand assumptions and perspectives beyond a categorisation of personality theory which has its own value. However, the distinction of adult development theory is not a categorisation as in personality theory but an evolving self (Kegan, 1982) encompassing more of the cultural and organisational influences on the mindset because the person is both 'individual' and 'embedded' as a process of evolution and transition of LOC.

There was no evidence of 5th LOC because EL4 did not show evidence of addressing the limits of a 4th LOC in terms of any open questioning of the underlying assumptions of the system of the organisation or his own context framing. There was an implicit sanctioning in both interviews of the market ideology as a means of dealing with the clients and in this sense no evidence of 5th LOC that would show a capacity to take a perspective on a system as one of many possible systems (Bochman and Kroth, 2010).

In the SOI interview he was clearly embedded in a 4th LOC suggesting paradoxically that the organisation holding environment may have both created and enabled an optimal conflict for EL4 to move beyond a 4/3 where he wished to leave as he felt he could not sustain his own frustration at the lack of opportunity to grow through the constraints of the culture and leadership style of the organisation. This would seem to show evidence of Laloux's (2014) point that a stage of an organisation's development is reflected in the stage of its leadership. In this case EL4 can make meaning beyond the stage of the organisation, and it is precisely because it cannot facilitate this in its own leadership concept (Probert and Turnbull James, 2011) that he wished to move on to pastures new career wise. This could be an example of what he himself described as individual's not getting space to contribute in a way necessary for their LOC, then results in their energy being diverted and no longer available to the organisation in perhaps a fully performative way.

This is what Kegan and Lahey (2009) describe as an immunity to change and its impact on both the individual leadership and the organisation effectiveness. Within this overall interview analysis, EL4 is scored as clear 4.

4.5.2 Application of Laloux Stages of Organisation derived from SOI and LOC analysis

The commercial focus of this organisation would signify an *Achievement Orange* stage of organisation in Laloux's (2014) framework in terms of the guiding metaphor of this model for effectiveness and success and the creation of value statements which this organisation had in terms of honesty and integrity in conducting its business. Equally it is primarily operating as a *Conformist Amber* model inside Laloux's (2014) framework in the sense of adapting market ideology to achieve its outcomes with an inherent top-down command approach.

Kegan and Lahey's (2009) focus is on leadership as a psychological developmental process in terms of building mental complexity as an expansive set of levels of consciousness. This organisation is not focused on such a construct of leadership but rather as it might argue for its own purposes it is set up as a *Conformist Amber* (Laloux, 2014) organisation focused on efficiencies through the repetition of processes and top-down command. As such, inside constructive development theory, a socialised LOC would be the best fit for leaders inside this type of organisation who as Hesling and Howell (2014) state are the type of leaders best suited to organisations in terms of faithfully following the prevailing meaning making of a given hegemony or constituency.

In this organisation the prevailing meaning making underwriting its mindset would seem to be anchored in the economic ideology of the associated with the Chicago School of Economics and Friedman's (1970) idea that the individual executive is an agent of the organisation and does not have the agency to make individual choices in the decision making about the moral or social impact of the decision making of the organisation. EL4 is at odds with the model of the organisation in that he has own internal values and ideas that he feels could be applied to the decision making in the organisation reflecting his 4th LOC.

The disconnect between the espoused values and the values in practice of the organisation seems at odds with the perception of EL4 who suggested that the decision making was based on form over substance, the mood of the top leadership and whether someone is liked or not and as such rather less than a fair case by case approach that EL4 would favour in the decision making.

While the organisation has *Achievement Orange* intentions about being commercial in its delivery of good ROI, it is operating from a *Conformist Amber* model of organisation in its leadership. While profit and loss are important equations to a financial organisation such as this one, the issue for EL4 appeared to be that these equations and numbers are made up of relationships and human choices that reflect morality.

EL4 the author suggests in this case is an expression of this morality and his expression of his leadership as an ethic of care (Gabriel, 2015) in his wish to take each case and portfolio within its own terms and merits. He could also be a good example of someone with a capacity for a 5th self-transformative form of mind if he were unconstrained by the limits of the organisation culture as a holding environment and be a good candidate for what (Drago - Severson and Blum DeStefano, 2017) suggest as a need for greater internal capacities necessary to meet social justice and equity needs in society.

4.6 Case Five: Organisational Context and Executive Profile

Case 5 and EL5 involves two organisations across the two interviews with EL5 working for a global biopharma company in the first grid interview in two different roles, one for four months as a Marketing and Sales Manager and then as an Account Manager. EL5 was part of a group of managers working in this capacity. In conducting the second SOI interview she had moved to a different global Pharma company as Sales and Marketing Manager and subsequently as Associate Sales and Marketing Director with responsibility for a small team of 8 Sales representatives within this unit in Ireland.

The espoused mission and values of the organisation is based on doing the right thing for the patients they serve around the world and to act on many fronts to reduce health disparities and improve outcomes in communities that are disproportionately affected by serious diseases.

She has an undergraduate degree in Chemistry, a Diploma in Marketing, a Diploma in Health Economics and has also completed a variety of leadership courses.

4.6.1 Repertory Grid Eyeball Analysis

In this case of EL5 the eyeball analysis of the LOC and its relationship to the organisation is based primarily on the QUAN data from a visualisation of the Grid. This was a function of unanticipated limited time frame for EL5 for the interview and within that context there was less detailed qualitative data available for all 16 constructs.

The constructs that are further deconstructed to help in identifying EL5s form of mind are used in a simultaneous analysis and discussion of both the high and low constructs due to the absence of detailed qualitative data.

Furthermore, the QUAL data available is primarily based on her meaning making about which pole dimension of the matrix she preferred and why and extracts of which are used in providing insights into her LOC based on some of her stated assumptions around the choice of pole as a dimension of her meaning making. Correspondingly, the approach taken in the analysis of the grid interview given this context combines the constructs rather than separately which gives more insight to possible meaning making by the EL5 of her QUAN scoring of the grid.

	Variables						
	M y s e l f N o w	M y s e l f T h r e e Y e a r s A g o	M y I d e a l S e l f	M y O w n O r g a n i s a t i o n T h r e e Y e a r s A g o	M y O r g a n i s a t i o n N o w	M o d e l O r g a n i s a t i o n	
Level Five Dimension of Meaning							Level One Dimension of Meaning
Independent Thinker	4	2	5	4	4	5	Faithful Follower who seeks Direction
Interdependent Thinker	2	1	3	2	4	5	Aligns with own Tribe Consensus
Sets Agenda	5	3	5	5	5	3	Seeks Approval for Agenda/Solution
Problem Solver	3	2	4	3	3	4	Standard Solutions Applied
Problem Finder	5	2	5	3	3	5	Team Player
Comfortable with Ambiguity	2	1	5	1	1	4	Uncomfortable with Uncertainty
Holds Multiple Perspectives	4	4	4	3	3	4	Holds to own Beliefs and Ideologies
Open and Curious	4	4	4	3	3	5	Rigid and closed
Can Take Responsibility within Relationships	5	4	5	2	2	5	Externalises to Responsibility
Internalises own Authority	4	3	4	5	5	4	Externalises to Authority
Manages Conflict Well	3	1	5	3	3	5	Torn in Conflict Situations (Can't Decide)
Delegates	2	1	3	1	1	3	Controls
Empowers	3	1	4	3	4	4	Holds on / Holds back the Reins
Adaptive Leadership	3	2	4	1	1	4	Technical Leadership
Can Voice and Act on own Values	5	2	5	3	3	5	Subject to Organisational Values/Culture
Leads to Learn	3	1	4	5	5	2	Learns to Lead

Table 4.17: Case 5 Repertory Grid Eyeball Summary Analysis

What is of note from the initial overview of the perceptual matrix of EL5 is that she saw an improvement across all the constructs for herself three years ago and herself now. Furthermore, EL5 identified some of the constructs to both herself now and her ideal organisation as already operating from a 5th LOC aligning in that context with her ideal self as 5th LOC inside these constructs.

Equally on some of the other constructs she has scored herself on the lower end of the scale in comparison to herself now and organisation now. The following constructs are deconstructed to seek further insight into the possible meaning behind these differentials in her scoring reflected in turn in the LOC of EL5.

4.6.1.1 Set agenda versus seek approval for agenda

In this construct EL5 scored herself now, her organisation now and organisation three years ago as a 5 while scoring her ideal organisation as a 3. Her scores and their meaning making was within the context of the nature of the industry where she suggested there was a distinction between the major shareholder not needing to seek approval because it was the major shareholder and that accounted for the number 3 in her scoring in this regard. The scoring of 5 within this dimension of meaning was where she was allowing for the inclusion of external stakeholders in that those setting the agenda are a combination of the medical profession and patients as well as employees of the company in a modern company all having a voice in this context. She saw a need for a balance between the major shareholder and the need to be inclusive of other stakeholders in setting the agenda accounting for her distinctions in her scoring as a dimension of EL5s meaning making on this construct. This distinction gives an interesting insight into EL5s alignment with the dominant ideology reflective of a socialised LOC in the sense of a normative following of the rules of how organisations function within neo-liberal ideology.

4.6.1.2. Comfortable with Ambiguity versus Uncomfortable with uncertainty.

This construct sheds some light on this interpretation of the first construct and its meaning making as in this construct, EL5 scored herself now as a 2, her ideal self as a 5, her ideal organisation as a 4 while her organisation three years ago and organisation now were both scored as a 1. These numbers are interesting because while she would have liked to be more at an ideal 5 on this construct, she saw her ideal organisation being at a 4.

These numbers in the context of this construct seemed to be a function of the distinction that EL5 made on the matrix of a focus on facts rather than people influencing the meaning making of EL5s numbers here.

EL5 suggested her meaning making for these numbers was based on the organisation as ultimately a commercial organisation with a focus on the bottom line and within this construct liked predictabilities with their worst nightmare according to EL5 being an uncertain market. Correspondingly EL5 distinction of a 4th LOC for her ideal organisation on this construct may be understood within this context framing in that she was looking through the eyes of the organisation perspective and its need for market certainties. From a subject-object theory (Kegan, 1982) point of view she was identifying with that prevailing assumption of the operating principles of the organisation while paradoxically wishing to see her ideal self as operating from a 5th LOC. This is in fact reflecting a more socialised mindset in EL5s identification with the organisation's assumptions while simultaneously EL5 recognised a need to have these types of capacities to be successful in the organisation and in her career in general.

This construct and its meaning making reflected in these differentials in the numbers is perhaps a function of EL5s stated wish in the interview to be on the left-hand pole of the perceptual matrix and its various constructs as she saw it as both the way to grow and where her future opportunities to be successful may lie in the capacity to have these types of constructs and mindset capacities.

I guess I just, from a holistic perspective the advantages of this side I think if you move more towards this end of the spectrum, I think to me and how I would see it probably growing as a person. Whereas the disadvantage of this side is, it could be limiting your growth, limiting your opportunities. I guess another disadvantage of this side, I guess if you were just to take the current external environment, that I would view this nearly as being on the weaker side of the fence to deal with the kind of current ambiguity and change and conflict in the current external environment, particularly from a commercial perspective. Whereas I think if you're good or moving towards this end of the spectrum, I think you're better able to deal with those kinds of current realities than you would be on the other side over here (EL5/5)

She is reflecting both socialised and self-authored LOC in this construct with the fusion of a socialised mindset with the ideology of the market while paradoxically the preferred pole of EL5 was all constructs of more self-authored LOC capacities needed for the future organisation and for herself. This is perhaps a good example of Kegan's (1994) point of

‘being in over one’s head’ and Kegan and Lahey’s (2009) argument for the need for an approach and understanding to leadership as developmental. Within such a psychological developmental process to understanding leadership complexities, leaders may not need more horizontal knowledge in terms of more skills and competencies of leadership. Furthermore, to this point these skills and competencies perhaps need to be balanced with more vertical developmental approaches (Allen and Wergin, 2009; Hesling and Howell, 2014) in understanding where one is making meaning from and why and so build a capacity to integrate new understanding into action. In that new understanding the premise is that one then has more choice resulting from such a maturing of the structures running the meaning making of the mind and from that place and space being able to see from multiple perspectives which is what a 5th LOC reflects.

4.6.1.3 Manages conflict well versus Torn in Conflict situations

In this construct EL5 identified an ideal self and ideal organisation as a 5 while identifying herself with having moved from a 1 on this from three years ago to a 3 now with her organisation both now and three years ago at a 3. This construct taken with the next one provides further insight to these numbers.

4.6.1.4 Delegates versus Control

It is interesting in this construct that EL5 suggested her ideal self on this would be a 3 and her ideal organisation as a 3. These lower end numbers may be a factor in the nature of the organisation’s industry in that the interpretation could be within the need for strict controls in terms of research and product protocols related to drug production while equally may be manifested and mirrored in the cultural assumptions of the organisation role identities.

4.6.1.5. Empowers versus Hold on /hold back the reins

Here she scores herself now as a 3 and her ideal self as a 4 with her organisation a 4 and her ideal organisation a 4. This is of note because she sees herself as behind the organisation now in this construct and as it were wanting to catch up to a 4. It is of note that these numbers are not hitting 5 across any of the variables in this construct which may be understood within where EL5 sees herself presently situated as a self-authored 4th LOC.

Equally a self-authored 4th LOC maybe where she understood the present and future organisational requirements were best situated for her leadership role inside the nature of its holding environment with no need to be operating from a 5th LOC within that context.

EL5s final reflection which focused on which side of the pole she most identified with is of note in establishing the dominant LOC of her meaning making of these numbers on the Grid.

Yes. I think on this side, just looking at some of the themes that are coming through, I think you're probably going to be more true to yourself and sticking with your own values if you're on this side of the fence and I guess some of the headings kind of speak to me more, say the open and curious and I guess ideally where I want to be, some of the headings speak to me more in terms of I want to manage conflict better, I want to be more empowering and be the interdependent and independent thinker. I guess it's where I'd aspire to be, aspire to be more on this side rather than on the range one side (EL5/ 6)

As EL5 suggested she identified her wish to be higher on some of her named constructs which could reflect a wish to transition to more 4thLOC within these constructs. Equally from other constructs as outlined earlier this aspiration may be motivated by both a wish to grow and an understanding that is where she needed to develop in order to be successful inside her organisation or any 21st century organisation. Indeed, it is often these types of traits that many organisations seek out in their aspiring leaders however the knowledge of them as concepts alone does not necessarily translate into practice in terms of LOC as integrated into a form of mind reflective of these either in the organisation as a model stage of development (Laloux, 2014) or within an individual executive leader LOC.

From this eyeball analysis and some of these limited qualitative thought patterns of EL5 the author would see EL5 as making meaning between a socialised LOC and a self-authored LOC, a 3/4 with the socialised LOC dominating as she is held within the perspectives and desires of the context framing of her organisation (Wolfe, 2010) reflected in her scoring through the lens of the organisation's perspective as her own. Within this context of the overall analysis of the grid interview, EL5 is scored as 3/4 LOC.

The next section provides an analysis of EL5s formal SOI to examine her form of mind as it presents in that moment in time using the transcript interviews to provide an overall interpretation of the SOI as well as a comparison with the Grid interview.

4.6.1.6 *Subject-Object Interview Analysis*

As can be seen in (table 4.18) EL5 discussed her understanding of her own leadership in the context of leading a team. EL5 described how she liked the buzz of leading a team and establishing a vision and having her team follow that vision. In that context she went on to clarify that the vision is from the top of the organisation, and it was her job to lead the team to realise that vision which in this case is to be number one for their drug in the market. This would suggest a socialised LOC in the sense of identifying with the authority of the vision of the company and reflects Barbuto and Millard (2012) distinction that leaders while they can co-construct their sense of meaning with others, they are not differentiated from them. In this context EL5 is not demonstrating an awareness of the nature of that vision one way or another but is as it were fused with it and in this sense as Kegan and Lahey (2009) and (Ignelzi,2000) point out her sense of self is fused with other expectations but is limited in her ability to both reflect on that shared reality (the organisational vision in this case) and how she may have been influenced by it in the first place.

In this regard, she stated that the organisation was answerable to the shareholders as a fundamental in her form of mind and that was a given in the sense of there was no questioning of its operating assumptions or a reflection on this perspective. This would suggest a socialised LOC in the sense of being fused with that meaning making of the function of the organisation and this is then balanced by her belief that the company is producing something of value that she can personally identify with as helping people. In this sense she could be showing a 4th order LOC by having an internal value aligned with the product of the organisation.

However equally when she went on to discuss which companies she would or would not work for, it was not clear whether that was based on an external collective consciousness of a socialised LOC or whether it was based on a connection to her own set of internally formed ideologies. Barbuto and Millard (2012) suggest that as leaders transition from third to fourth order they begin to separate from institutional boundaries and develop a sense of authorship however there does not seem to be evidence of her separating from the institutional boundaries of the meaning making of the organisation. In this context the socialised desires and perspectives are dominating when taken together with her earlier thoughts about

working for the shareholders and the vision from the top with no indication of an internal ideology that has arrived at agreeing with this but rather fused with it.

This is where other aspects of the interview can add insight into whether EL5 is operating more from a dominant socialised LOC or self-authored LOC.

Transcript	LOC
I guess the company identifies the vision, that this is our one key vision, you know. We have got this quite lofty vision statement, which essentially when you boil it down is, you know, to be the number one anticoagulant in the market globally. So, I guess that is the vision that gets handed down from on high and then we have to make it happen in the market then. And Yes. I guess we're quite good at it in terms of (name of organisation) that yes, absolutely. You know, we're answerable to our shareholders, but at the end of the day, we're actually selling something really good, so to speak. And ... So, it does matter to me what I do for a living. So, when I was moving, I was quite clear in my own head that I wouldn't work for an alcohol company, a smoking company or I wouldn't work for an infant nutrition company like infant formula. So, they were the three areas that I would not, you know, work for companies in that arena.	3/4
And granted, yes, I won't shy away from it, there is high profit margins to be made in the pharmaceutical industry. There also is in banking and everything. You know, there's a lot of industry with really high profit margins. But yes, understand, and I'm not involved in the pricing of our drugs, but understand there is that perception that yes, we price things too high, and, in some cases, it may well be founded, but in other cases, there's a whole pipeline of innovation and R&D that needs to be paid for as well to make the business viable at the end of the day. But yes, they're not cheap at the end of the day, so yes. So, I would take our CEO, GC, as a case in point. So, he's the CEO of our company globally. He's based over in the States. We're an American company. And you know, last year, he earned something in the region of US \$18 million and you would ask yourself the question, 'Is it right that one person, you know, should earn US \$18 million?' You know, granted he's an amazing person and, you know, oversees this entire huge global multinational, but you know, himself and his leadership team, yes, they earn huge money and yes, you know, and you would have to say yes, if he took a little bit of a cut in his salary, could we ultimately afford to price some of our drugs maybe a little bit cheaper to help them get reimbursed faster? That is the question, isn't it? And I guess it's down to having that kind of, you know, that is kind of capitalism at the end of the day as well, you know. We don't live in a socialist global society. We just don't, you know, so yes.	3/4
So, a recent experience was I was anxious about the performance management situation with one of my team who had tragically lost her husband at the beginning of last year. So, it was an awful scenario, that he was killed in a car accident. And She'd a lot of time off last year and then once I had a particular period of time and I kind of needed to put the needs of the business first and then quickly found out that her performance just wasn't there at all. So, I was quite close to the whole situation, so that made me even more anxious, you know, that I wanted to do right by her, and I didn't want her to feel that, you know, that we were coming down on her like a ton of bricks, that it was a balance between being supportive, but yet after a certain period of time, quite a long period of time, she had to recognise herself there is a business to run as well.	3/4

Table 4.18: Summary of EL5 overall SOI

In this context the second extract in the transcript provides some further insight, and the background of this extract was where the author was probing for meaning making on an issue around the profit margins in the pharmaceutical industry. In this extract EL5 illustrated a level of cognitive dissonance in tensions between the expense of drugs and the salary of the CEO but resolved the issue cognitively and intrapersonally in terms of her meaning

making that this was a capitalist system and not a socialist system. There is no evidence of seeing both systems as one of many possible systems which would be typical of a 5th LOC (Waddock, 2006) or been torn in parts of herself inside this context which would typify a more 4th LOC (Berger, 2003).

EL5 compared other industries such as banking as making a lot of profits as a sort of diffusion of responsibility for the kinds of profit margins within the pharma industry but there was no sense of taking a possible alternative perspective and in this sense a socialised LOC was dominating. This is possibly a reflection of what Benson (2001) refers to about the context of deep-rooted operating assumptions that permeate the self within the sphere of cultural spaces that are learned and absorbed as just simply reality. Furthermore, it is suggested in this research that this type of dialoguing on this issue within EL5 is a useful example of Kegan's (1982) constructive developmental psychology where he reconceives the whole question of the relationship between the individual and the social by reminding us that development is intrinsically about the continual settling and resettling of this very distinction.

EL5 reflected this continual settling into a form of meaning making that cohered with her present centre of gravity in meaning making by suggesting that huge profits are commonplace not just within her industry but anchored inside the holding environment of organisational systems across many industries as simply a reflection of the sense making of a capitalist system. Further she showed evidence of this continual settling and resettling of meaning making as she navigated through reflections on whether there could be other options on this pricing system. In this regard she reflected on the salary of the CEO being less as a possible way to work around issues of costs of research and development and availability of drugs at more affordable pricing but resettled back to the meaning making of the needs of the organisation reflecting the function of the capitalism system. Within this context it is argued that the socialised mind is dominating inside a 3/4 transition of EL5s overall LOC.

In the final extract EL5s handling of the events of the situation that arose with one of her team illustrated this idea of the connection between the relationship of the individual and social being in a continuous settling and resettling of meaning making evident in EL5s

description of her response to the conflicting needs of the organisation, needs of her manager, the needs of herself and the needs of an employee.

In this regard as argued by (Chesley et al. 2020) the use of constructive adult development theory as the route map for adapting this type of approach to leadership suggests that the journey through different adult developmental stages and associated theories (Loevinger, 1976; Rooke and Torbert, 2005; Kegan and Lahey 2009) is characterised by a range of behaviours and motivations driving the decision making based on orientations to oneself, others, and the environment.

EL5 described how she was concerned about the performance of a member of her team and the needs of the business whilst simultaneously torn inside herself as to how to handle the whole situation of an employee who lost her husband and who was personally known to EL5 having grown up in the same town and gone to the same college. She did go to the external resources of both HR and her manager to look for ways of handling the situation and was ultimately guided in her decision making with this employee by a structure to follow given to her by her manager. These behaviours would be seen as aspects of a socialised LOC in her search to external authority for ways of dealing with the situation. In 4th LOC as outlined by (Barbutto and Millard, 2012) people are often self-motivated and self-directed in their decision making and can be empathetic without being submissive to external authorities. This is not the case here and therefore is seen more as socialised form of mind.

EL5 ultimately reverted to her manager to deal with the overall situation and found an objective structural approach to use in the decision making and that alleviated the intrapersonal or interpersonal conflicts she may have been experiencing as by reverting to an external authority enabled EL5 to avoid any threat to the coherence of her LOC reflective of a socialised LOC. As stated by (Drago-Severson, 2008) interpersonal conflict in this socialised way of knowing is experienced as a threat resulting in avoiding conflict because it has presented a risk to the loyalty of the institution. EL5 avoided the conflict in this situation by both resourcing to a structure to use in the decision making and to the guidance of her manager and the organisation.

EL5 is scored as a 3/4 in her Grid interview and again in the SOI interview EL5 is scored as a 3/4 which reflects how the transition period is not linear and many people stay at the

socialised LOC (Waddock, 2006) throughout adulthood while as argued by Hesling and Howell (2014) a 4th LOC is at least the level required to meet the complex challenges of leadership in 21st century organisations. However as (Berger Garvey,2012) suggests the key variable in this developmental trajectory in constructive developmental theory in terms of leadership is the interaction between the demands made on the leader and the leader's capacity for self-complexity that matters most.

As EL5 said in the SOI interview her scores on her performance reviews have reassured her of any self-doubts about her performance as they showed that she was doing well so within these organisational measures she may well be operating at the level required for her own and the organisation's success within those paradigms of meaning making. The criterion in both organisations that EL5 worked in is market share as the performance measure and EL5 has been doing well within those parameters. As Hesling and Howell (2014) state socialised leaders derive their sense of authority and knowledge from outside sources to which they look to measure their success, and this seems to be the case for EL5. Further as suggested by (Hesling and Howell,2014) this LOC may be best suited to leadership roles in which their responsibilities are about faithfully representing the prevailing views of a constituency and EL5 in this case would seem to fit into this from both her Grid interview and her SOI interview with glimpses of 4th LOC present.

In the SOI interview EL5 is aligned with the organisation in terms of meeting the performance outcomes of the organisation within its market ideology which is more expressive of a socialised LOC in that there is no reflection on this as an influence factor of her meaning making (Kegan, 1982). Hesling and Howell, (2014) state that socialised leaders are not able to exercise some capacities that may be necessary for many complex leadership situations. They are not able to reflect upon or critique assessments, values, or group positions with which they are identified. This seems to be evident in that EL5 does not appear to take such perspectives on the organisation and in this sense is not demonstrating a cognitive dissonance or tension that would perhaps show in her experimenting more with self-authored behaviours within 4th LOC.

This is worth noting because in the Grid interview EL5 expressed a desire and aspiration to have more of the constructs on the left-hand side of the pole in her toolbox to both grow and for work opportunities as she recognised that these are what will meet both of these

aspirations. However, while these are expressed as desires and thoughts, she has not moved them into action in the SOI interview which if she had would be more mirrored in a 4th LOC or a more dominating 4th LOC within a transition of a 4/3 LOC. She did experience some internal conflict around a decision on the woman employee demonstrating a level of intrapersonal and possible interpersonal conflict reflecting a 4th LOC but ultimately sought direction from her manager which are more reflective of a socialised LOC and managed to avoid the internal conflict in herself and stay within the parameters of the ideology of the organisation.

In this case of EL5 there is evidence across both interviews of individual motivation of the EL5 to grow in forms of mind, but it is not clear if that desire is based on an understanding that this is a need to be successful understood within the framework of a socialised mindset as a requirement of 21st century organisations. For example, if a 4th or 5th LOC were present as EL5 perceived herself now and ideal self to be operating from across a number of constructs in the Grid interview then perhaps there would have been an opportunity for her to experiment with different kinds of decision making inside these types of 5th LOC when dealing with the employee who was off sick and stress leave as outlined in the SOI interview. This is perhaps a useful example of the continuing agency-structure debate within organisational theory (Straiti, 2000) which might find some level of resolution inside closing the gap between subject - object within the forms of mind of Kegan's (1982) theory. Equally, this agency -structure dynamic can be reflective of Laloux's (2014) point that one cannot operate (perhaps successfully) inside organisations beyond the stage of mind of its leadership.

In the case of EL5 if the leader (her manager) guidance is based on an objective structured performance-based approach as a way of dealing with the issue inside the holding environment of this organisation impacting in turn EL5s perceived sense of choices then perhaps EL5s agency seems moderated inside this meaning making. This in turn could reflect the micro meaning making of the subjective exercise of power as individual agency as outlined by (Foucault, 1980) and the broader macro meaning making of the exercise of power at a structural level of the organisation in terms of choices of what is both possible and not possible as represented by the manager in this context.

Correspondingly, within subject-object theory (Kegan,1982) if EL5 had been more self-initiating and less submissive to this external guidance (Barbuto and Millard, 2012) then there would be more capacity for an internal derived ideology expressed as an 4th LOC to act on in the decision making around this event and the relationships. Furthermore, this might have enabled what (Simola, 2003) describes as embodied values of care in organisations where the issue is about how to fulfil conflicting responsibilities to different people as opposed to resolving claims of conflicting rights among them. As stated by Vincent et al. (2015) there is the need more than ever in the world and our organisations for leaders who operate from post-conventional levels of consciousness which is what EL5 aspires too as stated in the Grid interview. The question is the degree to which she can develop that within herself and within the holding environments of her organisation which as Vincent et al. (2015) argue require a new way of arriving at views about the world, our organisations, our communities beyond individual, group, or country.

4.6.2 Application of Laloux Stages of Organisation derived from SOI and LOC analysis

The two organisations in this case are Global Pharma type industries and EL5 was working in the Marketing and Sales department within both of these organisations. This department within this industry which is based on research and development of drugs in the health sector is based on a competitive business model. These two organisations, based on the data in both interviews are operating within the *Achievement Orange* paradigm in Laloux's (2014) framework with a focus on decision making based on effectiveness and success as the yardsticks by which decisions are made. The second Pharma company EL5 was working in while doing the SOI interview saw her moving from Sales and Marketing Manager to an Associate Director of Sales and Marketing and Board member.

EL5s promotions suggest that this model works well for EL5 where the central focus of the organisation is to beat the competition to achieve profit and growth and with innovation as the key to stay ahead. This is evident in their innovation around a new anticoagulation drug and the push within Marketing and Sales to make this drug the drug of choice among doctors and medical providers at large by a focus on the EL5s sales reps getting rewarded for meeting the goals of increasing their individual percentage of sales of the products.

While these companies have value statements about patient care and being patient centred and innovative these type of values and associated mission statements according to Laloux (2014) only make sense at a *Pluralist -Green* paradigm of organisation with its focus on decision making based on criteria of belonging and harmony with its guiding metaphor being *Family*. The key breakthroughs of this model of organisation are empowerment, a values driven culture and a stakeholder model.

This sense of family of belonging one can argue is not present when it came to making decisions around an employee who had lost her husband in a car crash. The organisation did not revert to values of care in the sense that the focus was on her performance as both the ways and the means to exit her from the organisation. It could be argued that if operating from a values-based approach then other ways of managing the conflict of responsibilities of both parties in that situation could have been sought if a more 5th order self-transformative form of mind was influencing the decision making.

Laloux (2014) states that in *Orange Achievement* organisations leadership might pay lip service to the values as metaphorically speaking when the rubber hits the road, and the leaders have to choose between profit and the values, they will predictably go for the former. In this regard, these organisations cannot uphold a practice and culture (in this case a values driven culture) that stems from a later stage of development (Laloux, 2014). This is perhaps evident in the decision making of the holding environment and EL5 in that while there is a desire on behalf of EL5 for more self-authored LOC, this desire has not moved into action in her decision making and the holding environment as *Orange Achievement* is her yardstick and, in this context, she is more dominated by a 3/4 LOC.

An interesting extract in the SOI interview was the description by EL5 of the global transformation that the company engaged in though EL5 stated she did not agree with the use of the term transformation in that context as it in fact was a re-structuring or downsizing of the organisational structure. This ‘transformation’ as it was framed led to the Irish based CEO being let go from the company. While this was acknowledged by EL5 as very demoralising for the people in the Irish operation, EL5 described how this became an opportunity for her to take a position on the Board which she put herself forward for and was accepted. It was this move to the Board that also saw her promotion to Associate Director of Sales and Marketing to align with being a Board member. All of this would fit within the meaning making of an *Achievement Orange* organisation demonstrating a competitive spirit perceived as innovative within this type of paradigm of organisation.

However, a broader issue in this context as EL5 stated was a misuse or euphemistic use of the term transformation and in this regard may provide some insight into the context framing of a word like transformative leadership and its translation in practice reflecting, as it were, the LOC in practice of it. In terms of leadership the idea of traditional theories of transformational leadership as Burns (1978) argued suggests that a transformational leader helps to move people beyond their wants and desires to higher levels of motivation and morality and a number of scholars have suggested that transformational leaders are agents of social and organisational change (Bass, Avolio, Jung and Berson, 2003; Bass, 1985). According to (Bass, 1985) this type of leadership encourages the growth and development of their followers enabling followers to transcend their own self-interest for a higher, collective purpose.

These types of values and characteristics as espoused inside transformational theories of leadership would be more likely be found in Laloux's (2014) *Teal* type organisations. *Teal* organisations have evolved into second tier consciousness which Kegan, (2015) describes as most similar to what he means by 5th order self-transformative LOC. There is no evidence of a 5th form of mind in EL5 and equally no evidence of any disequilibrium within EL5 around the organisation model and her own performance and success within it and therefore no optimal conflict arising for EL5 or the holding environment of the organisation as they appear to be aligned inside the *Achievement Orange* model.

In Laloux's (2014) models of organisation as a stage of development an *Achievement Orange* model is held inside a consciousness of meaning making that is underwritten by measures that provide the ego identity with pleasant experiences such as wealth, recognition, and success. On the other hand, these are possible outcomes of a life well lived in a *Teal* type of model of organisation not the drivers of life or an organisation. In this regard, it could be argued that the nature of the purpose of the pharmaceutical industry might be more aligned with a *Teal* paradigm of organisation by creating the conditions in the holding environment to enable the emergence of 5th order forms of mind through taking a developmental approach to leadership through its culture and processes.

Petrigilieri and Petrigilieri (2015) discuss humanising leadership in organisations in terms of contextualising life events into the world of the organisation and in this way merging leadership with social values and values to the broader society by putting the social and psychological development into constructs of leadership. The Covid 19 global pandemic and the speedy roll-out of the vaccination programme could be evidence of *Achievement Orange*

but also of a possible capacity, as a result of the significance that maybe applied to that experience both within and outside the pharma industry for the stage of leadership and the organisational model to move developmentally into a new LOC and correspondingly perhaps second tier consciousness in its model of organisation.

4.7 Case Six: Organisational Context and Executive Profile

This organisation is multinational technology company that specialises in Internet-related services and products, and it describes its culture as innovative encouraging free thinking as a gateway to creativity and innovation. It has a flat organizational structure where collaboration is seen as key with employees encouraged to coach each other. There has been some controversy within the company from its employees and published in the media as to the degree to which these stated values have been operating in practice since the company was restructured in 2015 evidenced by changes to its all-hands meetings, human resources processes and transparency from management. These shifts in culture were seen from a management perspective as a natural outcome of such a large company maintaining and scaling the trust of all its employees. This company has also become part of a wider public and political debate as to the power and role of a small number of IT platform companies that have a dominance in the global market with Government policy intention across the world to put limits on their dominance.

EL6 is a woman executive in her late thirties who formerly worked in a construction company. In doing the first repertory interview she had joined the above company as a Project Manager responsible for winning new business and growing existing customers in the business with responsibility for a small team of people in this role. When doing the second SOI interview she had been promoted into a Global Head role for a section of the Business. She is qualified engineer, has a Post-Graduate Diploma in Project Management, a Post-Graduate Diploma in Construction Law and Contract Administration and has undertaken a variety of leadership courses.

4.7.1 Repertory Grid Eyeball Analysis

As can be seen from (table 4.18) the striking visualisation of the Grid was the consistent low numbers across 11 of the constructs when EL6 was referencing the organisation three years ago as expressed in numbers 1 and 2. However, in five of these constructs related to the organisation three years ago, EL6 had ascribed herself the highest number possible of 5 which was related to her perception and description of her own personality independent of the organisational context. In terms of herself now, her ideal self, her organisation now and her ideal organisation the numbers were mirroring each other on the higher end of the scale of 4 and 5 suggesting that EL6 had found a natural fit for herself and her organisation.

However, EL6 was not, in fact operating at a 5th LOC or a clear 4th LOC but is transitioning between a socialised and self -authored LOC as suggested by the qualitative data underwriting the numbers ascribed by EL6. The perception of EL6 of being higher on the LOC than she can be quite a typical perception of individuals (McNamara, 2013) and can also be a function of the push for organisations to have these types of constructs as characteristics to be successful in the flatter structure of the modern organisation. Further EL6s perception of the numbers could also be a result of an interpretation of hierarchical numbers as having more value based on traditional notions of such categorisation. Kegan's (1982) theory is not hierarchical in a categorical sense but rather the numbers reflect the sense of expansion of capacities that different levels of meaning making enable and understood as levels and stages of maturity of the structures running the meaning making of the mind.

The other issue of note was that EL6 spent a lot of time clarifying and working through a score for each construct among the sixteen different constructs across the six variables. This could have been part of what she said in the interview of wanting to be sure before making a choice which of itself inside developmental trajectories of LOC, showed a possible socialised LOC as she mediated herself cautiously through the various constructs. In this context EL6 was demonstrating a dominant socialised LOC as she was scanning the external environment of the organisation that she had recently joined for meaning making before committing herself to a score. This was married to glimpses of her own opinions and ideas more typified by a 4th LOC equally present in terms of her perspectives on the constructs. These attitudes and behaviours are more reflective of a transition between a socialised and self -authored LOC as she was externalising to the wider organisational environment before

committing herself to a point of view as a fully embedded self-authored 4th LOC. Wilber (2000) might describe this process engaged in by EL6 as a reflection of ‘a developmental stream’ while also illustrating her center of gravity of meaning making which is proposed by the author of this study as a 3(4).

	Variables						
	M y s e lf N o w	M y s e lf T h e Y e a r s A g o	M y I d e a l S e lf	M y O wn O r g a n i s a t i o n T h r e e Y e a r s A g o	M y O r g a n i s a t i o n N o w	M o d e l O r g a n i s a t i o n	
Level Five Dimension of Meaning							Level One Dimension of Meaning
Independent Thinker	3.5	3.5	4.5	1	4	4.5	Faithful Follower who seeks Direction
Interdependent Thinker	4	3	5	1	5	5	Aligns with own Tribe Consensus
Sets Agenda	5	5	5	5	5	5	Seeks Approval for Agenda/Solution
Problem Solver	5	3	4	2	5	5	Standard Solutions Applied
Problem Finder	4	4	5	1	4	5	Team Player
Comfortable with Ambiguity	5	2.5	5	5	5	5	Uncomfortable with Uncertainty
Holds Multiple Perspectives	5	2.5	5	2	5	4.5	Holds to own Beliefs and Ideologies
Open and Curious	5	5	5	3	5	5	Rigid and closed
Can Take Responsibility within Relationships	5	5	4.5	1	4.5	4.5	Externalises to Responsibility
Internalises own Authority	3	1	4	5	5	5	Externalises to Authority
Manages Conflict Well	4	4	5	5	5	5	Torn in Conflict Situations (Can't Decide)
Delegates	3	3	4	2	3	4	Controls
Empowers	3.5	2	4	1	5	4.5	Holds on / Holds back the Reins
Adaptive Leadership	4	2.5	4.5	1	5	4.5	Technical Leadership
Can Voice and Act on own Values	4	5	4.5	1	3	4.5	Subject to Organisational Values/Culture
Leads to Learn	3.5	2.5	5	1	5	5	Learns to Lead

Table 4.19: Case 6 Repertory Grid Eyeball Summary Analysis

There were a few exceptions to these patterns which are addressed inside the qualitative data underwriting the chosen highest and lowest constructs for the analysis and where any anomalies arising offered more insight as to which LOC was operating in EL6s meaning making of the constructs across the variables. The chapter proceeds to identify EL6s Highest and Lowest Constructs and the qualitative data underwriting them to provide more insight to EL6s form of mind.

4.7.1.2 Comparison of Highest order Constructs for Self and Organisation

What is of note in (Table 4.20) is that EL6 constructs are consistently at a 5 for herself now, three years ago and ideal self and were in alignment with the scores she ascribed for her organisation now, three years ago and ideal organisation. There were interesting differentials in construct three where EL6 scored herself now as a 5 while scoring both her organisation now and ideal organisation as 4.5 and these apparent anomalies are deconstructed further to look for the possible meaning making in this regard inside EL6s LOC.

Highest Constructs	Self as Elements	Organisation Comparison
1. Set's agenda versus seeks approval for agenda	- Self Now: 5 - Ideal Self: 5 - Self three years ago: 5	- Organisation Now: 5 - Ideal Organisation: 5 - Organisation three years ago: 5
2. Comfortable with Ambiguity versus uncomfortable with uncertainty	- Self Now: 5 - Ideal Self: 5 - Self three years ago: 2.5	- Organisation Now: 5 - Ideal Organisation: 5 - Organisation three years ago: 2
3. Can take Responsibility within relationships versus externalizes to responsibility	- Self Now: 5 - Ideal Self: 4.5 - Self three years ago: 5	- Organisation Now: 4.5 - Ideal Organisation: 4.5 - Organisation three years ago: 1

Table 4.20: EL6 Comparison of Self and Organisation Highest Constructs

4.7.1.3 Sets Agenda versus Seeks Approval for Agenda

In the first construct EL6 scored herself a 5 across all six elements which she described as being a function of her personality irrespective of the organisation context.

This is very much my personality. That's what's coming through there. So irrespective of my organisation, it's my personality and it's the role type. So, my personality would just, I'll order things and set things up, I get them done, but my role is somebody who needs to order things, set them up and get them done. (EL6/5)

However, while the numbers are the same across all six elements in this construct EL6 stated that she was not happy in her previous organisation as evident in her scores in other aspects of the Grid in terms of the nature of the organisational holding environment and these scores she described as a reflection of her personality traits irrespective of the organisation context. The next construct provides further insight into EL6s form of mind and the holding environment of the organisation.

4.7.1.4 *Comfortable with ambiguity versus Uncomfortable with Uncertainty*

In the second construct EL6 described ambiguity as the story of her life in this new organisation which she said she loved in terms of both the challenge of that approach as well as the autonomy it gave her to drive and look for solutions within that kind of ambiguity. However, she then went on to make a distinction with this construct as to the degree to which she herself was comfortable with ambiguity and uncertainty in terms of how this related to how her performance was measured.

I am comfortable with uncertainty in the work I do .I am comfortable with ambiguity with the work I do. I wouldn't be comfortable if I didn't know where I stood in the business. Wouldn't be comfortable if I didn't have a sense of, like I'm the person who asks for feedback a lot. You know, I like to know what my boss thinks of my work. So, I'm not comfortable with ambiguity from that perspective, but I'm comfortable with ambiguity in my work. It's reassurance almost. But kind of I guess from a performance management perspective. Just reassurance. So, it's kind of is. It sounds like I'm a child, but...(EL6/13)

In this context she made the distinction of the requirement of the organisation to be comfortable with working with ambiguity which is a useful example of the type of leadership behaviours of a 21st century technology company requiring this approach as she stated to keep agile as a business. This echoes the environmental changes expressed in the acronym VUCA which according to (Avolio, 2009; Petrie, 2014; Day et al.2014) require in turn leadership constructs that focus on a capacity to build more complex and adaptive abilities in leaders. These types of capacities would be typical of a 5th LOC (Kegan's, 1982) being comfortable with paradox and ambiguity (Garvey-Berger, 2012).

This organisation is a possible case in point in this regard given that the nature of its industry is about responding creatively to new challenges and therefore needs to create an environment that can leave a space for this type of 5th LOC to grow because it requires these

capacities to be effective as an organisation. However, EL6 in this context made a clear distinction inside this construct between work and herself stating that she was less comfortable with ambiguity within herself particularly in relation to how her performance was being perceived by her boss and her stated need for constant feedback on her performance and in this respect reflects a more dominant socialised form of mind within an overall 3(4) LOC. This is worth noting in terms of Kegan's (1982) point of leaders being 'in over their heads' which this construct and the next one helps to illuminate in terms of some of the dualities at play here.

4.7.1.5 Can take Responsibility within Relationships versus Externalises to Responsibility

In this construct EL6 was working through the third construct and described the nature of her present organisation both in terms of its philanthropic contributions as well as treating its employees well. However, she did identify one caveat to this overall assessment of the organisation which together with her own focus on her performance are useful for understanding the inter-subjectivity between the organisation's hidden curriculum married to individual leaders 'hidden competing commitments' (Kegan, 1982, 1994) that influence the structures running the meaning making of the mind both at an organisational and individual level.

The organisation three years ago, they totally externalised responsibility. The organisation now, that is interesting. So, I'm going to say for my ideal is 4.5 to match me. Don't externalise responsibility. Jesus, I don't know. That's hard. It's an organisation that always tries to do the right thing. I'm kind of thinking is it a four, is it a five? Like is it up here at the five mark? Yes. Probably, I'm going to give it a 4.5. I think there's some areas because of the way we're organised, it's not great, but it really does. Like they give so much money away. Like they really do try to do the right thing, you know, between the philanthropic side of things and letting people off, not putting them on a leash.....? (EL6/11)

And

But then you've the performance management side of it, which is...That we talked about earlier on and that flips it on its head a little bit. Yes. You know, so it is not following the mantra really in many ways. That is why I would not be giving it the full five? (EL6/11)

EL6 was referencing in this extract her distinction earlier in the interview when discussing the construct comfortable with ambiguity and uncomfortable with uncertainty. She described how the organisation kept you on an edge in terms of uncertainty as you were only as good

as your reputation and performance and in this sense EL6 suggested that there was this implicit contradiction at play inside the holding environment of the organisation. This contradiction showed up in this context in terms of the requirement to be good with dealing with ambiguity and uncertainty but also to be so within the context of what appeared to be ongoing standard performance measures. The dis-equilibrium of these joint organisational demands is a contradiction that is maintaining itself within the holding environment of the organisation and which EL6 was caught up in as she navigated her meaning making in this context.

The dilemma for EL6 who is operating from a 3(4) LOC perspective was that a capacity to live with and through these contradictions requires a 5th LOC, one comfortable with paradox and contradiction with a corresponding capacity to be more nuanced and agile in response to these issues. In this sense EL6 'is in over her head' and which may be why she sought constant feedback because she was experiencing a threat to the coherence of herself in this scenario as a dominant socialised LOC (Drago-Severson, 2016). However, the broader issue raised here is the needs of the organisation on the one hand to be agile and innovative in terms of product while it may also need on the other to reconceptualize its approaches to senior roles and responsibilities of leadership (Garvey-Berger, 2012) if it wishes for example in this case to develop and align that agility inside forms of mind. There is perhaps a link in this regard to the earlier point made by EL6 that there was somewhat of a disconnect between the philanthropic culture practiced by the organisation while equally she stated that the flip side of that is that they did not live the mantra of that culture internally and particularly evident in the performance management system. This is worth noting as this apparent contradiction has an impact on an individual leader's capacity and in this case perhaps EL6 capacity to truly move into living with ambiguity internalized inside a 5th LOC because EL6 is wittingly or otherwise constrained within the holding environment of the organisation itself.

Further to this point towards the end of the interview when EL6 was asked which side of the pole on the perceptual matrix she would like to be, she said 100% on the side of the constructs which reflect the higher LOC. She said this was because she wanted to grow and develop, and these were the capacities she needed to be successful in the kind of organisation she was now working in. It is these very capacities that are quite challenged at times in this new organisation between where she was making meaning from as an LOC and

how that was both shaped by her family roots, her role identity as an engineer as well as the culture of her former organisation.

This construct and the dialoguing within it for EL6 provide a helpful insight of the types of contradictions that Kegan (1982, 1994) suggests results in leaders being ‘in over their heads’. Correspondingly, growth and development are itself a process where being ‘in over our heads’ can become an opportunity where organisations as holding environments and individual leaders within them can look at these instead of being caught in them and in so doing, have a bigger space to move to some new equilibrium or epistemology within forms of mind.

4.7.1.6 *Comparison of Lowest Constructs for Self and Organisation*

In the lower constructs as can be seen in (table 4.21) EL6 had a diverse pattern in her meaning making in terms of both herself now, her ideal self, her organisation now and her ideal organisation. As with EL6s highest constructs there was a consistency in the lower scoring across all constructs for her organisation three years ago. There are interesting differentials in the numbers EL6 ascribed to herself now and her organisation now in terms of construct 1 with both scored as a 3 and both being identified as an ideal of a 4 and not a 5. Equally in construct 2, EL6 ascribed a 5 to her organisation now while scoring her ideal organisation inside this construct as a 4.5 and herself as a 4. This is where deconstructing these constructs further may add insight into EL6s meaning making in this regard and how that gets reflected in her LOC.

Lowest Constructs	Self as Elements	Organisation Comparison
1. Delegates versus control	- Self Now: 3 - Ideal Self: 4 - Self three years ago: 3	- Organisation Now: 3 - Ideal Organisation: 4 - Organisation three years ago: 2
2. Empower versus hold back the reins	- Self Now: 3.5 - Ideal Self: 4 - Self three years ago: 2	- Organisation Now: 5 - Ideal Organisation: 4.5 - Organisation three years ago: 1
3. Leads to learn versus learns to lead.	- Self Now: 3.5 - Ideal Self: 5 - Self three years ago: 2.5	- Organisation Now: 5 - Ideal Organisation: 5 - Organisation three years ago: 1

Table 4.21: EL6 Comparison of Self and Organisation Lowest Constructs

4.7.1.7 *Delegates versus Control*

In this construct for EL6, herself now and three years ago were both scored as a 3 while her ideal self and ideal organisation were both a 4 and her organisation three years ago scored a 2. Her scores she stated were reflective of her training as an engineer together with her own personality which she stated would not make her a natural delegator while equally there was no one to delegate too in her old organisation.

In her organisation now, she addressed the need to delegate in terms of volume of work but also scored her organisation now as a 3 because she said they wanted her to do both as it was ultimately her responsibility. Again, within this construct she observed the degree of delegation practiced by some of the more senior leaders suggesting they were completely hands off and she did not agree with that. In this sense EL6 was demonstrating a 4th LOC by thinking critically and evaluating (Hesling and Howell, 2014) the organisation and its leadership in this context. She thought that there needed to be some level of control at senior levels of leadership and that was why she was scoring her ideal organisation as a 4 rather than a 5.

No. They seem so out of everything for somebody in that position. So, think. halfway between the two is the right place to be. You should have a mix of both, depending on how senior you are. You may have to delegate more. As you get more senior, you should delegate more, but you still need an element of control. So, it's probably the same as myself actually (EL6/30)

Heifetz's (2007) idea of the difference between authority and leadership could be a useful distinction here for EL6 where he suggests one needs authority in organisations for direction and co-ordination while equally making a distinction of the meaning making of leadership being about encouraging everyone to take up more responsibility in an organisation which he sees as the major role of leadership. This construct is linked to the next one where her own scores are lower with a desire to be higher but again within this balance as she saw it between empowerment versus control.

4.7.1.8 *Empower versus Hold on/ Hold Back the reins.*

In this construct EL6s numbers reflected the push and pull of the need for empowerment in the organisation which she scored as a 5 as clearly part of the culture. However, she scored the ideal organisation in this construct as a 4.5 again holding back 0.5 to mirror this idea of control as discussed in the previous construct. She saw her ideal self as a 4 like her ideal organisation so is demonstrating self-authored LOC in her capacity to suggest that the 5 score on this construct of her organisation was too high and in that sense was establishing her own internal ideas and belief as a 4th LOC (Kegan and Lahey, 2009). Her organisation three years ago was 1 and herself three years ago was a 2 while herself now was a 3.5 which would indicate that the organisational environment was having an impact in developing these constructs as aspects within herself.

It's more empowering on it. I think the holding the reins almost matches to this piece here and the control. There needs to be a bit of holding the reins, especially depending on the level of seniority, you know. So, I'd say a 3.5. Three years ago, I was very bad actually. I was very much a control freak. I didn't have anybody to delegate to anyway. Ideally, it should be a four and it's almost the same as this one. (EL6/42)

4.7.1.9 *Leads to learn versus Learns to lead*

Her ideal self, her ideal organisation and her organisation now were all scored 5 by EL6 on this construct echoing the nature of this technology company and its ongoing need to be agile and innovating by meeting complexity and learning to resolve it as EL6 outlined at the outset of the interview.

The organisation would like me to be here, constantly push thinking, you know. And I would like to work in an organisation that likes that, so again these boxes. Where I was three years ago definitely. I think because there's always a natural leader in me and someone who pushes the boundaries, but I think three years ago, I was kind of halfway between the two and it's a balance of that versus ... (EL6/42)

These thoughts of EL6 were reflective of her overall interview and LOC in that while she had a clear sense of herself and her own personality and ideas, they were very much thoughts rather than actions that she was navigating as she finds her feet inside the political and cultural landscape of this organisation. Further while being self-motivated and self-directed, she externalised to the organisation for her certainty of her position and decision making

and, in this regard, a socialised LOC is more dominant within the thoughts and aspects of internal authorship of a 4th LOC

In this sense as a leader she is transitioning according to (Barbuto, and Millard ,2012) from third to fourth order LOC in demonstrating a sense of her own authorship separate from the boundaries of the organisation. Given this overall interview analysis EL6 is scored a 3 (4) LOC.

4.7.1.10 *Subject-Object Interview Analysis*

In this interview EL6 talked about the importance of her family of origin in terms of her identity and how it has shaped her leadership style. She described how the focus metaphorically speaking in her family was on % you did not get in something rather than the 99% you did get and how that has influenced her leadership style of always pushing for high impact. In the sense that she has brought this approach and principles into work.

Well, the con of my family is nothing ever gets dressed up, so you need to be thick skinned or not take it too ... So, you got to take the good with the bad and there's generally, we're more of like egging people on as opposed to congratulating, if you know what I mean? Which is now one of my weaknesses as I become a leader. I'm always we can get the extra 5% rather than great job on the 95, but that's very much how I was brought up. So, it's very hard then to change how you work, so I think the con of our family is less of the wow, you've just achieved these things and more of, but you could achieve these other three things (EL6/2)

This could be either a socialised LOC or a self-authored LOC as it was not clear whether she was simply blindly following these principles or whether they were values that she has looked at and embraced as her own and could be evidence of a 3/4 LOC in this context. As can be seen in (table 4.21) some of EL6s extracts from the interview add further insight into her form of mind and its developmental stream. In the first extract, EL6s self-authored LOC was present when she received feedback from her team on her direct style and was somewhat shocked by it while also taking on board that she may have needed to adapt her style of communication. EL6 was aware that if she was to succeed in her career in the organisation that she was required to change her leadership approach.

In this sense it was not clear whether she understood the views of others (in this case her team) which a more fully embedded 4th LOC would demonstrate (Waddock, 2006) but to a

degree was showing the limits of a self-authored LOC still held inside a socialised LOC by her judgements of others who did not share or understand her approach (Garvey-Berger, 2012). For example, she thought perhaps that her approach was ultimately good for her team and that they would thank her in the long run suggesting that they were used to always getting positive strokes which she thought was not necessarily a good thing. She was showing a 4th LOC based on creating stands and regulating boundaries on behalf of her own internal values as she saw them (Kegan and Lahey, 2009) and which she has absorbed from her family background based on high achievement and within this context demonstrating a socialised LOC.

Transcript	LOC
I've been getting this feedback a lot for years, that I'm quite scary. And I think it is just more that I'm quite driven and I try to drive my people to achieve. The whole reason that we go to work is to have impact. Like we're not there to all hold hands, let's be honest, but I'm not sure in the industry and the culture I live in, and the people I'm managing too are all Millennials with ridiculous Harvard Masters and NCID masters and its real high achieving millennials who possibly, some of them, I don't think have been told anything negative about themselves in their life and then they've got me. I was their manager, who I don't tend to dress things up, so that I can be quite difficult to get used to. And if you're very sensitive, then you possibly miss the fact that you're still getting a good rating and we're getting access to all the good projects and you're presenting to ... I'll have to alter my style very much. But that's ok..... And I think I'm very like, I'm an engineer so I'm very logical. So, if I read all of this and saw no merit, no gain, no logic in it, I wouldn't buy in to it but actually I do see and what I've also done is I've stood back, I've looked at my peers or my boss. For example, why do I think he's great? Why do my team not think I'm great? So, what's he doing differently than what I'm doing? And I'm starting to assess, just little tweaks, I'm not talking about operating completely differently. Little tweaks, more listening less talking. More delegating, less micromanaging. And they're textbook type stuff that I can do that doesn't interfere ... I'm not going to change who I am. Who I am is who I am, but I can tweak my style and I see the merit, I see the merit in trying it? If it doesn't work, I can revert to...	3/4
... It's my leadership style basically and I've had this conversation with my manager and my VP, and they'll back me all the way but they're like, you need to figure this one out for you, because as you go up the chain, that's what's going to get you places. So yeah, from the chit chatty, my mind is on the job. And.... So, I need to dial back, which is funny. I need to take my foot off the accelerator a little bit and be less of a, ok I'm here today and we're going to get these 10 things done and be more of a, how's everybody feeling? Get five things done and ... But that will be very hard for me to do because I'm very much an impact as I said, and the words that most people would say is missing there, is people. I didn't mention it you know, which is probably part of the issue. So, I think bringing your whole self to work is hard, depending on your person, depending on your experience. And I also think depending on your experience from an age or years, and how comfortable you are in yourself and how strong your own sense of self is and how much you care what other people think of you.	3/4
Oh yeah. It was funny, this time last year, my team are all over in the States at the moment for this management convention and last year I took on the VP in front of 20 of most senior colleagues and I lost obviously, because he's the VP and our styles, we are polar ... We work together, and we have a mutual respect to a degree, but I will challenge him. I have no problem. And he claims he has no issue being challenged, I'm not entirely sure about that. But I could see my boss sitting there, and he was like just let it go. But I wasn't willing to let it go because he was wrong, I knew he was wrong. instead of kind of swallowing it and letting it go, I fought him..... And... And like honestly, I kicked myself up and down ... I should have let it go for my own ... I suppose, how I came off. And... What XY said to me after, he was like you have to get better at picking your battles. You were never going to win that battle. He's the VP. And you fought him and fought him in front of your 20 colleagues. And I was like, he was wrong, I know. I know he was wrong; you know he was wrong, but what did you gain by that battle? Nothing. I lost, I really lost, and I felt awful, and I ended up having this conversation with my boss and having to have a conversation with XY the VP as well, so I've no problem standing up, it's more like when I stand down.	4/3

Table 4.22: Summary of EL6 overall SOI

While EL6 was open to changing her style, she was also demonstrating some of the limits of an emergent 4th LOC in that her own judgements of others being too sensitive in this context of feedback and her view that the whole reason you go to work was to have an impact is not in question for EL6 here. So, while she was understanding of her team given their age and the cultural global nature of the team, if her new approach doesn't work, she stated she will revert to her own style because she said she was not going to change. In this way she was perhaps reflecting what (Drago-Severson, 2016) refers to that some self-authoring minds struggle with transforming their deeply held personal frames of reference or mindsets to make sense of new experiences.

Further as evident in this extract, the culture of the organisation required her to adapt an approach that involved different perspectives and a different leadership approach or style to succeed into more senior levels of the organisation. In this sense there is a holding environment that is requiring and encouraging a different leadership style which can open the potential of EL6 to grow into higher forms of mind and the tension she was experiencing in managing these different variables may well be what will create the optimal conflict (Kegan and Lahey, 2009) to move her further in her developmental trajectory of LOC.

In the second extract, EL6 was discussing the organisation culture which was to bring the whole self to work and how she had and was still struggling with that. She talked about how her focus in work had been on two things, impact, and achievement and how in her old job as an engineer in the construction company she could get on with those aspects and being an authentic person or bridging work and whole self was not an issue. In this company EL6 said the lines were blurred and she was aware of how much of a struggle that was for her based on these central aspects of her approach to work. However, EL6 was equally aware that to be successful in this organisation she needed to develop a capacity to integrate her personal and professional self (Kegan and Lahey, 2009) in terms of this whole self-approach required in her leadership role within the organisation. In this sense she may need to develop an ability to see other perspectives and become less stringent in her beliefs of approaches to work which are limiting her in the context of this holding environment (Garvey-Berger, 2012).

In the final extract she demonstrated a self-authored LOC in her willingness to stand up in a meeting and disagree with the VP on an issue. However, her conviction that she was right, and he was wrong and to maintain that stance is an example where her self-authored beliefs again may be limiting her growth. If she had been more moving towards a 5th LOC, she may have seen that her viewpoint was one of many (Waddock, 2006) and may have avoided the

tension and concerns intrapersonally and interpersonally that subsequently arose within her as she reflected on how she may have been perceived in her behaviour in that meeting.

In retrospect, she did talk about wrestling with herself after the meeting, based on others feedback and perception that she may have done her career no favours and while she could speak up and be the author of her own ideas within a senior group, she was now concerned about the external consequences to her from the organisation. Within this context EL6 has not realised the limits of her own system (Barbuto and Millard, 2012) and is not a clear 4th LOC because she was not able to tolerate emotional conflict evident in the extract with her VP and how she subsequently felt in herself.

The author scored EL6s overall analysis within this interview as a 3/4 form of mind as while she has a clear set of beliefs in her work and can act on them, she derives her sense of authority and knowledge from her family and from the organisation which she looks to for the measure of her success (Hesling and Howell, 2014).

There are some consistent themes across both interviews in terms of her reflection on the nature of her personality as being quite driven which she puts down to her family background suggesting that this is how she behaves irrespective of the organisational environment. This approach worked for her as an engineer in the construction industry, but it becomes evident in the SOI interview that this driven aspect of her personality as part of her leadership style could work against her in a very different culture. In the first interview she was scanning the landscape of the organisation and in that sense managing her actions inside how she interpreted what the organisation wanted, and, in that externalisation, she was operating more from a 3(4) form of mind.

In both interviews she talked about her emotions and needing to get better at that side of things and bringing her whole self to work which was difficult as she always separated her personal from her professional work life. This premise of putting the personal into the professional is argued by (Kegan and Lahey, 2009) as what is necessary to release leaders into more mature constructs of mental complexity needed for 21st organisations which seems to be the case for EL6 in this organisation.

It is worth noting her acknowledgment in the SOI interview that while she had the ability and skills to do the job in the new organisation, that she came in at a senior leadership level and did not feel she was able for it in the sense of managing a team in this more whole person self. The gap for EL6 is not technical knowledge or leadership as technical (Heifetz, 1998)

but rather is focused on the interior of the self where she identified she needed most help echoing (Day et al. 2009) call for research that would focus on development as the criterion of interest rather than leader performance. This case is perhaps a useful example of leadership as described by Wheatley (1992) as a dynamic phenomenon in which relationships, awareness, self-regulation, and participation are dilemmas to be resolved and perhaps one way of resolving them is through a constructive developmental approach (Kegan and Lahey, 2009) to leadership.

The chapter proceeds to explore the holding environment of the organisation in terms of Laloux's (2014) framework for understanding stages of organisations as stages of development of their leaders.

4.7.2 Application of Laloux Stages of Organisation derived from SOI and LOC analysis

One of Morgan's (2016) metaphors for understanding work organisation as structures of mindsets is the idea of a 'global brain' and 'organisation as media' and both seem apt metaphors for the tech type holding environment of the organisation in this case. In this organisation the nature of the industry is digital media with a global reach and with global brains in terms of the nature of the intellectual capital of the people working in the organisation as referenced by EL6. This organisation reflects Drucker's (1999) suggestion that knowledge workers require very different assumptions for leadership and management than for example organisational structures built on principles of scientific management (Taylorism, 1911). In these flatter structures, everything is built around teams, with empowerment of these team members encouraged to release their intellectual capital as well as autonomy for individuals and teams deemed the optimum approach to motivate people for high performance outcomes in 21st century organisations.

These different assumptions have become evident through the emergence of different ideas on what constitutes leadership for these types of workers and these types of organisations. For example, theories such as distributed leadership and shared and super leadership (Manz and Sims, 1989; Goleman, 2002; Raelin, 2003) indicate the shift to flatter structures with the idea that sharing power with team members and developing team leadership assumes heightened importance (Manz and Sims, 1989) as a reflection of these changes.

These structural changes in organisational design and associated theories can be adapted within both the *Achievement Orange* and *Pluralist Green* models of Laloux's (2014)

framework of stages of development reflected in these organisational models. In this case the *Achievement Orange* model is evident in its innovation, its drive for profit and growth and a focus on the how rather than the what in terms of achieving these outcomes. This aspect of this culture is well suited to EL6 in this case in terms of driving forward for these kinds of outcomes in her approach to high impact and achievement.

The flatter structure of this organisation and culture evident from the interviews is based on the family metaphor of a *Pluralist Green* model with its focus on decision making based on belonging and harmony. In this model there is a clear focus on building a culture of empowerment and values in terms of being valued members and in that sense each employee is a stakeholder perceived in turn as leading to exceptional motivation inside the sense making of a managerial functionalism paradigm of organisational behaviour. These two types of organisational models *Achievement Orange* and *Pluralist Green* seem to live side by side in this organisation. However, for EL6 they are not easily reconciled within herself in terms of her leadership approach as reflected in her LOC.

However equally this is understandable as one could argue that *Pluralist Green* and *Achievement Orange* as holding environments are not easily reconciled as at their base, inside Laloux's (2014) framework, they are both models within the ego identity paradigm. This organisation as perceived by EL6 does not appear to be at a *Teal* model of organisation which is reflective of second tier consciousness akin to Kegan's (1982) 5th LOC. It paradoxically requires these 5th LOC types of capacities to adapt to the complexities of the 21st century (Kennedy et al. 2013) but is operating within the paradigms of first tier consciousness within the *Pluralist Green* and *Achievement Orange* model. Correspondingly in this organisation the ideas of its structural and cultural approach expressed as empowerment in teams and leadership are not taken account of developmental forms of mind in the translation of these concepts into practice in the organisation as evidenced through the lens and experience of EL6 and in this sense both are 'in over their heads' (Kegan, 1994).

The author of the study is curious then as to what degree these models of organisation and these concepts of empowerment are adapted as a tool, a method but are not taking adequate account of either the LOC that is sending these messages through the system or those who are receiving them. This is perhaps where issues of different leadership theories may also benefit by taking account of levels of consciousness in the structures running the meaning making of the mind in the implementation of these theories in terms of understanding more of human intention as consciousness understanding consciousness (Schamer and Yukelson,

2015). Perhaps it is awareness of these types of living contradictions that can create an optimal conflict inside holding environments as lived inside their leaders' mindsets that can provide the potential for a new movement in LOC into the 5th LOC stated as needed by organisations and individual leaders alike.

Chesley et al. (2020) suggest that the way to address what (Weiss and Molinaro, 2005) refer to as the leadership gap between what is required for the changing world landscape and the organisations within it and their capacity to solve the complex problems of the future is to shift the focus from competency models of leadership skills to growing and cultivating more sophisticated and agile mindsets. This case provides it is argued both some of the challenges and opportunities of doing just that.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

According to McCauley et al. (2006), there has been very little development research that focuses on the dynamics of developmental movements in the context of the impact of context variables such as the organisational holding environments on the developmental order of mind and leadership in an organisation. This study aimed to address this gap in the research by examining six different organisations as holding environments for different executive leaders in the context of understanding how leadership is ‘socially constructed in ongoing processes of intersubjective understandings and how underlying assumptions and understandings need to be examined (Alvesson and Spicer, 2012; Carroll, 2019; Mabey, 2013; Uhl-Bien and Ospina, 2012)’ (Kjellstrom, Stalne, Tornblom, (2020, p.438).

According to Day and Harrison (2007), leadership takes on multiple meanings as it evolves over time, and within this, there is no shortage of theories of leadership and definitions in the leadership literature (Grint, 1997). In this context, the purpose of this research was to understand what these theories are searching for in the sense of, is there a finite way to understand leadership, and if so, what is that finite way of understanding or knowing on behalf of? The review of the leadership literature then was based on seeking to understand the implicit assumptions inside some of the myriad of leadership theories as paradigms of thought that underwrite them in terms of how they are translated into practice inside organisations.

The study's premise was based on the conceptualisation of intention of human consciousness understanding consciousness (Scharmer and Yukelson, 2015) in that behind or underneath any leadership theory is some level of consciousness which impacts the enactment of the theory and its associated meaning making both individually and collectively. Furthermore, to understand intention as a level of consciousness, one needs to understand the social context of an organisation that is stimulating that sense making at given moments in time alongside the individual interpretation of that level of consciousness.

In this regard, the study drew on the constructive development theory of Kegan (1982, 1994) and Kegan and Lahey (2009) as its central conceptual framework within which to explore this idea of leadership as a psychological evolution in the development of levels of consciousness of different individual ELs inside the context of different organisational

holding environments. Correspondingly, understanding such consciousness as perspective-taking inside constructive development theory can provide insight into where individual ELs and organisations make meaning of their own leadership as a LOC inside the wider social and organisational LOC of that meaning-making hegemony operating inside organisations. As such, the axiology of this study was based on Kegan's (2020) proposition that as we move through ever more mature levels of mental complexity, we can close the gap between subject and object inside the interior of the self and, in so doing our cognition and our re (cognition) generates a new capacity of care with and to the other in which we see ourselves (Wilber, 2000). Thus, the proposition of the study is based on the idea of the importance of creating spaces in holding environments to generate new levels of mental complexity as expressions of leadership based on the evolution of embodied principles of care (Simola, 2003; Gabriel, 2015) influencing in turn decision making and action based on social values and broader values to society (Petreiglieri and Petreiglieri, 2015).

5.2 Objectives and Contribution of the Study

The objective of this study was to understand more about what is calling to be resolved in developing new levels of mental complexity as leadership inside the holding environments of 21st century organisations through gaining insight into the relationship between individual ELs and the holding environments of their unique organisation. It examined this by using adult development theory as the conceptual framework to understand leadership as proposed by (Day et al., 2014; Petrie, 2014; Strang and Kuhnert, 2008; McCauley et al., 2006). Adult development theory is shown in this research to offer a coherent and comprehensive framework for interpreting leadership and organisational holding environments as two entities with a reciprocal determinism expressed as forms of mind or LOC (Kegan, 1982, 1994).

These forms of mind or LOC are heavily implicated in leaders' decision-making in an organisation, and the underlying operating system that is driving those decisions as sense making became evident through the six case studies in this study. Furthermore, Kegan (1994) suggests that no one discipline, whether an organisational theory or individual psychology, has quite the dialectical grasp of both the individual and organisational dynamics at play in the mind's developmental processes, suggesting the need for a bridge between disciplines.

This research bridges the disciplines of organisational theory and individual psychology in the use conceptually of the symbolic interactionist perspective (Weick, 1995; Mead, 1934) and the constructive development theory of (Kegan, 1982; 1994) as an access point to understanding the underlying operating system of the organisation as a LOC and the exploration of leadership as an enacted social and psychological construct within it.

In this context, **chapter two** provided a detailed overview of the evolution of the meaning-making of the modern corporate organisation and the associated fundamental operating assumptions driving these organisations sense-making and enactment of organisation models. This was followed by an overview and critique of the nature and type of leadership theories that have emerged incrementally across a similar timespan of different historical and cultural models of work organisations. Finally, chapter two also provided a comprehensive description of the conceptual framework of Kegan's (1982,1994) constructive developmental theory used in the study together with the theoretical underpinnings of Kelly's (1955) personal construct theory used to underwrite the epistemological and methodological development of the perceptual matrix used as an interview technique in the interviews.

Chapter three described the multi-phase research design adapted for the purposes of this study with an explication of the subject-object theory and its associated SOI measure as used in the study. The SOI provided the basis for the development of the repertory grid into the perceptual matrix outlined in this chapter which was anchored inside the principles of the subject-object forms of mind and analysed using SOI protocols.

The penultimate chapter, **chapter four**, provided an analysis of six comprehensive case studies where the data from two sets of interviews were analysed, discussed, and applied to the organisation as holding environments using Laloux's (2014) framework of models of organisations. These in-depth case studies of both the individual EL and their respective organisational environments in this study contributes to the call by Alvesson and Jonsson (2018) for the need to consider and understand the consistency and inconsistency of leadership behaviour within the complexity of the organisational environment.

These issues became evident inside the case studies where (in)consistency in behaviour can be understood as a function of LOC in how individual ELs interpret the complexity of the organisation environment that they are embedded in and how in turn, the possible coherence or incoherence of their practice are reflections of that meaning making in their decision making and behaviour expressed inside different LOC (Kegan, 1982).

Much of the leadership research has been predicated on leadership performance as the criteria of interest, while Day et al. (2009) have argued for more focus on the interior layers of identity development in leadership research. This study shows the importance it is argued of understanding these interiors as individual underlying operating systems (Kegan, 1982, 1994) alongside implicit as well as explicit operating assumptions in models of organisation (Laloux, 2014) and associated context framing (Wolfe, 2012) as a possible route map to new understanding of that identity both as individual leaders and as new organisational paradigms and models for a 21st century world.

The method adopted and the study context represent a contribution to knowledge about psychological developmental approaches to understanding leadership and the bridging role of holding environments of organisations to this development. For example, Kegan and Lahey (2016) argue that the 20th-century answer to ‘developing potential was making the individual and not the organisation the point of dynamic entry’ (p.5) by finding ways to address this development through something outside the organisation as for example offsite training programmes and/or mentoring and coaching. However, meanwhile, the ‘organisation itself does not change’. Kegan and Lahey (2016) further suggest that applying principles of adult development theory to organisations has been given little attention in terms of applying the principles and methods to the entire organisation.

This research does situate itself between these two places of the individual ELs form of mind and the organisation systems as a form of mind enacted into sense making as organisational mindsets (Weick, 1995; Morgan, 1997; Laloux, 2014). In this context, the study contributes to new knowledge by applying the principles of adult development theory to the organisation. It did this by developing a unique perceptual matrix using the repertory grid methodology, which was underwritten by the theoretical principles of Kelly’s personal construct theory (Fransella, 2005; Bannister and Fransella, 1986) as an access point to both the individual EL and organisation LOC as concepts of a whole system. This proved a valuable method to access and provide insight into the perceived LOC of the organisations over time for the individual EL and provides insight into their own subjective LOC.

This was contrasted with the ELs objective LOC which was scored using the SOI protocols drawing on both the qualitative and quantitative data available from this method. The subsequent quantitative data from the perceptual matrix also gave a clear eyeball visualisation in the first instance into the patterns between the organisation system as a

holding environment and the individual EL underlying operating system expressed as a LOC.

Furthermore, the perceptual matrix provided a useful route map to then identify the gap in the mental complexity of leadership between forms of mind of the individual EL and forms of mind of their organisations holding environments and the precise nature of their interdependency in each case evident from the qualitative data in the study's findings across the six case studies. The overall data contributed to a deeper understanding of the underlying meaning-making between individual ELs subjective scoring of their LOC and the actual scoring of their LOC and its related significance to the role of their organisations as holding environments in this dynamic using the principles of the subject-object theory (Kegan, 1982, 1994).

This type of method and its related data contribute to research on leadership as developmental by providing a means to deepen the quality of awareness that Scharmer and Yukeslom (2015) argue is a necessary pre-exquisite to a deepening or transformation of any system. Scharmer and Yukeslom (2015) argue that this transformation is necessary to understand how intention is being applied to leadership actions or decisions in organisations. In this study, the process adapted to gain insight into LOC and the nature of its interdependency between the organisation as a holding environment and the individual executive as leader contributes to this quality of awareness in helping to both understand and help mature the structures running the meaning-making of the mind (Kegan and Lahey, 2009) as argued by (Hesling and Howell, 2014; Vincent et al. 2015) to be necessary for effective leadership in 21st century organisations.

Furthermore, it is argued that the longitudinal nature of the study contributes to the leadership research literature, which (Riggio and Mumford, 2011; Day et al. 2014 ;Dinh et al.2014) state has been lacking while the methodological approach of the study acts as a counterbalance to the prevailing convention of positivist research in leadership development where a lot of the empirical investigation of leadership development has been quantitative in nature. Indeed, several scholars call for more qualitative research (e.g., Dinh et al..2014; Parry et al. 2014; Stenzs et al., 2012). This study embraces both QUAN and QUAL data in its research design and strategies of inquiry.

The next section sets out to provide an account of the main conclusions of the research and its implications for future approaches to leadership as a social and psychological process inside adult development theory inside organisations.

5.3 Implications for Practice

The results across the six case studies show evidence that as individuals, we are not all the same in terms of our underlying operating systems (Kegan and Lahey, 2009) and that context (Wolfe, 2014) is vital in terms of the role of the holding environment on LOC. Furthermore, the strong association between leadership and context frames (Wolfe, 2012) was evident in the case studies where the embedded assumptions were reflected in the LOC of both the EL and organisations as different LOC. Probert and Turnbull James (2011) coined the phrase *the leadership concept* where people inside the organisation absorb a set of schema and operating assumptions about leaders and leadership of the CEO or top team, which is observed as rewarded in the organisation and this type of leadership concept was found inside some of the case studies. This became evident by identifying various stages and developmental transitions between the LOC of the individual EL and the influence of their holding environment on that meaning making as a LOC.

The data generated using Kegan's (1982, 1994) and Kegan and Lahey's (2009) levels of mental complexity as LOC helped show the three levels of mind in operation and practice inside the ELs own LOC. The cognitive level was evident in terms of ELs working out the operating assumptions of what the organisation wants and equally how that is experienced in their interior intrapersonal world and, its relationship in turn with the interpersonal world of communicating with others in the organisation were all present in the mix in sense making and in turn influencing decisions, behaviours, and action.

The study's findings suggest that leadership and leaders cannot be understood purely in performance terms but also needs to be balanced by social and psychological approaches to understanding leaders for a 21st-century reality in organisational models and systems. The study highlighted the fact that focusing on the developmental aspect of leadership illustrates the impact of underlying operating systems of feelings, emotions, and role identities of individual EL both inside and outside the workplace as a succession of holding environments (Kegan, 1994, 2001) influencing LOC inside the workplace. These influences on LOC in the study seem to confirm (Kegan and Lahey, 2009;2016) argument that organisations as a whole system would benefit from taking a developmental approach to leadership because it would release a lot of these internal conflicts and hidden competing commitments, which are holding the energy inside of people and inside of organisations that could be released into the energy of the whole system thus working more effectively.

Furthermore, the case study findings would support (Petriglieri and Petriglieri 2015) suggestion that leadership should be rehumanised in the sense of embracing leadership's social and psychological nature. Petriglieri and Petriglieri (2015) argue that leaders and leadership theories have been detached from everyday human life, either being conceptualised as some elevated virtue or focused purely on the economic aspects of efficiencies. While there is a place for performance and efficiencies, (Petriglieri and Petriglieri, 2015) argue that there is a need for more empathy and care in our understanding of a leader's development.

The authors state that leaders play a significant role in creating cultures that can embody our humanity rather than dis-embody it, which they argue, for example, that education courses on leadership have colluded with by how they have taught leadership. Furthermore, (Petriglieri and Petriglieri, 2015) argue that leaders are human beings that matter and there is a need to embed that humanity in our cultures inside organisations by understanding this social and psychological aspect of leaders and balancing the economics of the construct of leadership. In a similar vein (Kegan and Lahey, 2016) suggest that human development and organisational strength go hand in hand and that there is a need inside organisations for an approach to leadership that is developmental, and this study would confirm that contention.

Wolfe (2012) states that we cannot behave in ways contrary to context framing of organisations, which of itself cannot be easily measured yet defines what is or is not possible to do in organisational contexts. This study has found a way to measure some of these invisible issues lying deep in the structures of mindsets through examining the LOC underwriting the meaning-making in the structures of the mind inside individual ELs and holding environments of organisations. The next section provides a summary of the main findings that emerged within the perceptual matrix and interviews and implications for future research.

5.4 Lessons learned from Perceptual Matrix Interviews

In the first set of interviews, two of the ELs were operating from a developmental range within the 4th order self-authored LOC, and the other four executives were operating between a 3rd socialised, and 4th self-authored developmental range of LOC. All the ELs expressed the wish to operate at higher LOC, with 5 ELs wishing to have a 5th self-transformative LOC and one a 4th self-authored LOC as their ideal. All the ELs, in addition, wished their ideal organisations to be operating from a higher LOC than it was presently operating, with two scoring their ideal organisation as a 4th self-authored LOC.

The use of the perceptual matrix proved insightful in showing the expressed wish of all the six ELs to be operating at the developmental higher LOC and their ideal organisations also to be operating at the higher orders of LOC. However, given this expressed wish, while there was evidence in these first set of interviews of two ELs operating from developmental transitions within the 4th order self-authored LOC, there was no evidence across the six individual ELs and six different organisations of operating from a 5th self-transformative LOC or of their organisations operating from this level.

Four of the ELs were scored as making meaning in terms of the structures running the meaning-making of their minds at significantly lower levels than they had subjectively perceived and scored themselves. Furthermore, of the two other ELs, one identified his LOC as it was scored using SOI protocols as his underlying operating system, which was a function of either a high level of self-awareness and/or clear alignment with the cultural meaning-making of his organisation which based on the data from his second SOI interview seemed more likely to be the latter.

The other EL scored his LOC lower than it was operating, but that was clearly spelled out by the EL himself as a function of the cultural holding environment of his organisation. His reflections on this fact were evidence of his 4th self-authored LOC, together with other data confirming this in the interview and in his subsequent SOI interview.

The perceptual matrix interview data showed three of the ELs wished their ideal organisation to be operating at the 5th order self-transformative LOC. At the same time, two wanted their ideal organisation to operate as a 4th order self-authored LOC and one EL wishing their ideal organisation to be operating from a 3rd socialised LOC. These distinctions illuminate (Alvesson and Jonsson ,2018) argument for the need in understanding leadership and practice in terms of (in) consistencies, coherence and incoherence and the complexities of the organisation environment. In this study, these issues are illustrated through the meaning making of individual executive leaders LOC within their holding environments bearing out the need for understanding mental complexity in terms of the complexity of understanding leadership as a construct.

In one of the cases, one EL wished the organisation to operate at an ideal 4th order self-authored LOC rather than a 5th self-transformative LOC based on interpreting the need for compliance in the context of a pharma type industry necessary for regulation. A second EL who had their ideal organisation as a 4th order self-authored LOC and not a 5th order self-transformative LOC was based on issues of control and authority paradoxically inside an

organisation culture that was operating a flat structure with a significant emphasis on empowerment. This is a useful example that while the organisation holding environment seemed committed to giving up hierarchical forms of leadership, the EL may have shown a competing commitment to maintain control, creating a living contradiction that both the EL and organisation are caught in. This is a commitment that the EL is subject to, and in this context, there are then two powerful commitments creating conflict, which provides a useful insight into the dynamic equilibrium between the individual perceptual space worlds and the cultural worlds of the organisation akin to (Benson's, 2001) idea of places and locations of a felt self. Correspondingly, if this contradiction can become an object to the EL and the organisation, then inside Kegan's (1982) subject-object theory, there would be a bigger space to look at the contradiction, which could move into a new way of knowing, a new LOC as a new epistemology.

The third executive had his ideal organisation expressed as a 3rd socialised LOC in the context of his meaning-making of the financial regulation required of the bank in terms of external compliance to central bank protocols.

It is of note that the expressed constraints in the ELs mindsets on their organisation's ideal form of mind are interpreted by the EL in question as a function of the nature of the industry as a discrete holding environment influencing the LOC of the organisation. At the same time, paradoxically, all six ELs wished themselves to be operating at a higher LOC.

This is worth noting with regard to Laloux's (2014) observation that the stage of an organisations development is mirrored in the stage of its leaders as a LOC and again shows the broader complexities operating within the meaning making of leaders and leadership in different organisations as holding environments. In this sense, the study recognises the need for more nuanced interpretations of leadership by identifying and highlighting the complexity of the structures underwriting the meaning-making of the mind as LOC. This understanding of the significance of experience and its meaning making in transitioning to higher developmental orders of mind could help inform the practice of designing leadership as developmental activities that can develop more complex ways of knowing to match individual and organisational contexts.

5.5 Motivations and Holding Environments

The diversity of scores raised interesting observations in terms of motivation in the context of LOC and how all the ELs wished to be operating at higher LOC as developmental capacities across all the organisation holding environments. The motivation within the boundaries of LOC as it relates to the focus of this study emerged through the data either as a function of individual EL absorbing the curriculum of what their organisation required as the way to success and promotion and/or equally motivated by an opportunity for growth in their own career trajectory in a 21st century world and organisational models. There is evidence of both motivations operating in the sense that some ELs were more driven to develop these capacities for success in their organisation while others saw it as the future in the context of success. However, as evident in all but one of the first set of perceptual matrix interviews, their scores using the SOI showed they were ‘in over their heads’ (Kegan, 1994) in terms of their perceived LOC and actual LOC aligned or misaligned with this stated intention for higher LOC and the perceived role of their organisation as holding environments of this dynamic in meaning-making.

The data from these sets of interviews showed that four of the ELs were operating between the socialised and self-authored transitions as their centre of gravity and meaning-making as LOC, while two showed evidence of operating from within the self-authored to socialised range. These scores and the data underwriting them showed that while ELs want to grow in LOC and some organisations also want them too, they were simultaneously constrained from developing into these higher LOCs. This paradox can be understood within Laloux’s (2014) framework of organisations operating as a reflection of their own leadership as a stage of development holding the implicit culture of the organisation inside its operating assumptions of a given organisational paradigm.

For example, Laloux (2014) argues that most modern organisations are operating between a *Conformist-Amber* and an *Achievement Orange* stage of development, and because of this duality, when there is a conflict between these two stages, it is the performance rather than the values that will win out. This duality can become more complex when the stage of organisation is *Pluralist -Green* in its flatter empowered structure and leadership style but where performance outcomes are always the measure, and this can cause intrapersonal conflict in the LOC of an EL as was evident in one of the case studies. The issue with these developmental stages of organisations is that as metaphors, they are all underwritten by a model or paradigm of organisation based on an ego identity of recognition, belonging,

success and wealth within its overall identity as an organisation and the deep structures of its meaning-making. Therefore, within Laloux's (2014) developmental framework, until the organisation is operating from a second-tier level of consciousness understood as a *Teal* type of organisation, it cannot resolve these dualities because it needs to be operating in its leadership from a 5th order self-transformative LOC (Kegan, 1982, Kegan and Lahey, 2009).

This dynamic is akin to Schamer and Yukelson (2015) suggestion that behaviours inside systems such as work organisations cannot transform (deepen) or be transformed in, for example, ideas of leadership as transformational until there is a more profound quality of awareness of people in these systems on their own systems both individually and collectively, then they cannot apply that to their own actions. It is this type of quality of awareness that it is proposed is calling to be resolved in constructs of leadership inside organisations, and one route map to this resolution can be a developmental approach to leadership in organisations as a whole system, such as explored in this study.

Quality of awareness, for example, can be developed using Kegan and Lahey's (2009) *Immunity to Change* mapping process either at individual, group or indeed organisational levels or similar developmental tools such as the perceptual matrix used in this study that can help to provide insight into the underlying operating systems of the individual EL and the organisation as a holding environment. These types of developmental tools, in turn, can be the source of an optimal conflict (Kegan and Lahey, 2009) and optimal conflicts can create dis-equilibrium. This dis-equilibrium can be a possible gateway to new LOC if individual leaders or organisational systems accept the challenge and the complex interior work involved in the self to moving or transitioning more into 5th order self-transformative LOC for the spirit of this age and its need for deeper understandings in awareness of the construct of leadership.

While there was no evidence across any of the six ELs in the six different organisations making this type of 5th order developmental transition as a LOC, there was evidence of movement among three of them of a developmental transition within the 4th self-authored range of meaning-making in their second SOI interview taken a few years after the first perceptual matrix interview.

Two of the ELs, remained at the same developmental level across both interviews between a socialised and self-authored range (3/4) which was a function of their fusion in one case with the organisations meaning-making and in the other case aligning or falling in line with the organisations meaning-making.

One further EL had a transition movement within this range 3(4) to a 3/4) range in between her two interviews. This was a function of evidence of optimal conflict where her own underlying meaning-making which had carried her thus far successfully into a senior leadership role in the organisation based on what she attributed to personal traits she brought with her into the organisation, but which were now under pressure for meaning-making as the organisations culture required her to act differently. In this way, the organisation's holding environment supported and challenged a new LOC. However, it was doing so within *Achievement Orange* and *Pluralist Green* models of organisation (Laloux, 2014), which was equally causing internal conflict in this EL.

Laloux (2014) would perhaps understand this complexity and conflict as a *Pluralist-Green* organisation paradigm of belonging and harmony working side by side with an *Achievement Orange* paradigm of competition, innovation, and success. However, when it comes down to it in terms of empowerment in the organisation's structure, it all ultimately rests on performance and profit outcomes. This was what the EL in question, in this case, was struggling with where she experienced the invisible boundaries of levels of empowerment as the organisation not entirely living up to its mantra of such empowerment in some of her experiences in practice. In this regard, the observation of Grint (1997) on the nature of (re) constitutive leadership as a function of the nature of persuasiveness of voice with leadership being one where all voices are equal. However, as stated by Grint (1997) some can predominate and be more equal than others expressed in power differentials (Foucault, 1980) and reflected inside the agency-structure dilemma (Strati, 2000) within organisations and the idea itself of the construct leadership as one harmonious model.

These cases and their intricate complexities in their range of scores developmentally are evidence that we are not all the same and that we are heavily influenced by context (Wolfe, 2012). The study illustrates this through identifying the nature of some of these complexities through the lens of different LOC as levels of mental complexity applied in this study to meaning making of leadership. The LOC and the coherence and incoherence of their developmental stages help to make explicit the complexities in what is holding the meaning-making in place in the hidden competing commitments at the level of the individual EL and the holding environment of the organisation and its deep-rooted assumptions in the hidden curriculum of its culture.

5.6 SOI Interviews

The second set of SOI interviews provided further insight into the dynamics evident from the first set of interviews. Together both interviews showed that organisations can play a dual role in meaning-making of the individual EL. On the one hand, it was to be expected that if an EL is dependent on the norms of the organisation and its cultural and context meaning-making (Wolfe, 2012; Benson, 2001) for their measure of success and meaning-making of leadership as a place to get too, then one is likely to be operating from a socialised mindset. This echoes Stiglitz (2010) point that what you measure in organisations is what you value and what you value is what you measure.

In this context, the EL is referencing the organisation's visible structures and culture for meaning making of their sense of place, identity, and leadership opportunities. This is influenced by the leaders at the top of the organisation (Probert and Turnbull, 2011) as they are modelling the leadership both overtly and covertly in the assumptions running the paradigm of the organisation. On the other hand, as evident in some of the cases when individual ELs came up against the limits of the LOC of the organisation with their form of mind, that experience of itself can create an optimal conflict (Kegan and Lahey, 2009) which can prompt people further into a new transitional movement in their LOC and there was evidence of this in three of the ELs and their organisation as a holding environment.

There was movement in LOC for four executive leaders across the two sets of interviews, with two staying at the same LOC in both interviews. Three ELs were operating within the 3 to 4 range while three were operating within the 4 to 3 range, with one EL making a significant movement from 3/4 to a 4/3 from his first interview to his second interview. This EL was identified as a possible outlier within the culture of his organisation with the potential to move into new 5th order LOC, which could, drawing on Laloux's (2014) conceptualisation have a significant impact on the model of organisation as a second-tier level of consciousness reflecting Kegan's (1982) 5th self-transformative LOC and Probert and Turnbull James (2011) *leadership concept* as a member of the top team.

The data showed that while all 6 ELs were broadly within an age range of 35 – 45 years of both men and women, the theory that there can be differences within the same age range was evident in the case studies in this research (Kegan and Lahey, 2009). Equally as Kegan and Lahey (2009) point out it is generally within this age range where the possibility arises for the emergence into self-authored forms of mind and further as (Hesling and Howell, 2014)

suggest leaders need to be operating at least at the self-authored form of mind to be effective in the environments of 21st century organisations.

Furthermore, while some of the ELs showed developmental movement between both interviews and across associated time frames and some across two or more organisations as holding environments, others stayed within the same developmental stage and range as a plateau or resting place, possibly before another developmental movement. In Kegan's (1982) theory, the tension between the support to hold on and the challenge to let go before transitioning to higher developmental levels is essential to understand and an essential part of adult development theory. Correspondingly there is a balance possibly in motion inside these case studies where individual ELs are neither alienated from the organisation nor overly dependent on it for their LOC. Furthermore, the developmental movement or lack of it could be a function of the fact that as Waddock (2006) points out many people do not move beyond the socialised LOC. While the form of mind tends to grow over time, such growth is only essential to the demands made upon it and as Garvey Berger (2012) suggests, it is the interaction between the demands made on the leader and the leader's capacity for self-complexity that matters most. Therefore, as evidenced in some of the holding environments, the organisation as a stage of development was operating at a socialised mindset, maintaining a *Conformist Amber* model of the organisation while paradoxically having individual ELs who were operating between a socialised LOC and self-authored LOC and in this context constrained within the stage of development of the organisation. Notwithstanding these various possible mediating variables in the mix, a vital issue for 21st-century leaders are distinct challenges calling for at least more self-authored forms of mind in organisations (Hesling and Howell, 2014) and more optimally to operate at 5th order LOC (Vincent et al.2015).

In the second set of SOI interviews, none of the ELs scored a developmental score of a 5th order LOC. For example, there was no data across any of the ELs within their different organisations who, for example, questioned the ideology of the organisation's operating assumptions, which a 5th order LOC would demonstrate. In other words, it would show a capacity to hold multiple possible systems as the potential for meaning making within their work organisations and then an equal related potential for leaders to shape and influence possible new models of organisations reflecting that level of consciousness. Therefore, the case studies showed different motivations in the underlying operating systems of individual ELs (Kegan and Lahey, 2009), reflecting the push and pull within those LOC interacting with the different operating assumptions underwriting organisational models.

However, amongst all the ELs across all the organisations was a wish to be on the higher end of the LOC in their own developmental capacity and their ideal organisation also to be operating from higher LOC.

This could be an optimal collective conflict in terms of signalling a moment in time ready for a whole system level of consciousness shifting into a new sense making and enactment of organisations paradigms through new levels of consciousness emergent in leaders. This could more than ever be influenced by both the challenges and possible opportunities of the consequences of Covid 19, which could optimistically, against its many tragedies, be an optimal conflict in the sense of creating enough dis-equilibrium for new levels of consciousness and new associated perspectives and ideas to emerge in understanding leadership which, in turn, form into new models of organisations as holding environments.

5.7 Findings and Implications for Further Research

A key finding of interest across these cases is that they show very clearly the common experience of how different personalities of executive leaders as individual people struggle inside the holding environments of their organisations. For example, it was evident that people want to grow yet found it hard and almost impossible to move into for example 5th LOC (Kegan,1982) beyond using the terminology such as ambiguity and paradox because these terms of themselves seemed more a methodology , another how to of leadership living inside primarily what Laloux (2014) would refer to as first tier consciousness in terms of stages of organisational development.

The result is that people have to metaphorically mask up, to be seen to be demonstrating these capacities, to be perceived as both professional and competent. However, at the same time the lived experience and living contradiction is that individual hidden competing commitments based on the corresponding hidden curriculum of the organisation is resulting in repressing the truth of real selves where the real world translation of ambiguity and paradox lives and not inside the rhetoric of these terms as knowledge concepts.

In this regard people are ‘in over their heads’ because organisations are in a living contradiction inside these language frames and the lived experience of people evident across the cases. People are disconnected from their essence in the sense that to do well which is a natural need also requires to do so within these living contradictions which requires one to deny the essence of oneself.

This is what Kegan and Lahey (2009) refer to as people bringing two selves to work expressed in holding or with- holding energy inside hidden competing commitments and the part the holding environment is playing in that process is evident across the findings in the cases.

While the focus in this study was on forms of mind and not on gender, what the study showed was human beings, people inside the social constructions of role identity are all equally subject to various degrees of suppressing the essence of themselves and in that sense the thesis findings moves the narrative beyond gender as a power differential and more to a focus on forms of mind as an over-riding power differential in understanding consciousness as human intention underlying behaviour inside organisation and leadership systems ((Scharmer and Yukelson, 2015).

It was evident in the cases across both genders how to different degrees and ways a need for more awareness of the real struggle for people to be seen as who they are , in their selves, in their relationships as equally influential holding environments (McCauley et al , 2006) and how they have shown that struggle in that the holding environment of the work organisation (wittingly or unwittingly) presses it down or certainly has not enough space for it. The result is hiding the essence of oneself inside ideas of strength and leadership heralded inside words like ambiguity and paradox where in fact the reverse of this is true in that it is our humanity that makes us strong (Petriglieri and Petriglieri, 2015) in the sense that our strength in fact lies in our very humanness where empathy and care abound reflecting the call of (Petriglieri and Petriglieri, 2015) for the humanisation of leadership in our organisations and in how it is taught in business and educational environments. They suggest that the route map to such a construct of leadership is based on ‘one’s own personalisation and contextualisation of life events’ (2015, p.62) and the findings in this study seem to mirror this call.

Correspondingly a key implication of the findings of this study is that organisations are asking the wrong question in terms of their people and their construction as leaders. As was evidenced in the perceptual matrix each individual leader wants to grow and each leader wants their organisation to grow in terms of mental complexity. Generally, the question from senior leaders in organisations is *a how to* question and in this context how do I get my people on board developmentally to have these capacities of new forms of mind?

Whereas the real question evidenced in the findings in the data in this research is who and what do we need to *be* as an organisation for the future in dealing with our own living contradictions in order to enable both individual leaders and the collective organisation to move into the levels of mental complexity which are stated as say both wanted, needed and required for present and future complexities as expressed by Kagan and Lahey ((2009) as 5th order LOC and by Laloux (2014) as Teal or second tier consciousness.

A possible first step is to use the perceptual matrix as a window into your own organisation both at individual and organisational level in terms of what it is saying about the distribution of mental complexity as it presently stands as well as what it wants it to be. This would be it is proposed a powerful way to get insight which is not coming from outside the organisation from some academic advisor but is basically a case of you (individually and collectively) telling yourself about where you are and where you need or want both yourself and the organisation to be . This then can inform policy decisions about what developmental tools are needed to help in this process of addressing leadership into the future as a psychological process within the self and within the organisation as one whole system reflecting mental complexity.

This exercise of itself provides the possibility for new models of leadership as expressions of forms of mind and associated new systems of organisations to emerge into the future.

Further in this regard as above it takes the narrative a step further than issues of gender or diversity into the human domain and in that sense, it does two things. First because you are effectively telling yourself as a community or individual where you stand and where you want to stand in terms of forms of mind it can be relied on, and removes the threat sometimes hidden inside narratives of difference and differentials of power (Foucault, 1980) whether gender or otherwise inside social and organisational systems and structures.

Finally, the findings are relevant within the context of Covid in terms of understanding leadership as psychological development process and future social structures of organisational systems . Prior to Covid the world of work had already begun to change as a result of a combination of technology, globalisation, and the knowledge worker evident in hybrid models of working in some organisations.

As a result of Covid what has become even more visible is our very humanity when our worlds collide between personal and professional and we can see each other on zoom calls for example with our dogs our children our parents, our grandparents.

In that sense while the narrative has been about the difficulties of marrying both personal and professional in terms of focus, there is an opportunity and a conversation to be had about a new type of organisational holding environment that embraces and includes different holding environments (Mc Cauley et al., 2006) where perhaps the hidden curriculum becomes less hidden and we re-invent ideas of not only work from home but what professionalism means, what competencies mean, and how we close the gap between the subject-object within ourselves and within each other and so as Kegan (2020) says become more caring of both ourselves and each other. Further perhaps it provides an opportunity to create work constructs of organisations and leadership systems within them based less on the selfish gene of rational economics and more the unselfish gene as a possible metaphor for new ways of Being. Being and becoming are what leadership into the future is rather than a list of how to rules to be the next leader.

5.8 Recommendations for further research

Given the nascent, although growing body of research in this area, it is suggested that there is a need to widen the net of organisations as holding environments exploring leadership as a psychological and social process within constructive developmental theory.

Furthermore, it would be useful to spread this research to more European organisations and individual EL to get a broader view of the pattern of issues emergent within holding environments, the LOC presenting and how typical and atypical they may prove to be compared to the meta-analysis from studies in USA on LOC. It would also be helpful to do a study like this on a particular unit or department within a large organisation to get a pulse of the nature of its culture as a holding environment and its LOC that are predominating and the degree to which it is typified throughout the rest of the organisation by further cross-referencing research within the entire organisation in terms of LOC. This type of research could provide a launching pad of evidence-based data to design psychological developmental approaches tailored to the organisation that would enable 5th order LOC to emerge in leadership constructs as part of organisational policies and part of overall transitions in LOC necessary for 21st-century world.

It would also be helpful to conduct similar interviews and related interventions in terms of developmental approaches to learning and leading in business schools or other education learning environments to understand the LOC operating within the learning system responsible for the education of leaders of the future.

This may provide insights that could improve the design of leadership development activities and tailor leadership development to better match individual and organisational contexts within education environments.

This would build on Handy's (2018) contention that development cannot be taught but can be encouraged within the broader context framing in the environmental conditions such as his example of the business school acting in turn as (Petriglieri and Petriglieri, 2010) suggest as an influencing identity environment. Laloux (2014) equally suggests that the conditions for consciousness development can be created through leaders at the top of an organisation who are willing or who have started to take these interior leaps within their meaning-making of organisation and its relationship to their leadership embodied and enacted in them through emerging into new capacities as forms of mind. Kegan and Lahey (2016) offer examples in their book *Everyone Culture* of very different organisations where the principles of development for everyone are a living practical reality imbued into the organisation's daily operations, leading to successful outcomes for the organisations and the people working in them. Finally, it would be interesting as a future area of research to examine Irish companies who may be taking or interested in taking a similar determinedly developmental approach inside their entire organisations.

5.9 Conclusion

The study provides evidence of two key observations made by Kegan (1982, 1994) and Kegan and Lahey (, 2009,2016). The first observation is that many executives are 'in over their heads' in developmental terms and while they may have a sophisticated language of development as may their organisations that when you look beneath the surface at the structures running their meaning-making and that of their organisations, they are in fact 'in over their heads'. This suggests that the findings of the study make a clear argument for the need for leadership to be understood beyond skills and competencies (Probert and Turnball James,2011) but rather to be understood as a function of mental complexity, which is, in essence, a developmental process inside LOC influencing and enacting human intention and action.

In this context, the study demonstrates the importance of leadership research and scholarship that takes account of 'the cultural and psychological processes' that Probert and Turnball James (2011, p. 138) argued has not been accounted for in the leadership literature as well as a way of addressing the gap in exploring the more subtle, moral, emotional, and relational

aspects of leadership (Bolden and Gosling, 2006) that have been missing from competency models of leadership.

The second observation is that the approach to 21st century leadership as a developmental process needs to be addressed at the level of the organisation as the point of entry rather than outside of the organisation (Kegan and Lahey, 2016). The LOC and the contradictions and conflicts within them, as illustrated through the case studies, would point to a need to work inside the holding environment of organisations as the 21st century way forward to the development of leadership. The results of the diverse case studies provide a useful insight into the importance of organisations leading on making implicit assumptions more explicit and helping rethinking approaches to understanding leaders in 21st century context of organisations of all kinds.

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APPENDIX A

FORMULATION PROCESS SHEET

Name or code of Interviewee:

Analysis Page

Bit	Range of Hypotheses	Questions
Interview page	1 1(2) 1/2 2/1 2(1) 2 2(3) 2/3 3/2 3(2) 3 3(4) 3/4 4/3 4(3) 4 4(5) 4/5 5/4 5(4) 5	What structural evidence leads you to these hypotheses? What evidence leads you to reject other plausible counter-hypotheses? If you have a range of hypotheses, what further information do you need to narrow the range?

APPENDIX B

SUBJECT OBJECT ANALYSIS FORMULATION SHEET

Name or code of Interviewee:

- A. Tentative Overall Hypothesis—minimum of 3 bits reflective of each hypothesis: _____

- B. Rejected Tentative Hypothesis/Hypotheses and Reason(s) for Rejection.
1. Hypoth: _____ Why rejected:
2. Hypoth: _____ Why rejected:
- C. SINGLE OVERALL SCORE (S.O.S.) – minimum of 3 bits reflective solely of this score: _____
- [If interview not scorable with single score, enter range of scores. Explain what further information needed to reach single score.]
- D. Testing S.O.S. If you have not already justified your rejection of scores on either ‘side’ of the S.O.S., do so here:

APPENDIX C

R OPEN REPERTORY GRID ANALYSIS REPORT

Introduction

A dataset of a repertory grid system of 6 individuals was provided for statistical analysis. This data was multivariate data in nature. The client proposed using an R package called Open Rep Grid written by Mark Heckhamm for analysis. R is an open-source statistical analysis program that uses functional programming to write scripts for analysis including graphics. The data provided consisted of 16 constructs with 6 elements for 6 individuals. An initial assessment of the distribution of the dataset was completed as well as generalized statistics, followed by principal component analysis.

The OpenRepGrid package was used to run biplots and Bertin grids along with clustering techniques. However, the client identified issues with the interpretation of the biplot and with the integrity of the Bertin grids when clustering techniques were performed.

Based on this feedback from the client, an alternative technique was adapted based on interpretation of the Biplot by stepping outside of Mathematics and looking for comparative techniques for interpretation as outlined in this report. In the final results for each subject include the following graphics:

- Initial Data
- Generalised statistics
- Loadings on Principal Component Analysis
- Principal Component Analysis spread
- Biplot
- Individual Clustering for Elements and Constructs.

Methodology

An initial assessment of the data was conducted by running statistical analyses using base R functions. This was to determine if the data fit a normal distribution and if so, then parametric tests could be conducted. In order to do this a Kolgomorov-Sinovtest was conducted which resulted in a very small p value which was indicative of the data being non-parametric in fit and nature. This meant that all tests conducted using correlation matrix had to be conducted using Kendall-Tau Correlation as this is the non-parametric coefficient.

Using the base R Package stats, Principal Component Analysis was completed using the `princomp()` function. Principal Component Analysis was chosen as the technique to use for this analysis as the data was multivariate and there are a few ways to analyse multivariate data. Principal Component Analysis is one of the best techniques to adopt with the primary goal of dimension reduction. The Principal Component Analysis resulted in loading values for each construct. These loadings were interrogated for each component for each construct, any values over 0.500 were considered significant and any values below 0.100 were left blank as these were considered insignificant. This interrogation led to a valuable understanding of each construct and how significantly important the construct was for each individual.

One of the keyways to visualize Principal Component Analysis is using a Biplot. Biplots were run using the OpenRepGrid Package.

However, interpreting the Biplots was difficult, and the client requested a more coherent assessment. At this point Bertin Clusters were run in R using the OpenRepGrid Package.

The client noted that the numbers changed and requested for this to be checked. In order to understand this change, I set out to check the code underlying the function.

To understand the numbers changing there was a hypothesis that the number did a transformation of some sort however from looking at the code there was no transformation function or variable whatsoever and the hypothesis was proven to be false.

This repository also has an issues list, and after reviewing 16 issues, this particular issue was not a known bug, and its origin was not understood. After conversing with the client on the results these issues were deemed unacceptable and needed a new approach. Mark Heckmann the owner of the package was contacted and enquiries about this possible bug and he confirmed that numbers in Bertin should not change, and this was then confirmed as **an unknown bug**. Mark requested stripped down script to confirm what was the issue on his side with the coding of that function in the package.

This difficulty of interpreting the Biplot was overcome by looking at marketing examples of interpreting Biplots and using the Principal Component loadings to understand each construct and how it related to each element.

An initial reordering of the matrix of the data along the diagonal was done by visually moving rows and columns according to similarities. However, the client suggested that she felt these results lacked integrity and the mathematical approach used up until that point in

the analysis was not reliable, so after conversing with the client a solution was highlighted that could be applicable by using the clustering with the manual reordering described below.

A question arose from discussions with the client who asked, 'Would the biplot be the same as before any analysis was completed?' I advised they would. However, the Principal Component Analysis available in the OpenRepGrid was not enough to analyse and interpret the data.

The PCA in the package was done on the elements on their own and their constructs on their own and it did not allow for an overview analysis to be completed which the client advised was imperative. As both of these analyses were completed using different packages and the answers aligned, the confidence in the integrity of the Biplot in OpenRepGrid Package increased.

Since then, the researcher of this report requested Mark Heckmann to look at the numbers against the Biplot and see what he would expect. However, this response did not materialise, and the author of this thesis chose not to proceed with this approach as it was deemed as not being not reliable in terms of the integrity and interpretation of the data. The author of the thesis advised that there was no further engagement required on this approach.

Subject Analysis and Results

Looking at the descriptive statistics for the constructs alone informs of single construct statistical values. Construct 6 – Comfortable with Ambiguity – Uncomfortable with Uncertainty has the lowest mean and median and there is no obvious highest value. There are other descriptive statistics, skewness and kurtosis representative of the distribution underlying the data. The skewness determines symmetry or lack thereof and identifies heavily tailed data whereas kurtosis is a measure of data being flat or peaked in relation to a normal distribution. These values on their own don't give us an indication of whether the underlying distribution is normally distributed or not.

Running a Kolgomorov-Sinov test on the dataset determines the p-value is extremely small which can either indicate, not normal or heavily two-tailed. In this case looking at the data with this insight suggest it is not normal and likely log-normal, so the logarithm of the dataset is normally distributed.

```

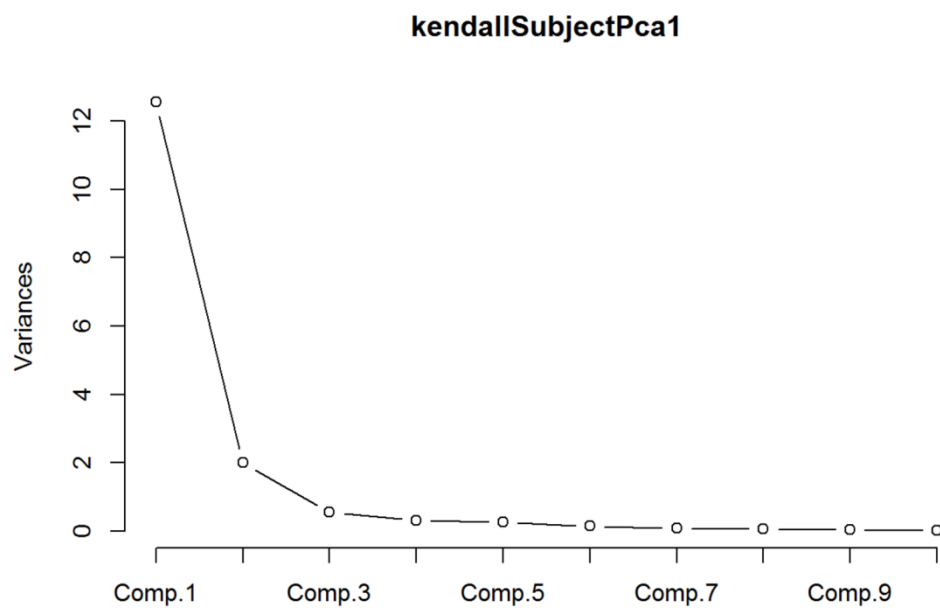
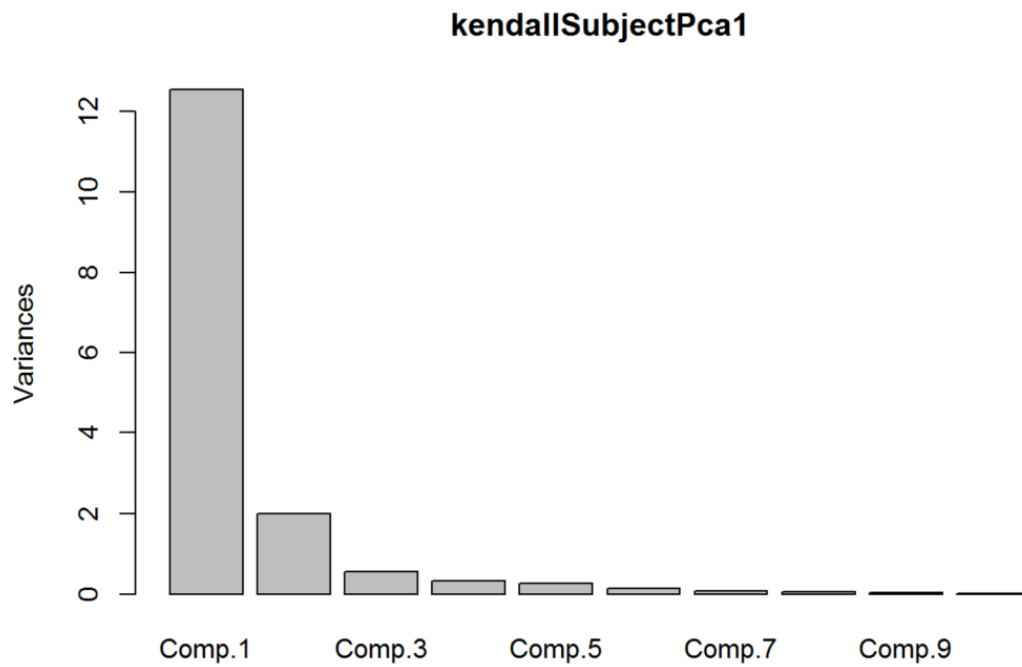
## #####
## Descriptive statistics for constructs
## #####
##
##
## vars n mean sd median trimmed mad min max
## (1) Independen - Faithful F 1 6 3.08 1.07 3.00 3.08 1.11 1.5 4.5
## (2) Interdepen - Aligns Wit 2 6 3.08 1.07 3.00 3.08 1.11 1.5 4.5
## (3) Set Agenda - Seeks Appr 3 6 3.00 1.00 3.00 3.00 0.74 1.5 4.5
## (4) Problem So - Standard S 4 6 2.58 1.02 2.75 2.58 0.74 1.0 4.0
## (5) Problem Fi - Team Playe 5 6 2.25 0.88 2.50 2.25 0.74 1.0 3.0
## (6) Comfortabl - Uncomforta 6 6 1.83 0.88 1.50 1.83 0.37 1.0 3.5
## (7) Hold Multi - Holds to O 7 6 2.42 0.86 2.50 2.42 1.11 1.5 3.5
## (8) Open & Cur - Rigid & Cl 8 6 2.75 0.94 2.75 2.75 1.11 1.5 4.0
## (9) Can Take R - Externalis 9 6 3.00 0.95 3.00 3.00 1.11 1.5 4.0
## (10) Internalis - Externalis 10 6 2.92 0.86 3.00 2.92 0.74 1.5 4.0
## (11) Manages Co - Torn in Co 11 6 2.58 1.02 2.75 2.58 0.74 1.0 4.0
## (12) Delegates - Control 12 6 2.58 0.92 2.50 2.58 0.74 1.5 4.0
## (13) Empower - Hold on/Ho 13 6 2.58 0.92 2.50 2.58 0.74 1.5 4.0
## (14) Adaptive L - Technical 14 6 2.33 1.08 2.25 2.33 1.11 1.0 4.0
## (15) Can Voice - Subject to 15 6 2.92 1.02 3.00 2.92 1.48 1.5 4.0
## (16) Leads to L - Learn to L 16 6 2.17 0.75 2.00 2.17 0.74 1.5 3.5
##
## range skew kurtosis se
## (1) Independen - Faithful F 3.0 -0.08 -1.58 0.44
## (2) Interdepen - Aligns Wit 3.0 -0.08 -1.58 0.44
## (3) Set Agenda - Seeks Appr 3.0 0.00 -1.29 0.41
## (4) Problem So - Standard S 3.0 -0.19 -1.39 0.42
## (5) Problem Fi - Team Playe 2.0 -0.27 -1.97 0.36
## (6) Comfortabl - Uncomforta 2.5 0.98 -0.66 0.36
## (7) Hold Multi - Holds to O 2.0 0.01 -2.08 0.35
## (8) Open & Cur - Rigid & Cl 2.5 0.00 -1.80 0.38
## (9) Can Take R - Externalis 2.5 -0.29 -1.53 0.39
## (10) Internalis - Externalis 2.5 -0.38 -1.32 0.35
## (11) Manages Co - Torn in Co 3.0 -0.19 -1.39 0.42
## (12) Delegates - Control 2.5 0.28 -1.66 0.37
## (13) Empower - Hold on/Ho 2.5 0.28 -1.66 0.37
## (14) Adaptive L - Technical 3.0 0.26 -1.58 0.44
## (15) Can Voice - Subject to 2.5 -0.17 -1.85 0.42
## (16) Leads to L - Learn to L 2.0 0.71 -1.15 0.31

```


Looking at the statistical values on their own, can only give certain insights. This data is multivariate. Multivariate data happens when values of several random variables on a number of subjects are recorded and this is an ideal example of multivariate, giving the scale within a scale. Multivariate data is ubiquitous by nature There are a few ways to further analyse multivariate data and for this study both Principal Component Analysis and Hierarchical clustering have been chosen.

Principal Component Analysis is a dimension reduction tool, and this dataset has 16 dimensions, whilst trying to keep as much of the variation as possible in order not to lose granularity. It is a non-destructive test as it reframes the data using their eigenvalues and eigenvalues. The purpose of Principal Component Analysis is to describe variation in a set of correlated variables and identifying which correlation coefficient to use is determined by whether the assumption of the underlying distribution is normal or not normal (parametric/non-parametric) and since it has been established it is not normal the only option is Kendall-Tau correlation coefficient. Principal Component Analysis happens by transforming to a new set variable called the principal components which are linear combinations of the original variables which are uncorrelated and are ordered so that the first few of them account for most of the variation.

In an ideal situation the result of Principal Component Analysis would be the creation of a small number of new variables that can be used as surrogates for the originally large number of variables and consequently provide a simpler basis for graphing and summarizing the data.



The next question is how many principal components are statistically important? On the line chart above, looking for the elbow indicates where to cut off and stop viewing that component as significant. The y-axis on both charts are the eigenvalues which are approximately equal to the standard deviation squared. The importance of components, one only considers the standard deviation above 1. For this subject only the first two principal

components are above the importance line of standard deviation >1 accounting for 78.46% and 12.48% of the variation respectively.

	Standard Deviation	Eigenvalue	% Of variation accounted for
Principal Component 1	3.54	12.53	78.46%
Principal Component 2	1.41	1.98	12.48%
Principal Component 3	0.74	0.54	3.44%

```
## Importance of components:
##               Comp.1   Comp.2   Comp.3   Comp.4   Comp.5
## Standard deviation   3.5432431 1.4131932 0.74211869 0.56398666 0.5120578
## Proportion of Variance 0.7846607 0.1248197 0.03442126 0.01988006 0.0163877
## Cumulative Proportion 0.7846607 0.9094804 0.94390166 0.96378172 0.9801694
##               Comp.6   Comp.7   Comp.8   Comp.9
## Standard deviation   0.375671360 0.275100760 0.227927641 0.179505801
## Proportion of Variance 0.008820561 0.004730027 0.003246938 0.002013896
## Cumulative Proportion 0.988989980 0.993720007 0.996966945 0.998980841
##               Comp.10   Comp.11   Comp.12   Comp.13
## Standard deviation   0.1119918430 0.0613544603 2.523709e-08 1.527485e-08
## Proportion of Variance 0.0007838858 0.0002352731 3.980693e-17 1.458256e-17
## Cumulative Proportion 0.9997647269 1.0000000000 1.000000e+00 1.000000e+00
##               Comp.14 Comp.15 Comp.16
## Standard deviation   1.014433e-08      0      0
## Proportion of Variance 6.431718e-18      0      0
## Cumulative Proportion 1.000000e+00      1      1
```

So, looking at the loadings in the principal component analysis, say for example on the third component mathematically this is a linear combination of the following constructs, and these are labelled in the second equation:

$$\text{PC3} = -0.435x_1 - 0.120x_2 - 0.120x_3 - 0.366x_4 + 0.318x_7 - 0.143x_9 - 0.120x_{10} + 0.176x_{11} - 0.143x_{15} + 0.661x_{16}$$

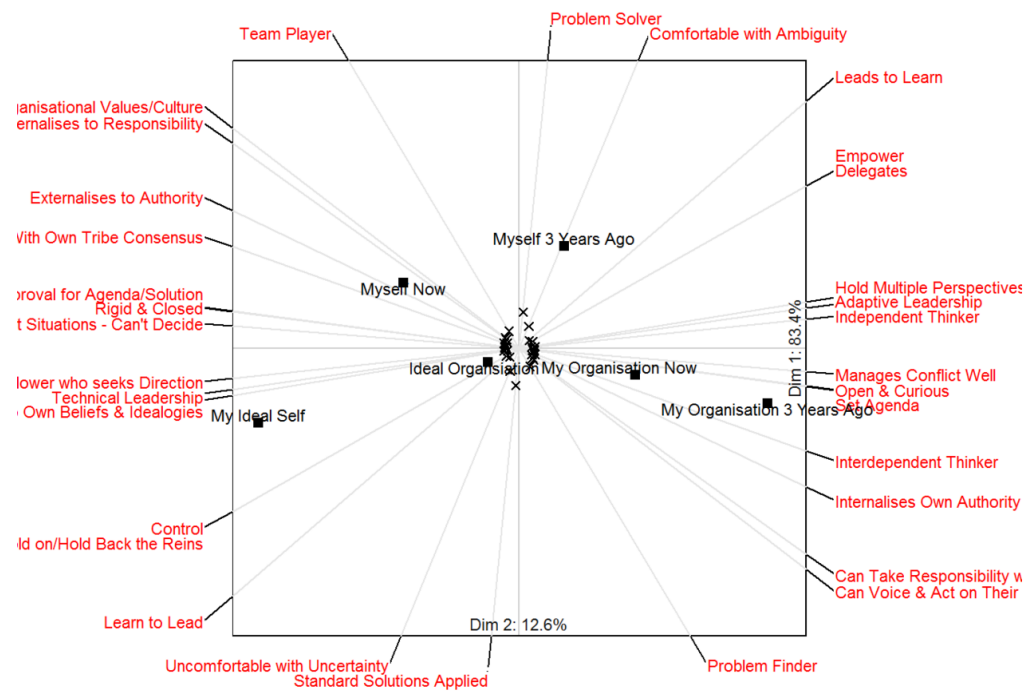
PC3 = -[(.0435)*(Independent Thinker - Faithful Follower who seeks Direction)]- [(0.120)*(Interdependent Thinker - Aligns With Own Tribe Consensus)]-[(0.120)*(Set Agenda - Seeks Approval for Agenda/Solution)]-[(0.366)*(Problem Solver - Standard Solutions Applied)]+[(0.318)*(Hold Multiple Perspectives - Holds to Own Beliefs

&Ideologies)]-[(0.120)*(Internalises Own Authority - Externalises to Authority)]+[(0.176)*(Manages Conflict Well - Torn in Conflict Situations - Can't Decide)]-[(0.143)*(Can Voice & Act on Their Own Values - Subject to Organisational Values/Culture)]+[(0.661)*(Leads to Learn - Learn to Lead)]

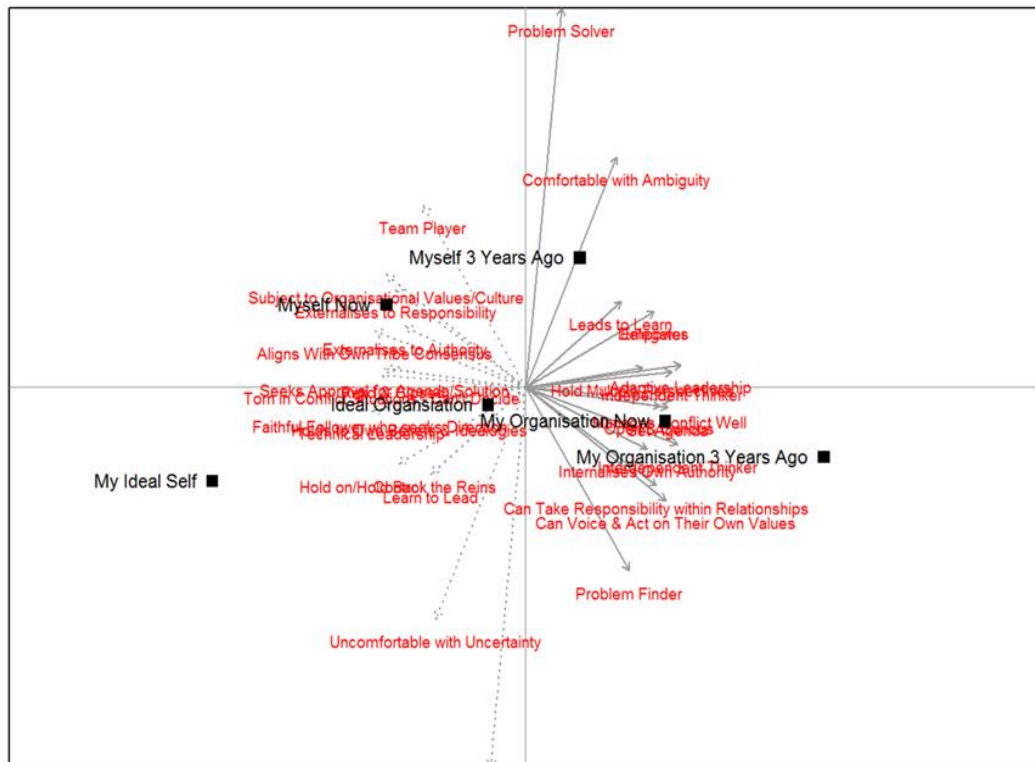
Loadings:

##		Comp.1	Comp.2	Comp.3	Comp.4	Comp.5	Comp.6	Comp.7
##	Independen - Faithful F	-0.237	0.154	-0.435	0.598	0.152	0.310	
##	Interdepen - Aligns Wit	-0.275	-0.103	-0.120	-0.133			-0.332
##	Set Agenda - Seeks Appr	-0.275	-0.103	-0.120	-0.133			-0.332
##	Problem So - Standard S		0.637	-0.366	-0.418	-0.414	0.316	
##	Problem Fi - Team Playe	-0.222	-0.353		-0.372	0.370	0.535	-0.156
##	Comfortabl - Uncomforta	-0.144	0.539		-0.237	0.665	-0.370	
##	Hold Multi - Holds to O	-0.267		0.318		-0.208	-0.113	
##	Open & Cur - Rigid & Cl	-0.277				-0.220	-0.239	
##	Can Take R - Externalis	-0.267	-0.166	-0.143	-0.190			0.541
##	Internalis - Externalis	-0.275	-0.103	-0.120	-0.133			-0.332
##	Manages Co - Torn in Co	-0.276		0.176		-0.173		
##	Delegates - Control	-0.271	0.143		0.253	0.126		0.105
##	Empower - Hold on/Ho	-0.271	0.143		0.253	0.126		0.105
##	Adaptive L - Technical	-0.277				-0.220	-0.239	
##	Can Voice - Subject to	-0.267	-0.166	-0.143	-0.190			0.541
##	Leads to L - Learn to L	-0.235	0.126	0.661			0.439	
##		Comp.8	Comp.9	Comp.10	Comp.11	Comp.12	Comp.13	
##	Independen - Faithful F	-0.406		-0.147	0.255			
##	Interdepen - Aligns Wit		-0.279	-0.118		0.265	0.756	
##	Set Agenda - Seeks Appr		-0.279	-0.118			-0.277	
##	Problem So - Standard S							
##	Problem Fi - Team Playe		0.355	0.320				
##	Comfortabl - Uncomforta		0.118					
##	Hold Multi - Holds to O	-0.548	-0.139	0.665				
##	Open & Cur - Rigid & Cl		0.513		-0.182	-0.532	0.236	
##	Can Take R - Externalis	-0.109		-0.149		-0.404		
##	Internalis - Externalis		-0.279	-0.118		-0.167	-0.479	
##	Manages Co - Torn in Co	0.430			0.811			
##	Delegates - Control	0.378	-0.176	0.197	-0.303			
##	Empower - Hold on/Ho	0.378	-0.176	0.197	-0.303			
##	Adaptive L - Technical		0.513		-0.182	0.532	-0.236	
##	Can Voice - Subject to	-0.109		-0.149		0.404		
##	Leads to L - Learn to L	-0.161		-0.501	-0.110			
##		Comp.14	Comp.15	Comp.16				
##	Independen - Faithful F							
##	Interdepen - Aligns Wit			-0.150				
##	Set Agenda - Seeks Appr	0.593		0.479				
##	Problem So - Standard S							
##	Problem Fi - Team Playe							
##	Comfortabl - Uncomforta							
##	Hold Multi - Holds to O							
##	Open & Cur - Rigid & Cl	-0.238		0.323				
##	Can Take R - Externalis	0.341		-0.464				
##	Internalis - Externalis	-0.549		-0.329				
##	Manages Co - Torn in Co							
##	Delegates - Control		-0.707					
##	Empower - Hold on/Ho		0.707					
##	Adaptive L - Technical	0.238		-0.323				
##	Can Voice - Subject to	-0.341		0.464				
##	Leads to L - Learn to L							

The first principal has one blank value which means the value is below 1.0 and this construct is *Problem Solver* which shows up as the most significant construct in the second principal component. The remaining spread on the first principal component is spread averaging ~ 0.25 . The second principal component has a second significant construct namely *Comfortable with Ambiguity*. Significance is viewed as the absolute value on the loading above 0.5.



2D Biplot for Subject 1



2D Biplot for Subject 1 with Analysis

The most significantly important constructs have the longest arrows. These are

- Problem Solver = 1 for Myself 3 Years Ago
- Comfortable with Ambiguity = 1 for Myself 3 Years ago
- Problem Finder = 1 for My Organisation 3 Years Ago

Reading the biplot you look at the most significant construct – Problem Solver and then draw perpendicular lines to that construct. As you hit each element as you move away from the arrow, the first element is the most significant and the last is the least.

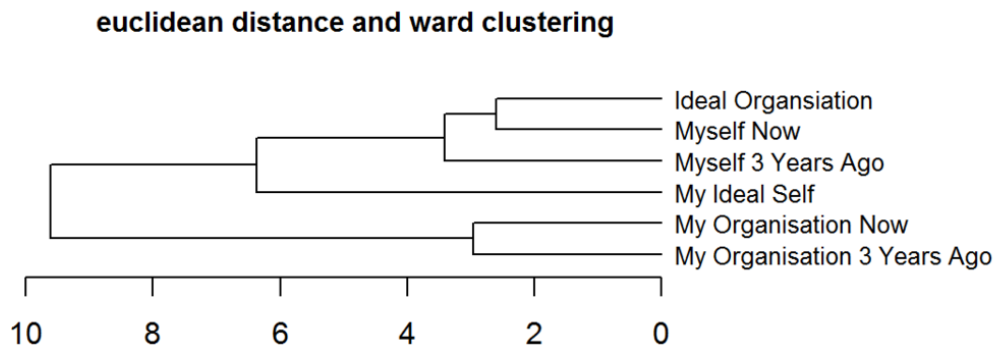
It does not matter how close the black box is on the element to the construct line but if the construct line did not go out as far as the elements, then draw an imaginary continuing line on the construct.

For example, for *Problem Solver*, the order is myself 3 Years Ago, Myself Now, My Organisation Now, Ideal Organisation, My Organisation 3 Years Ago and least significant is Ideal Self. Similarly for the second significant construct, *Comfortable with Ambiguity*

the angle between the first and second constructs is small indicating construct similarity and the perpendicular lines moving down the element would also be similar. Looking at the third construct *Problem Finder* in relation to the first construct *Problem Solver*, these are also related but in opposing ways, so this person tends to problem solve not problem find. A lot of the remaining constructs are similar to one another and move with one another which aligns very well with the first principal component and their arrows are shorter in length indicating less importance.

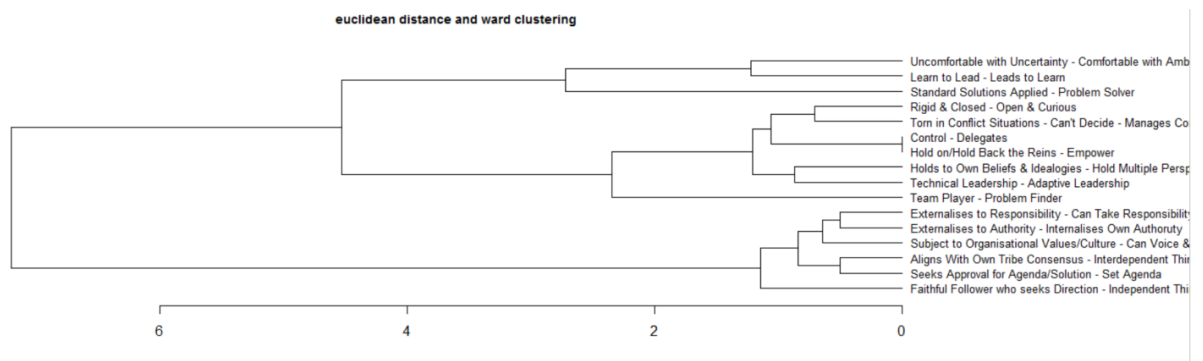
Clustering Analysis for Elements Only for Subject 1

The clustering chosen uses Euclidean Distance and Ward Criterion.



From this cluster analysis for the elements, the columns/elements for Ideal Organisation and Myself Now are most similar to one another, then these two elements are most similar to Myself 3 Years Ago and then these three elements to My Ideal Self. The remaining two elements are together.

Cluster Analysis for Constructs Only for Subject 1



It is difficult to determine the degree of certainty to which each one group is more significant than another group, rather all that can be said is that there are groups and what these groups are. For the constructs there is one big group with multiple subgroups (1) and 3 smaller groups with less subgroups (2,3,4). The shorter the length on the branch of the cluster the closer the constructs are to one another.

Subject Two Analysis and Results

Looking at the descriptive statistics for the constructs alone informs of single construct statistical values. The mean and median are reported below. The mean values are quite skewed in the higher direction, the overall mean is around 4.00. There are other descriptive statistics, skewness and kurtosis representative of the distribution underlying the data, skewness determines symmetry or lack thereof, it identifies heavily tailed data whereas kurtosis is a measure of data being flat or peaked in relation to a normal distribution. These values on their own don't give us an indication of whether the underlying distribution is normally distributed or not. Running a Kolmogorov-Sinov test on the dataset determines the p-value is extremely small which can either indicate, not normal or heavily two-tailed, looking at the data with this insight would recommend it is not normal and likely log-normal, so the logarithm of the dataset is normally distributed.


```

## #####
## Descriptive statistics for constructs
## #####
##
##
## vars n mean sd median trimmed mad min max
## (1) Independen - Faithful F 1 6 4.25 1.25 5.00 4.25 0.00 2.0 5.0
## (2) Interdepen - Aligns Wit 2 6 3.58 0.80 4.00 3.58 0.00 2.0 4.0
## (3) Set Agenda - Seeks Appr 3 6 3.50 0.84 4.00 3.50 0.00 2.0 4.0
## (4) Problem So - Standard S 4 6 4.00 0.63 4.00 4.00 0.00 3.0 5.0
## (5) Problem Fi - Team Playe 5 6 3.58 0.49 3.75 3.58 0.37 3.0 4.0
## (6) Comfortabl - Uncomforta 6 6 3.83 0.98 4.00 3.83 0.00 2.0 5.0
## (7) Hold Multi - Holds to O 7 6 3.67 0.52 4.00 3.67 0.00 3.0 4.0
## (8) Open & Cur - Rigid & Cl 8 6 4.17 0.98 4.50 4.17 0.74 3.0 5.0
## (9) Can Take R - Externalis 9 6 4.08 0.80 4.00 4.08 1.11 3.0 5.0
## (10) Internalis - Externalis 10 6 3.92 0.74 4.25 3.92 0.37 3.0 4.5
## (11) Manages Co - Torn in Co 11 6 4.50 0.63 4.75 4.50 0.37 3.5 5.0
## (12) Delegates - Control 12 6 4.50 0.84 5.00 4.50 0.00 3.0 5.0
## (13) Empower - Hold on/Ho 13 6 3.83 0.93 4.00 3.83 0.37 2.0 4.5
## (14) Adaptive L - Technical 14 6 4.08 1.16 4.50 4.08 0.74 2.0 5.0
## (15) Can Voice - Subject to 15 6 3.83 0.98 4.25 3.83 0.37 2.0 4.5
## (16) Leads to L - Learn to L 16 6 4.00 0.89 4.00 4.00 1.48 3.0 5.0
##
## range skew kurtosis se
## (1) Independen - Faithful F 3.0 -0.85 -1.17 0.51
## (2) Interdepen - Aligns Wit 2.0 -1.19 -0.41 0.33
## (3) Set Agenda - Seeks Appr 2.0 -0.85 -1.17 0.34
## (4) Problem So - Standard S 2.0 0.00 -0.92 0.26
## (5) Problem Fi - Team Playe 1.0 -0.25 -2.08 0.20
## (6) Comfortabl - Uncomforta 3.0 -0.80 -0.65 0.40
## (7) Hold Multi - Holds to O 1.0 -0.54 -1.96 0.21
## (8) Open & Cur - Rigid & Cl 2.0 -0.25 -2.08 0.40
## (9) Can Take R - Externalis 2.0 0.02 -1.82 0.33
## (10) Internalis - Externalis 1.5 -0.39 -2.00 0.30
## (11) Manages Co - Torn in Co 1.5 -0.49 -1.70 0.26
## (12) Delegates - Control 2.0 -0.85 -1.17 0.34
## (13) Empower - Hold on/Ho 2.5 -1.15 -0.41 0.38
## (14) Adaptive L - Technical 3.0 -0.81 -1.11 0.47
## (15) Can Voice - Subject to 2.5 -0.93 -0.88 0.40
## (16) Leads to L - Learn to L 2.0 0.00 -1.96 0.37

```

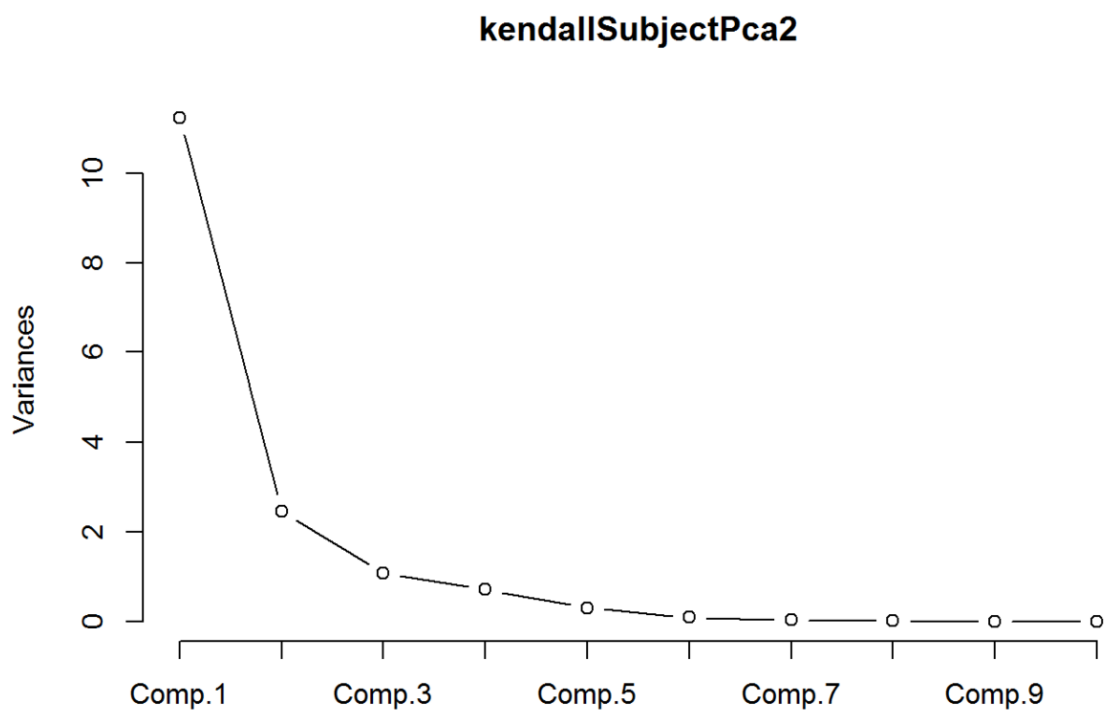
Looking at the statistical values on their own, can only give certain insights. This data is multivariate. Multivariate data happens when values of several random variables on a number of subjects are recorded and this is an ideal example of multivariate, giving the scale within a scale. Multivariate data is ubiquitous by nature. There are a few ways to further analyse multivariate data and for this study both Principal component analysis and hierarchical clustering have been chosen.

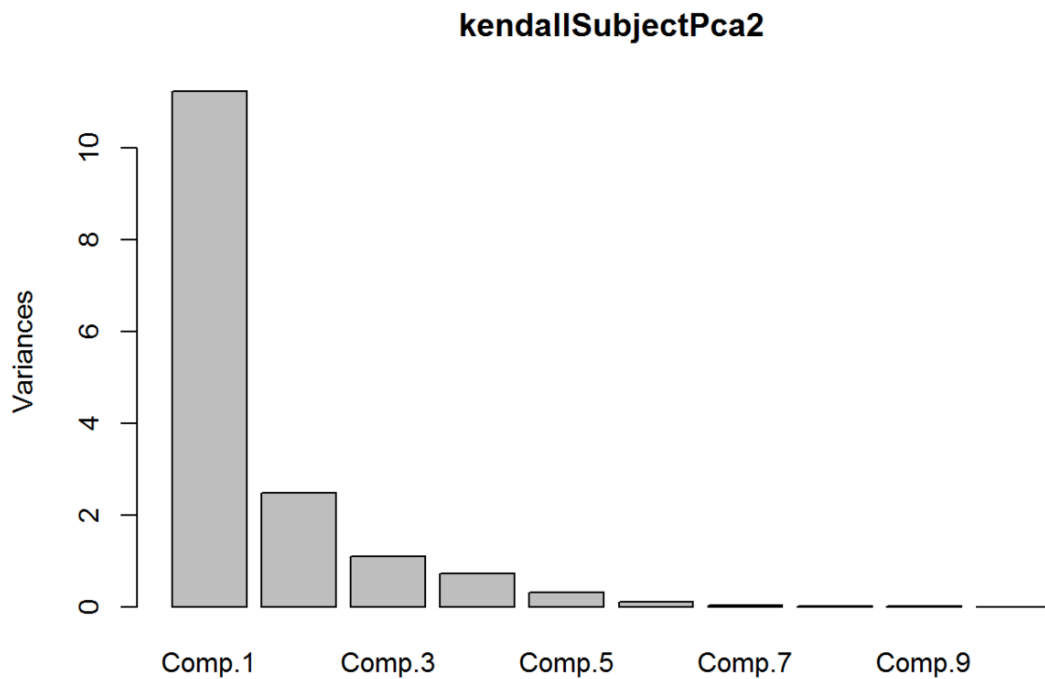
Principal component analysis is a dimension reduction tool, and this dataset has 16 dimensions, whilst trying to keep as much of the variation as possible to not lose granularity. It is a non-destructive test which reframes the data using their eigenvalues and eigenvalues.

The purpose of Principal component analysis is to describe variation in a set of correlated variables and which correlation coefficient to use is determined by whether the assumption of the underlying distribution is normal or not normal (parametric/non-parametric).

Since it has been established it is not normal the only option is Kendall-Tau correlation coefficient. Principal component analysis happens by transforming to a new set variable called the principal components which are linear combinations of the original variables uncorrelated and are ordered so that the first few of them account for most of the variation.

In an ideal situation the result of Principal component analysis would be the creation of a small number of new variables that can be used as surrogates for the originally large number of variables and consequently provide a simpler basis for graphing and summarizing the data.





The next question is how many principal components are statistically important? On the line chart above, looking for the elbow indicates where to cut off and stop viewing that component as significant. The y-axis on both charts are the eigenvalues, they are approximately equal to the standard deviation squared. Looking at the importance of components, only consider the standard deviation above 1. For this subject the first three principal components are above the importance line of standard deviation > 1 accounting for 70.82%, 15.46% and 6.82% respectively.

	Standard Deviation	Eigenvalue	% Of variation accounted for
Principal Component 1	3.53	12.46	70.28%
Principal Component 2	1.57	2.46	15.46%
Principal Component 3	1.04	1.08	6.82%

```

## Importance of components:
##
##          Comp.1    Comp.2    Comp.3    Comp.4
## Standard deviation  3.3533346 1.5732058 1.04527725 0.84612936
## Proportion of Variance 0.7028033 0.1546860 0.06828778 0.04474593
## Cumulative Proportion 0.7028033 0.8574893 0.92577712 0.97052305
##
##          Comp.5    Comp.6    Comp.7    Comp.8
## Standard deviation  0.55732552 0.312863510 0.186390339 0.145805050
## Proportion of Variance 0.01941323 0.006117724 0.002171335 0.001328695
## Cumulative Proportion 0.98993628 0.996054003 0.998225338 0.999554033
##
##          Comp.9    Comp.10 Comp.11 Comp.12 Comp.13
## Standard deviation  0.0844717288 2.586593e-08      0      0      0
## Proportion of Variance 0.0004459671 4.181540e-17      0      0      0
## Cumulative Proportion 1.0000000000 1.000000e+00      1      1      1
##
##          Comp.14 Comp.15 Comp.16
## Standard deviation      0      0      0
## Proportion of Variance      0      0      0
## Cumulative Proportion      1      1      1

```

So, looking at the loadings in the principal component analysis, say for example on the third component mathematically this is a linear combination of the following constructs, and these are labelled in the second equation:

$$PC3 = -0.620x_4 + 0.556x_7 - 0.273x_9 + 0.289x_{13} - 0.273x_{14}$$

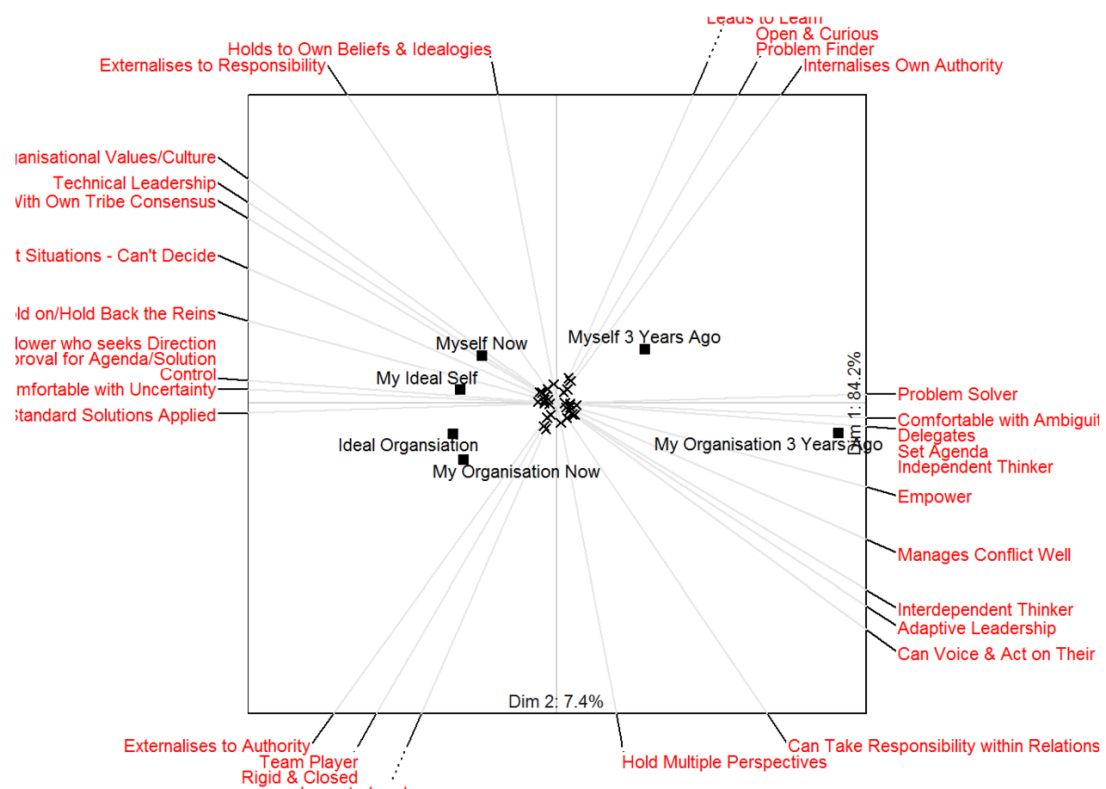
PC3 = - [0.620*(Problem Solver – Standard Solutions Applied)] + [0.556(Holds Multiple Perspectives - Holds to Own Beliefs & Ideologies)] - [0.273*(Can Take Responsibility within Relationships) – [Externalises to Responsibility]] + [0.289*(Empower - Hold on/Hold Back the Reins)] – [0.273*(Can Voice & Act on Their Own Values - Subject to Organisational Values/Culture)]

```

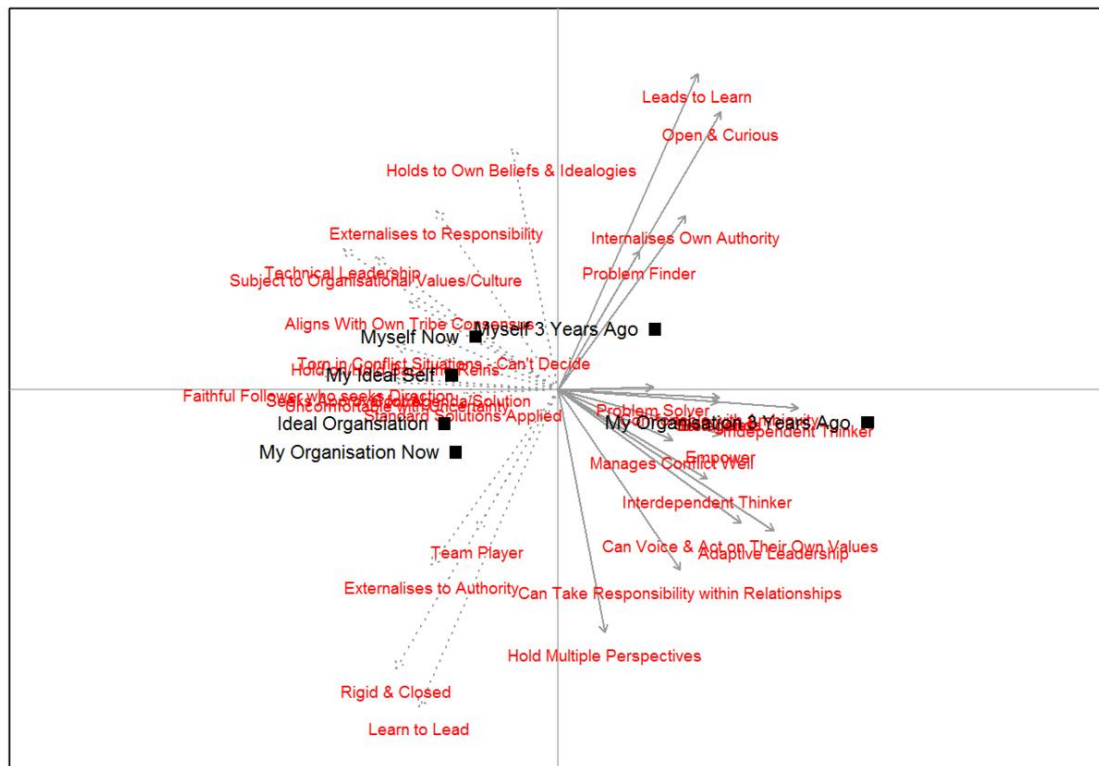
## Loadings:
##
##                               Comp.1 Comp.2 Comp.3 Comp.4 Comp.5 Comp.6 Comp.7
## Independen - Faithful F -0.294                -0.109  0.113  0.186 -0.154
## Interdepen - Aligns Wit -0.294                -0.109  0.113  0.186 -0.154
## Set Agenda - Seeks Appr -0.294                -0.109  0.113  0.186 -0.154
## Problem So - Standard S -0.222                0.620        0.151 -0.293 -0.330
## Problem Fi - Team Playe -0.259  0.227                0.354 -0.268
## Comfortabl - Uncomforta -0.197  0.277                -0.656 -0.405 -0.106  0.434
## Hold Multi - Holds to O -0.117 -0.402  0.556                -0.545  0.399
## Open & Cur - Rigid & Cl -0.259  0.227                0.354 -0.268
## Can Take R - Externalis -0.235 -0.338 -0.273                -0.101 -0.148 -0.210
## Internalis - Externalis -0.259  0.227                0.354 -0.268
## Manages Co - Torn in Co -0.259 -0.280                0.140  0.240 -0.194  0.479
## Delegates - Control     -0.294                -0.109  0.113  0.186 -0.154
## Empower - Hold on/Ho    -0.224  0.327  0.289 -0.282  0.165 -0.332 -0.127
## Adaptive L - Technical  -0.235 -0.338 -0.273                -0.101 -0.148 -0.210
## Can Voice - Subject to  -0.259 -0.280                0.140  0.240 -0.194  0.479
## Leads to L - Learn to L -0.241  0.330                0.295  0.590  0.206
##
##                               Comp.8 Comp.9 Comp.10 Comp.11 Comp.12 Comp.13
## Independen - Faithful F -0.256                0.653                -0.569
## Interdepen - Aligns Wit -0.256                -0.545                -0.186
## Set Agenda - Seeks Appr -0.256                0.261  0.122                0.739
## Problem So - Standard S  0.234 -0.541
## Problem Fi - Team Playe                0.213 -0.259  0.228  0.245
## Comfortabl - Uncomforta                -0.281
## Hold Multi - Holds to O                0.231
## Open & Cur - Rigid & Cl                0.451 -0.660 -0.102
## Can Take R - Externalis  0.398  0.111
## Internalis - Externalis                -0.125 -0.192  0.431 -0.143
## Manages Co - Torn in Co                0.573  0.395
## Delegates - Control     -0.256                -0.369 -0.141
## Empower - Hold on/Ho                0.722
## Adaptive L - Technical  0.398  0.111
## Can Voice - Subject to                -0.573 -0.395
## Leads to L - Learn to L  0.582
##
##                               Comp.14 Comp.15 Comp.16
## Independen - Faithful F
## Interdepen - Aligns Wit -0.225                0.602
## Set Agenda - Seeks Appr  0.176 -0.277
## Problem So - Standard S
## Problem Fi - Team Playe -0.284  0.561  0.215
## Comfortabl - Uncomforta
## Hold Multi - Holds to O
## Open & Cur - Rigid & Cl
## Can Take R - Externalis -0.611 -0.278 -0.203
## Internalis - Externalis  0.297 -0.553 -0.117
## Manages Co - Torn in Co                0.122
## Delegates - Control                0.337 -0.690
## Empower - Hold on/Ho
## Adaptive L - Technical  0.611  0.278  0.203
## Can Voice - Subject to                -0.122
## Leads to L - Learn to L

```

Looking at the loadings of the first three principal components, the first one has no missing values as missing values only happen below 1.0, so in this case everyone plays a part or contributes to the 70% variation. As there are no high values, only assume absolute values above 0.5 demonstrate significance for the particular principal component. The spread indicates and the averaging values of ~ 0.25 indicate a large spread and no obvious indications. The second principal component shows the first four constructs are not significant, the spread is getting tighter. The third principal component has two very significant constructs, namely the 4th and the 7th construct.



2D Biplot for Subject 2 – easiest to read



2D Biplot for Subject 2

The most significantly important constructs have the longest arrows. These are: Leads to Learn for both Myself 3 Years Ago and My Organisation 3 Years ago. Open & Curious for both Myself 3 Years Ago and My Organisation 3 Years Ago. Hold Multiple Perspectives for both My Organisation 3 Years Ago and My Organisation Now.

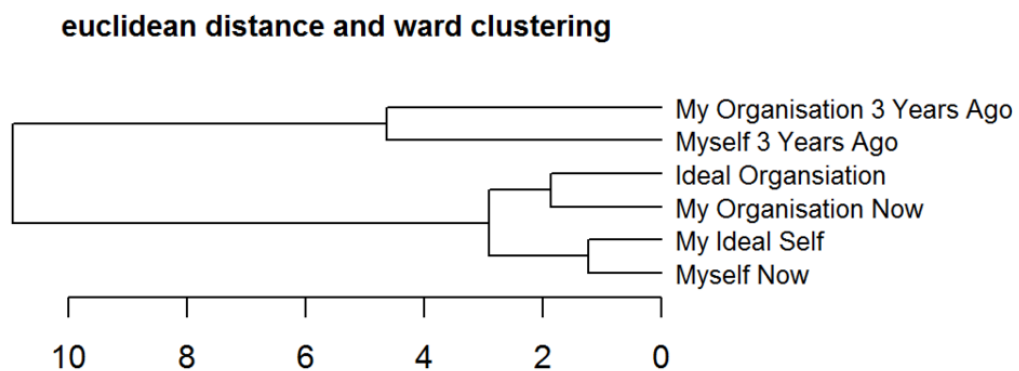
Reading the biplot looking at the most significant construct is done as follows:

Leads to Learn and Open and Curious, draw perpendicular lines to that construct. As you hit each element as you move away from the arrow and the first element is the most significant and the last is the least. It does not matter how close the black box is on the element to the construct line, if the construct line did not go out as far as the elements, then draw an imaginary continuing line on the construct. So here for example both Leads to Learn and Open and Curious, the order is: Myself 3 Years Ago, My Organisation 3 Years Ago, Myself Now, My Ideal Self and Ideal Organisation with the least significant element for that construct is My Organisation Now.

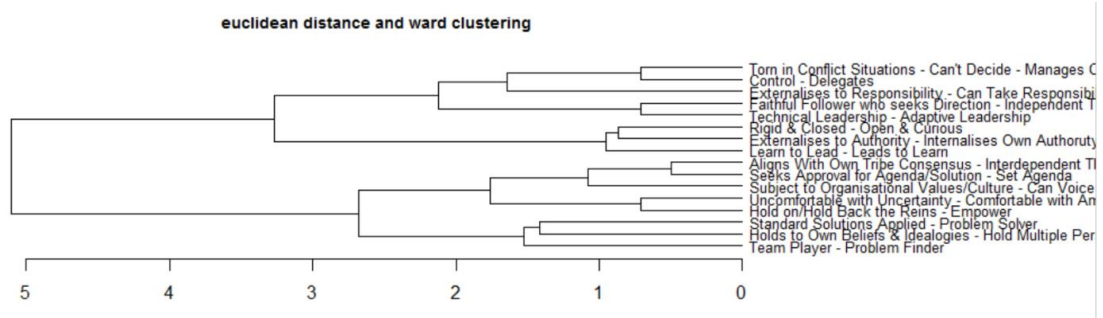
For Hold Multiple Perspectives the order is My Organisation 3 Years Ago, My Organisation Now, Ideal Organisation, My Ideal Self, Myself 3 Years Ago and the least significant element for that construct is Myself Now. The construct Hold Multiple Perspectives in relation to the previous two constructs namely Leads to Learn and Open and Curious are related to one another but in opposing ways. So, this person tends to Lead to Learn and is Open and Curious but does not hold Multiple Perspectives.

A lot of the remaining constructs are similar to one another and move with one another which aligns very well with the first principal component.

Cluster Analysis for Elements Only for Subject 2



Cluster Analysis for Constructs Only for Subject 2



It is difficult to determine the degree of certainty to which each one group is more significant than another group, all that can be said is that there are groups and what these groups are. The elements have one group with a number of subgroups. For the constructs there are groups with additional subgroups (1,2,3,4). Group 1 and 3 are similar in size and five constructs each, whereas group 2 and 4 only have three constructs each. The shorter the length on the branch of the cluster the closer the constructs are to one another in similarity.

Subject Three Analysis and Results

Looking at the descriptive statistics for the constructs alone informs of single construct statistical values. It is difficult to make any statistical inferences here as the outliers are the missing values. There are other descriptive statistics, skewness and kurtosis representative of the distribution underlying the data. Skewness determines symmetry or lack thereof and it identifies heavily tailed data whereas kurtosis is a measure of data being flat or peaked in relation to a normal distribution. These values on their own don't give us an indication of whether the underlying distribution is normally distributed or not. Running a Kolmogorov-Sinov test on the dataset determines the p-value is extremely small which can either indicate, not normal or heavily two-tailed, looking at the data with this insight would recommend it is not normal and likely log-normal, so the logarithm of the dataset is normally distributed.

```

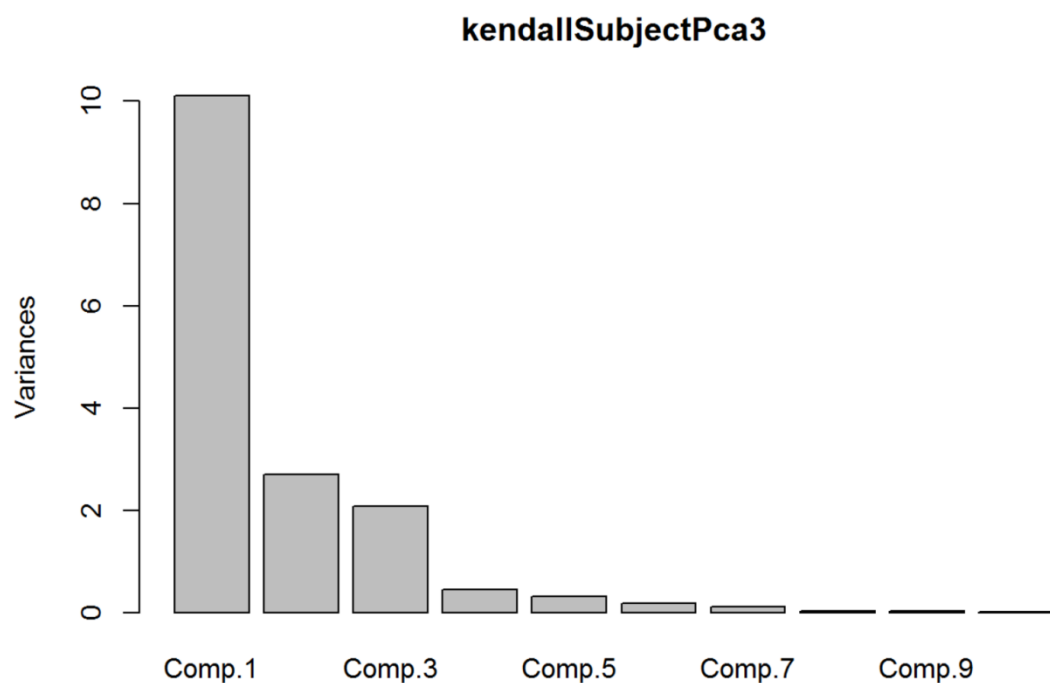
## #####
## Descriptive statistics for constructs
## #####
##
##              vars n mean   sd median trimmed  mad min max
## (1) Independen - Faithful F      1 6 3.25 1.08   3.50   3.25 1.11 2.0 4.5
## (2) Interdepen - Aligns Wit      2 6 4.42 0.49   4.25   4.42 0.37 4.0 5.0
## (3) Set Agenda - Seeks Appr      3 6 2.92 0.20   3.00   2.92 0.00 2.5 3.0
## (4) Problem So - Standard S      4 6 3.50 1.34   3.75   3.50 1.48 2.0 5.0
## (5) Problem Fi - Team Playe      5 6 3.67 1.51   4.00   3.67 1.48 2.0 5.0
## (6) Comfortabl - Uncomforta      6 6 3.75 1.41   4.25   3.75 1.11 2.0 5.0
## (7) Hold Multi - Holds to O      7 6 3.08 0.92   3.25   3.08 1.11 2.0 4.0
## (8) Open & Cur - Rigid & Cl      8 6 3.08 0.20   3.00   3.08 0.00 3.0 3.5
## (9) Can Take R - Externalis      9 6 4.00 1.55   5.00   4.00 0.00 2.0 5.0
## (10) Internalis - Externalis     10 6 3.58 2.01   4.75   3.58 0.37 1.0 5.0
## (11) Manages Co - Torn in Co     11 6 4.00 0.89   4.00   4.00 1.48 3.0 5.0
## (12) Delegates - Control         12 6 2.75 0.61   3.00   2.75 0.37 2.0 3.5
## (13) Empower - Hold on/Ho       13 6 3.50 0.45   3.50   3.50 0.74 3.0 4.0
## (14) Adaptive L - Technical      14 6 3.42 1.56   4.00   3.42 1.11 1.5 5.0
## (15) Can Voice - Subject to      15 6 4.42 0.49   4.50   4.42 0.00 3.5 5.0
## (16) Leads to L - Learn to L     16 6 3.08 1.24   2.75   3.08 1.11 2.0 4.5
##
##              range skew kurtosis   se
## (1) Independen - Faithful F      2.5 -0.15   -2.04 0.44
## (2) Interdepen - Aligns Wit      1.0  0.25   -2.08 0.20
## (3) Set Agenda - Seeks Appr      0.5 -1.36   -0.08 0.08
## (4) Problem So - Standard S      3.0 -0.10   -2.11 0.55
## (5) Problem Fi - Team Playe      3.0 -0.12   -2.19 0.61
## (6) Comfortabl - Uncomforta      3.0 -0.38   -1.98 0.57
## (7) Hold Multi - Holds to O      2.0 -0.20   -2.01 0.37
## (8) Open & Cur - Rigid & Cl      0.5  1.36   -0.08 0.08
## (9) Can Take R - Externalis      3.0 -0.54   -1.96 0.63
## (10) Internalis - Externalis      4.0 -0.52   -1.96 0.82
## (11) Manages Co - Torn in Co      2.0  0.00   -1.96 0.37
## (12) Delegates - Control          1.5 -0.27   -1.86 0.25
## (13) Empower - Hold on/Ho         1.0  0.00   -1.96 0.18
## (14) Adaptive L - Technical        3.5 -0.33   -1.99 0.64
## (15) Can Voice - Subject to        1.5 -0.80   -0.65 0.20
## (16) Leads to L - Learn to L       2.5  0.17   -2.14 0.51

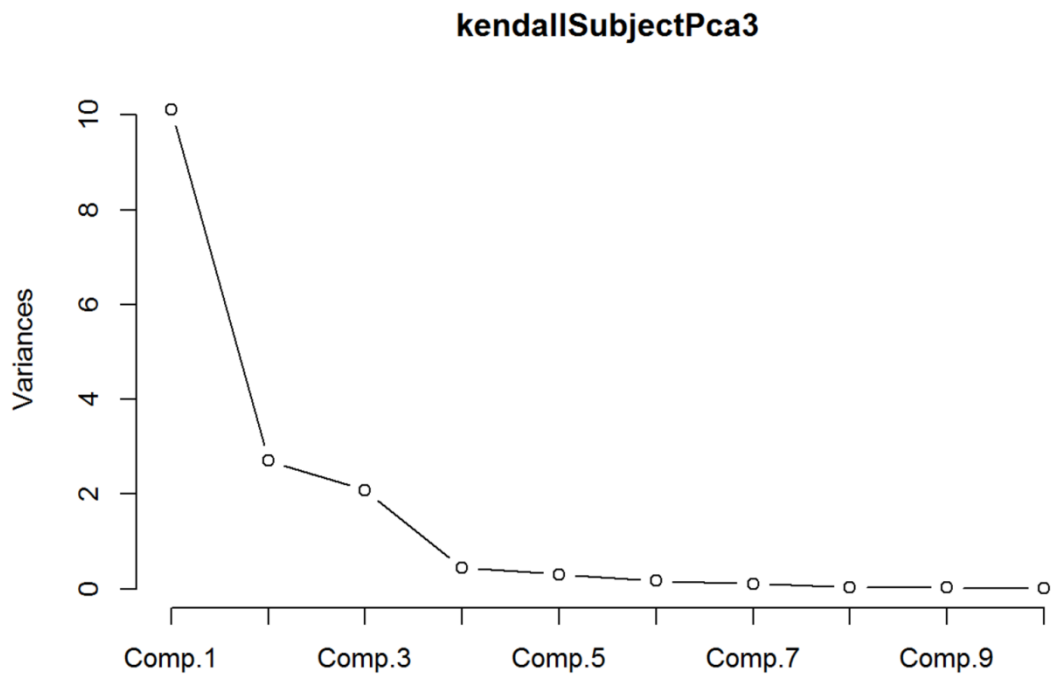
```

Looking at the statistical values on their own, can only give certain insights. This data is multivariate. Multivariate data happens when values of several random variables on a number of subjects are recorded, this is an ideal example of multivariate, giving the scale within a scale. Multivariate data is ubiquitous by nature.

There are a few ways to further analyse multivariate data and for this study both principal component analysis and hierarchical clustering have been chosen. Principal component analysis is a dimension reduction tool. This dataset has 16 dimensions keeping as much of the variation as possible to not lose granularity. It is a non-destructive test it reframes the

data using their eigenvalues and eigenvalues. The purpose of principal component analysis is to describe variation in a set of correlated variables, which correlation coefficient to use is determined by whether the assumption of the underlying distribution is normal or not normal(parametric/non-parametric), since it has been established it is not normal the only option is Kendall-Tau correlation coefficient. Principal component analysis happens by transforming to a new set variable called the principal components, these are linear combinations of the original variables which are uncorrelated and are ordered so that the first few of them account for most of the variation. In an ideal situation the result of principal component analysis would be the creation of a small number of new variables that can be uses as surrogates for the originally large number of variables and consequently provide a simpler basis for graphing a summarizing the data.





Graphics of Principal Components for Subject 3.

	Standard Deviation	Eigenvalue	% Of variation accounted for
Principal Component 1	3.17	10.04	63.17%
Principal Component 2	1.64	2.68	16.91%
Principal Component 3	1.44	2.07	13.04%

The next question is how many principal components are statistically important? On the line chart above, looking for the elbow indicates where to cut off and stop viewing that component as significant. The y-axis on both charts are the eigenvalues, they are approximately equal to the standard deviation squared. Looking at the importance of components, only consider for a standard deviation above 1. For this subject the first three principal components are above the importance line of standard deviation > 1 accounting for 63.17%, 16.91% and 13.04% respectively.

```

## Importance of components:
##               Comp.1   Comp.2   Comp.3   Comp.4   Comp.5
## Standard deviation    3.1792454 1.6452100 1.4448018 0.6706010 0.55268290
## Proportion of Variance 0.6317251 0.1691698 0.1304658 0.0281066 0.01909115
## Cumulative Proportion 0.6317251 0.8008948 0.9313606 0.9594672 0.97855836
##               Comp.6   Comp.7   Comp.8   Comp.9
## Standard deviation    0.41571272 0.331753048 0.175863050 0.145428549
## Proportion of Variance 0.01080107 0.006878755 0.001932988 0.001321841
## Cumulative Proportion 0.98935943 0.996238181 0.998171170 0.999493011
##               Comp.10   Comp.11   Comp.12   Comp.13
## Standard deviation    0.090065668 1.897667e-08 1.262359e-08 1.161518e-08
## Proportion of Variance 0.000506989 2.250712e-17 9.959690e-18 8.432026e-18
## Cumulative Proportion 1.000000000 1.000000e+00 1.000000e+00 1.000000e+00
##               Comp.14 Comp.15 Comp.16
## Standard deviation    6.895512e-09      0      0
## Proportion of Variance 2.971756e-18      0      0
## Cumulative Proportion 1.000000e+00      1      1

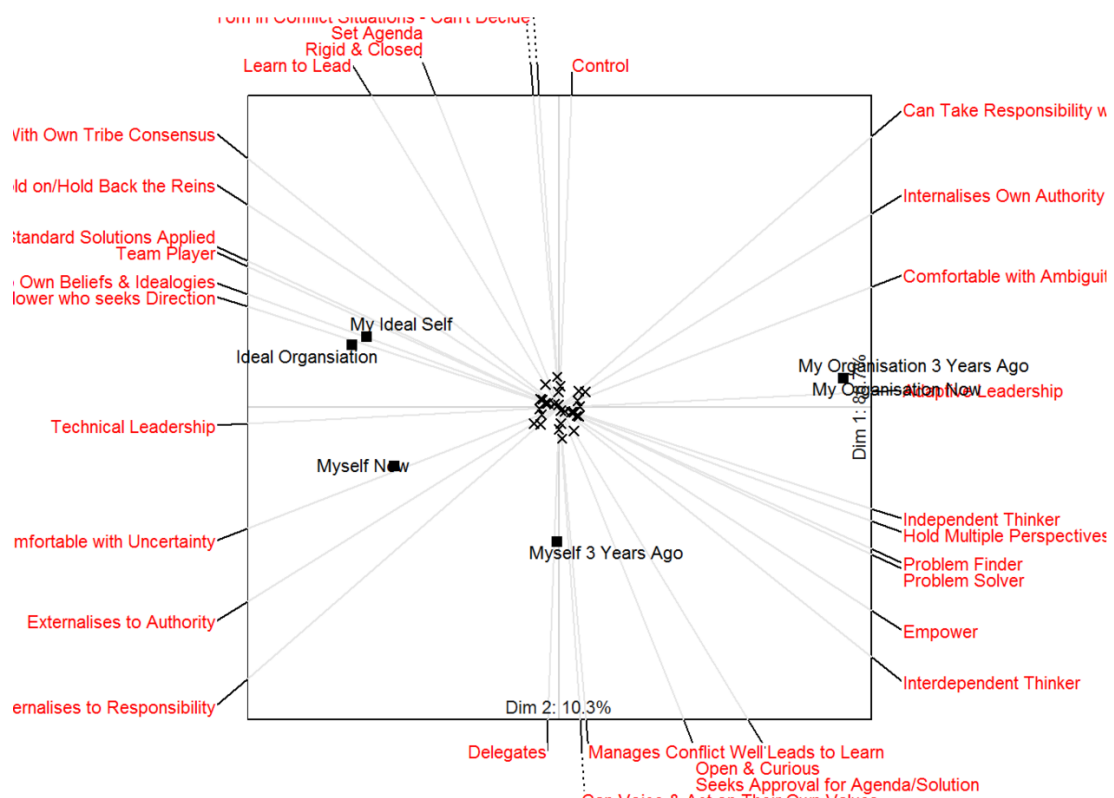
```

```

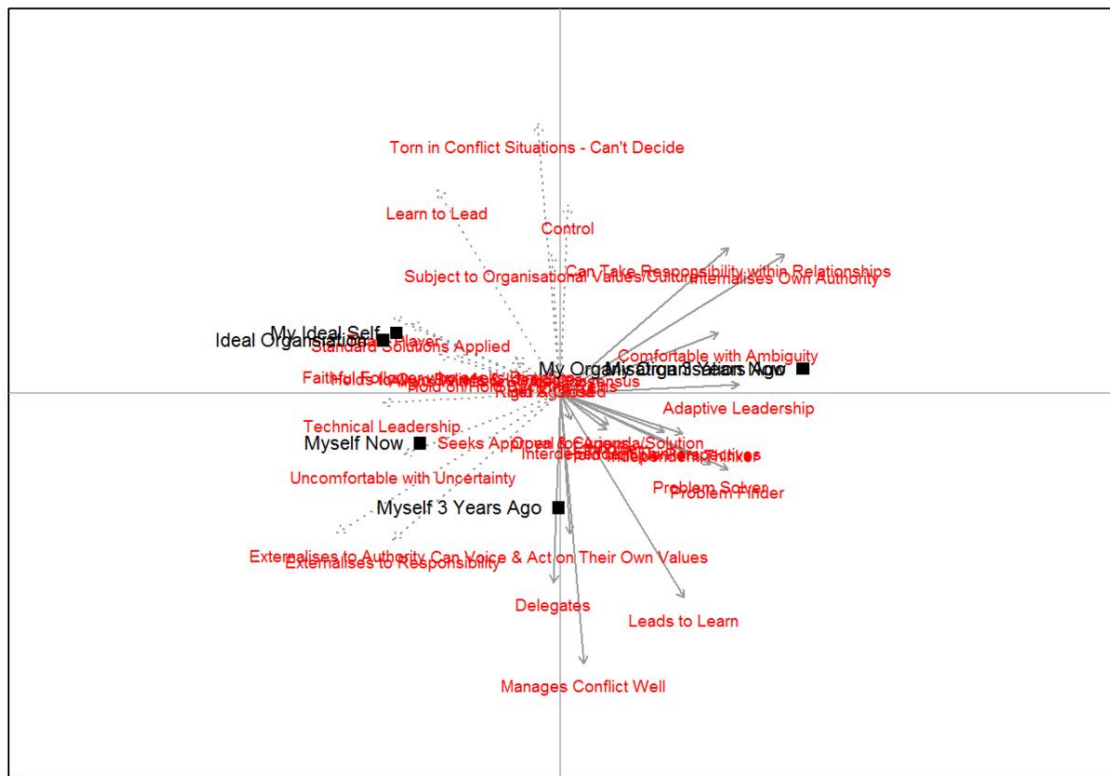
## Loadings:
##
##                               Comp.1 Comp.2 Comp.3 Comp.4 Comp.5 Comp.6 Comp.7
## Independen - Faithful F -0.300      0.120 0.158 -0.238 0.222 0.192
## Interdepen - Aligns Wit -0.239      -0.365 -0.546      -0.165
## Set Agenda - Seeks Appr 0.182 -0.132 -0.520 0.329      0.111 0.131
## Problem So - Standard S -0.300      0.120 0.158 -0.238 0.222 0.192
## Problem Fi - Team Playe -0.303 -0.114 -0.111      0.229 -0.101
## Comfortabl - Uncomforta -0.257 -0.124 -0.323 -0.314 0.140 0.199 -0.379
## Hold Multi - Holds to O -0.303      0.305      -0.183 -0.315
## Open & Cur - Rigid & Cl -0.182 0.132 0.520 -0.329      -0.111 -0.131
## Can Take R - Externalis -0.257 -0.246      0.631 -0.134 0.537
## Internalis - Externalis -0.303 -0.114 -0.111      0.229 -0.101
## Manages Co - Torn in Co -0.116 0.535 0.101      0.326 0.255 0.252
## Delegates - Control      0.572 -0.113 0.233 0.192 0.314 -0.146
## Empower - Hold on/Ho -0.293      0.352 0.341 -0.247 -0.405
## Adaptive L - Technical -0.300      0.120 0.158 -0.238 0.222 0.192
## Can Voice - Subject to -0.118 0.450 -0.354      -0.337 -0.207 0.130
## Leads to L - Learn to L -0.290 0.159      0.128 -0.182 -0.580 0.167
##
##                               Comp.8 Comp.9 Comp.10 Comp.11 Comp.12 Comp.13
## Independen - Faithful F      0.738
## Interdepen - Aligns Wit 0.137 0.348 0.287      0.146 -0.138
## Set Agenda - Seeks Appr -0.144 0.131      0.381 0.568
## Problem So - Standard S      -0.502 0.426 -0.248
## Problem Fi - Team Playe      -0.386 -0.332
## Comfortabl - Uncomforta -0.129 -0.175      0.156 0.299
## Hold Multi - Holds to O -0.408 -0.456      0.159 -0.150
## Open & Cur - Rigid & Cl 0.144 -0.131      0.381 0.568
## Can Take R - Externalis 0.206 -0.335 -0.101
## Internalis - Externalis      -0.510 0.473
## Manages Co - Torn in Co -0.610 0.248 -0.115
## Delegates - Control 0.479 -0.177 0.432
## Empower - Hold on/Ho 0.197 0.564 -0.301
## Adaptive L - Technical
## Can Voice - Subject to 0.177 -0.224 -0.635
## Leads to L - Learn to L -0.167      0.441      -0.146 0.138
##
##                               Comp.14 Comp.15 Comp.16
## Independen - Faithful F      -0.404
## Interdepen - Aligns Wit 0.149      0.420
## Set Agenda - Seeks Appr -0.105      0.115
## Problem So - Standard S 0.386 -0.192 -0.161
## Problem Fi - Team Playe -0.543 -0.430 0.259
## Comfortabl - Uncomforta -0.160      -0.558
## Hold Multi - Holds to O 0.162      0.456
## Open & Cur - Rigid & Cl -0.105      0.115
## Can Take R - Externalis
## Internalis - Externalis 0.539 0.155
## Manages Co - Torn in Co
## Delegates - Control
## Empower - Hold on/Ho
## Adaptive L - Technical -0.383 0.745
## Can Voice - Subject to
## Leads to L - Learn to L -0.149      -0.420

```

Looking at the loadings of the first three principal components, the first one has one missing value, but this is a compromised data point, missing values only happen below 1.0, so in this case all bar one construct plays a part or contributes to the 63% variation, there are no high values, let's say only assume absolute values above 0.5 demonstrate significance for the particular principal component. The spread indicates and the averaging values of ~ 0.25 indicate a large spread and no obvious indications. The second principal component shows the first significant construct namely Manages Conflict Well - Torn in Conflict Situations - Can't Decide with a loading of 0.535. The third principal component shows the second significant construct – Set Agenda – Seeks Approval for Agenda/Solution with a loading 0.520.



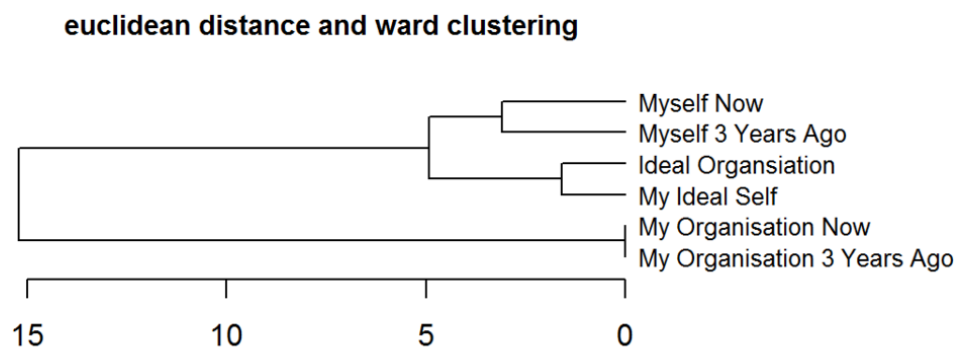
2D Biplot for Subject 3 easiest to read.



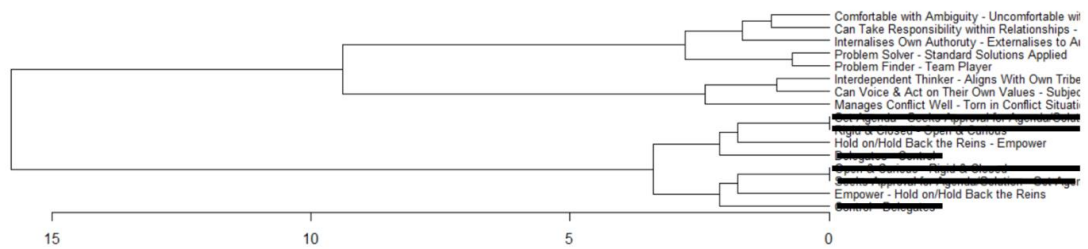
2D Biplot for Subject 3

This biplot is made with latent data in that it is not real and since the Principal Components are a linear combination of each construct, since the latent data showed as significant, this is a highly compromised dataset and graphical representation of such, one combination affects all the others, this is a bigger picture view of the data and the missing/latent have made viewing untenable

Cluster Analysis for Elements Only for Subject 3



Cluster Analysis for Constructs Only for Subject 3



It is difficult to determine the degree of certainty to which each one group is more significant than another group, all that can be said is that there are groups and what these groups are. The elements have two groups with a number of subgroups within each group and the first group (1) is larger and has 4 of the elements.

For the constructs there are two groups with additional subgroups (1,2), the first group has five of the constructs and the second group has 3 of the constructs, both of these groups have subgroups. The shorter the length on the branch of the cluster the closer the constructs are to one another in similarity.

Subject Four Analysis and Results

Looking at the descriptive statistics for the constructs alone informs of single construct statistical values. Construct 12 – Delegates - Control has the lowest mean and median, the highest value is for Construct 3 – Set Agenda – Seeks Approval for Agenda/Solution. There are other descriptive statistics, skewness and kurtosis is a representative of the distribution underlying the data, skewness determines symmetry or lack thereof, it identifies heavily tailed data whereas kurtosis is a measure of data being flat or peaked in relation to a normal distribution. These values on their own don't give us an indication of whether the underlying distribution is normally distributed or not. Running a Kolgomorov-Sinov test on the dataset determines the p-value is extremely small which can either indicate, not normal or heavily two-tailed, looking at the data with this insight would recommend it is not normal and likely log-normal, so the logarithm of the dataset is normally distributed.

```

## #####
## Descriptive statistics for constructs
## #####
##
##
##          vars n mean    sd median trimmed  mad min max
## (1) Independen - Faithful F      1 6 4.00 1.10     4.0    4.00 0.74   2   5
## (2) Interdepen - Aligns Wit     2 6 2.83 1.47     2.5    2.83 1.48   1   5
## (3) Set Agenda - Seeks Appr     3 6 4.33 1.03     5.0    4.33 0.00   3   5
## (4) Problem So - Standard S      4 6 3.17 0.75     3.0    3.17 0.74   2   4
## (5) Problem Fi - Team Playe     5 6 3.83 1.33     4.0    3.83 1.48   2   5
## (6) Comfortabl - Uncomforta     6 6 2.33 1.75     1.5    2.33 0.74   1   5
## (7) Hold Multi - Holds to O     7 6 3.67 0.52     4.0    3.67 0.00   3   4
## (8) Open & Cur - Rigid & Cl     8 6 3.83 0.75     4.0    3.83 0.74   3   5
## (9) Can Take R - Externalis     9 6 3.83 1.47     4.5    3.83 0.74   2   5
## (10) Internalis - Externalis    10 6 4.17 0.75     4.0    4.17 0.74   3   5
## (11) Manages Co - Torn in Co   11 6 3.33 1.51     3.0    3.33 1.48   1   5
## (12) Delegates - Control       12 6 1.83 0.98     1.5    1.83 0.74   1   3
## (13) Empower - Hold on/Ho     13 6 3.17 1.17     3.5    3.17 0.74   1   4
## (14) Adaptive L - Technical    14 6 2.50 1.38     2.5    2.50 2.22   1   4
## (15) Can Voice - Subject to    15 6 3.83 1.33     4.0    3.83 1.48   2   5
## (16) Leads to L - Learn to L   16 6 3.33 1.63     3.5    3.33 2.22   1   5
##
##          range skew kurtosis  se
## (1) Independen - Faithful F      3 -0.76   -0.92 0.45
## (2) Interdepen - Aligns Wit      4  0.23   -1.72 0.60
## (3) Set Agenda - Seeks Appr      2 -0.54   -1.96 0.42
## (4) Problem So - Standard S      2 -0.17   -1.54 0.31
## (5) Problem Fi - Team Playe      3 -0.18   -2.05 0.54
## (6) Comfortabl - Uncomforta      4  0.51   -1.80 0.71
## (7) Hold Multi - Holds to O      1 -0.54   -1.96 0.21
## (8) Open & Cur - Rigid & Cl      2  0.17   -1.54 0.31
## (9) Can Take R - Externalis      3 -0.39   -2.00 0.60
## (10) Internalis - Externalis     2 -0.17   -1.54 0.31
## (11) Manages Co - Torn in Co     4 -0.17   -1.54 0.61
## (12) Delegates - Control        2  0.25   -2.08 0.40
## (13) Empower - Hold on/Ho       3 -0.88   -0.90 0.48
## (14) Adaptive L - Technical      3  0.00   -2.06 0.56
## (15) Can Voice - Subject to      3 -0.18   -2.05 0.54
## (16) Leads to L - Learn to L     4 -0.21   -1.86 0.67

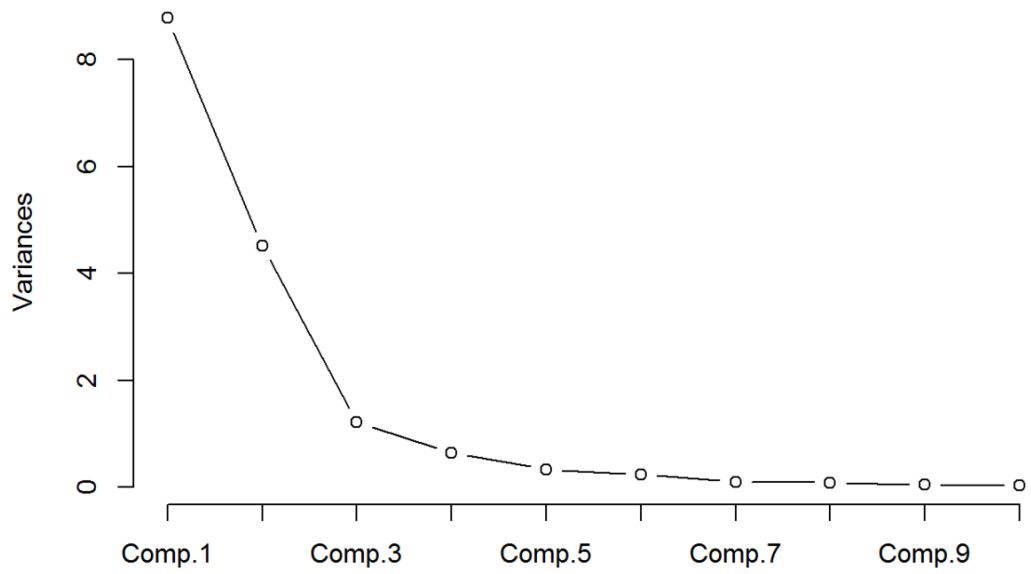
```

Looking at the statistical values on their own, can only give certain insights. This data is multivariate. Multivariate data happens when values of several random variables on a number of subjects are recorded, this is an ideal example of multivariate, giving the scale within a scale.

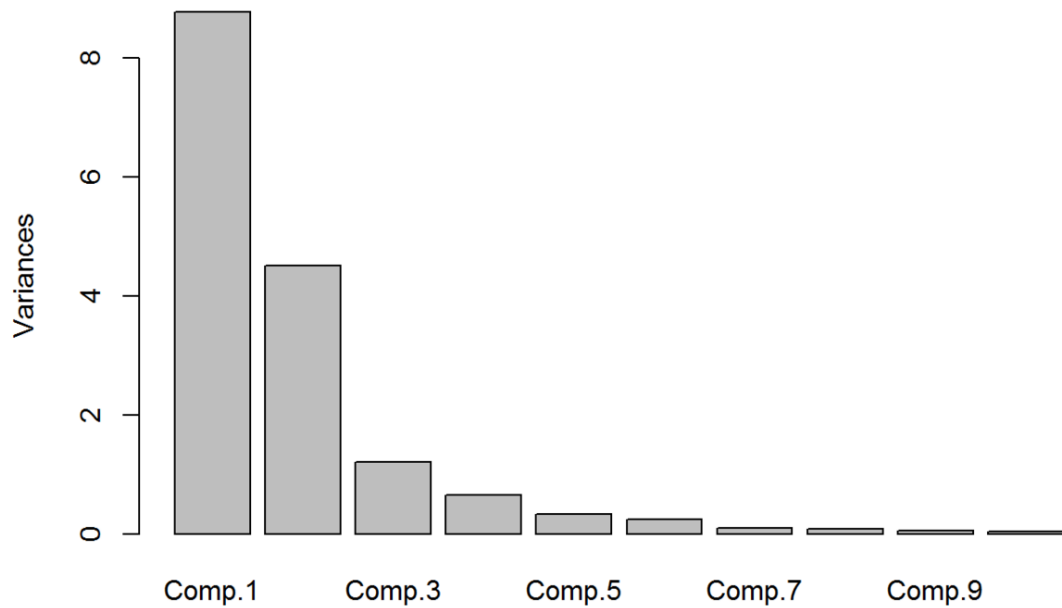
Multivariate data is ubiquitous by nature. Most multivariate data can be represented in rectangular format and the rectangular is a really good indication of multivariate. There are a few ways to further analyse multivariate data and for this study both principal component analysis and hierarchical clustering have been chosen. Principal component analysis is a dimension reduction tool, this dataset has 16 dimensions, whilst trying to keep as much of the variation as possible to not lose granularity. It is a non-destructive test it reframes the data using their eigenvalues and eigenvalues.

The purpose of principal component analysis is to describe variation in a set of correlated variables, which correlation coefficient to use is determined by whether the assumption of the underlying distribution is normal or not normal(parametric/non-parametric), since it has been established it is not normal the only option is Kendall-Tau correlation coefficient. Principal component analysis happens by transforming to a new set variable called the principal components, these are linear combinations of the original variables which are uncorrelated and are ordered so that the first few of them account for most of the variation. In an ideal situation the result of principal component analysis would be the creation of a small number of new variables that can be uses as surrogates for the originally large number of variables and consequently provide a simpler basis for graphing a summarizing the data.

kendallSubjectPca4



kendallSubjectPca4



The next question is how many principal components are statistically important? On the line chart above, looking for the elbow indicates where to cut off and stop viewing that component as significant. The y-axis on both charts are the eigenvalues, they are approximately equal to the standard deviation squared. Looking at the importance of components, only consider the standard deviation above 1. For this subject only the first

three principal components are above the importance line of standard deviation >1 accounting for 54.83%, 28.19% and 7.57% of the variation respectively.

	Standard Deviation	Eigenvalue	% Of variation accounted for
Principal Component 1	2.96	8.76	54.83%
Principal Component 2	2.12	4.49	28.19%
Principal Component 3	1.10	1.21	7.57%

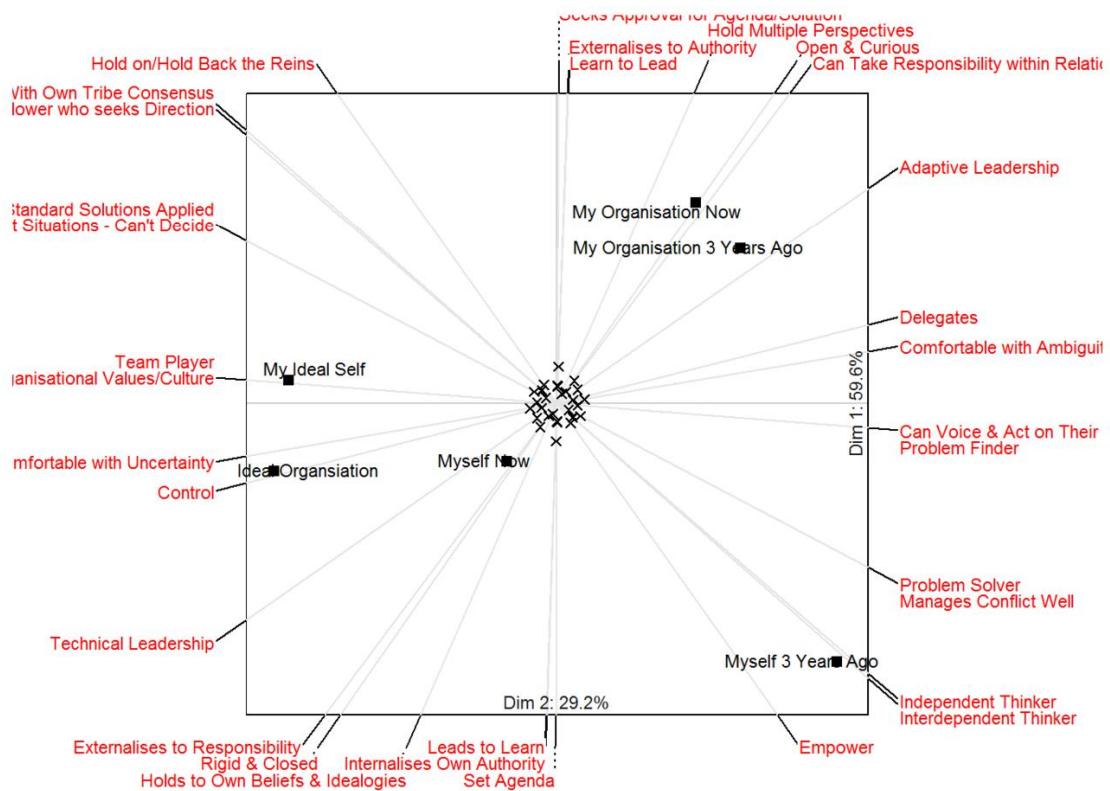
```
## Importance of components:
##               Comp.1   Comp.2   Comp.3   Comp.4   Comp.5
## Standard deviation  2.962143  2.1240387  1.10068011  0.80457928  0.58137041
## Proportion of Variance 0.548393  0.2819713  0.07571854  0.04045924  0.02112447
## Cumulative Proportion 0.548393  0.8303643  0.90608285  0.94654209  0.96766656
##               Comp.6   Comp.7   Comp.8   Comp.9
## Standard deviation  0.48597002  0.322686453  0.294340900  0.224110118
## Proportion of Variance 0.01476043  0.006507909  0.005414785  0.003139084
## Cumulative Proportion 0.98242699  0.988934899  0.994349685  0.997488769
##               Comp.10   Comp.11   Comp.12   Comp.13
## Standard deviation  0.178263871  0.0916607539  4.437529e-09  4.048342e-09
## Proportion of Variance 0.001986125  0.0005251059  1.230729e-18  1.024317e-18
## Cumulative Proportion 0.999474894  1.0000000000  1.000000e+00  1.000000e+00
##               Comp.14 Comp.15 Comp.16
## Standard deviation      0      0      0
## Proportion of Variance      0      0      0
## Cumulative Proportion      1      1      1
```

Since only the first three principal components are significant, we will look at the loadings on these linear combinations. The first principal there has three blank values which means the value of each is below 1.0, this construct is Set Agenda – Seeks Approval for Agenda Solution, internalises – Externalises & Leads to Learn – Learn to Lead. The remaining spread on the first principal component is spread averaging ~0.33. The third principal component has the first significant construct namely Set Agenda – Seeks Approval for

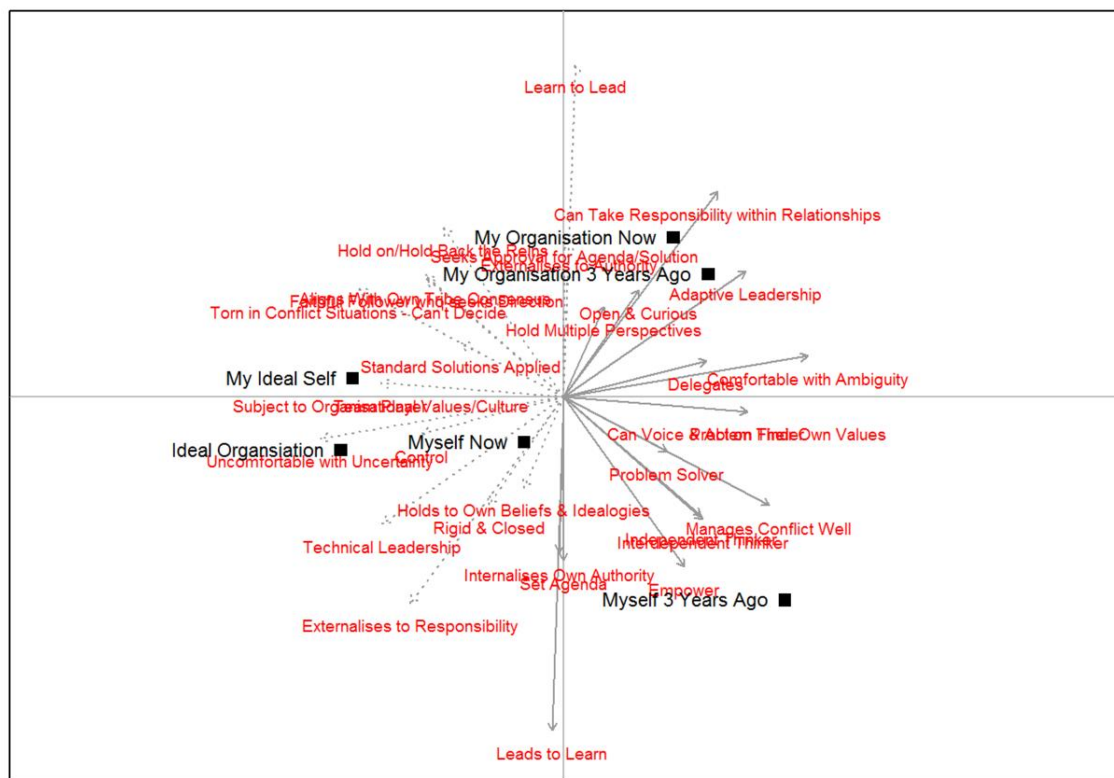
Agenda/Solution with a loading of 0.589. Significance is viewed as the absolute value on the loading above 0.5.

```
## Loadings:
##
##                               Comp.1 Comp.2 Comp.3 Comp.4 Comp.5 Comp.6 Comp.7
## Independen - Faithful F -0.297 -0.191  0.110 -0.134  0.251 -0.178
## Interdepen - Aligns Wit -0.193 -0.250  0.478      -0.422  0.345  0.257
## Set Agenda - Seeks Appr      -0.338 -0.589      0.318 -0.392
## Problem So - Standard S -0.297 -0.191  0.110 -0.134  0.251 -0.178
## Problem Fi - Team Playe -0.295      -0.247 -0.368 -0.312
## Comfortabl - Uncomforta -0.313      -0.177  0.181  0.368
## Hold Multi - Holds to O -0.208  0.354 -0.129      0.309  0.229
## Open & Cur - Rigid & Cl -0.238  0.294  0.144  0.137 -0.278 -0.333 -0.335
## Can Take R - Externalis -0.268  0.191 -0.238  0.339 -0.326      0.176
## Internalis - Externalis      -0.413      0.328 -0.309 -0.465 -0.215
## Manages Co - Torn in Co -0.297 -0.191  0.110 -0.134  0.251 -0.178
## Delegates - Control      -0.330      0.148  0.104      -0.130
## Empower - Hold on/Ho      -0.212 -0.298  0.304      0.480 -0.419
## Adaptive L - Technical -0.291  0.155      0.461
## Can Voice - Subject to -0.295      -0.247 -0.368 -0.312
## Leads to L - Learn to L      -0.406 -0.203  0.392      0.556
##
##                               Comp.8 Comp.9 Comp.10 Comp.11 Comp.12 Comp.13
## Independen - Faithful F -0.242 -0.122      0.182
## Interdepen - Aligns Wit  0.278 -0.398      -0.260
## Set Agenda - Seeks Appr -0.118 -0.381 -0.209 -0.280
## Problem So - Standard S -0.242 -0.122      -0.251 -0.585
## Problem Fi - Team Playe  0.149  0.177      0.142  0.362  0.278
## Comfortabl - Uncomforta  0.481  0.271  0.429 -0.449
## Hold Multi - Holds to O -0.245      -0.541  0.332
## Open & Cur - Rigid & Cl      0.200 -0.487 -0.488
## Can Take R - Externalis -0.446      0.336      0.376 -0.310
## Internalis - Externalis      0.380      -0.317  0.194
## Manages Co - Torn in Co -0.242 -0.122      0.251  0.403
## Delegates - Control      0.375 -0.198 -0.258  0.430  0.118 -0.230
## Empower - Hold on/Ho      -0.221  0.501      0.243
## Adaptive L - Technical      -0.267      0.326 -0.128  0.250
## Can Voice - Subject to  0.149  0.177      0.142 -0.421 -0.163
## Leads to L - Learn to L      0.338 -0.451
##
##                               Comp.14 Comp.15 Comp.16
## Independen - Faithful F      0.796
## Interdepen - Aligns Wit
## Set Agenda - Seeks Appr
## Problem So - Standard S  0.262 -0.335 -0.285
## Problem Fi - Team Playe  0.404 -0.387
## Comfortabl - Uncomforta
## Hold Multi - Holds to O  0.395  0.200
## Open & Cur - Rigid & Cl
## Can Take R - Externalis      0.131
## Internalis - Externalis  0.231  0.117
## Manages Co - Torn in Co -0.262  0.335 -0.511
## Delegates - Control      0.289  0.496
## Empower - Hold on/Ho
## Adaptive L - Technical -0.314 -0.539
## Can Voice - Subject to -0.548  0.139
## Leads to L - Learn to L
```

Since only the first three principal components are significant, we will look at the loadings on these linear combinations. The first principal there has three blank values which means the value of each is below 1.0, this construct is Set Agenda – Seeks Approval for Agenda Solution, internalises – Externalises & Leads to Learn – Learn to Lead. The remaining spread on the first principal component is spread averaging ~ 0.33 . The third principal component has the first significant construct namely Set Agenda – Seeks Approval for Agenda/Solution with a loading of 0.589. Significance is viewed as the absolute value on the loading above 0.5.



Biplot for Subject 4 – easiest to read.



Biplot for Subject 4

The most significantly important constructs have the longest arrows. There is only really one significant construct in this dataset as the spread is so wide. This is Leads to Learn for Myself 3 Years Ago and has a value of 1. Reading the biplot looking at the most significant construct – Leads to Learn, draw perpendicular lines to that construct. As you hit each element as you move away from the arrow, the first element is the most significant and the last is the least, now it does not matter how close the black box on the element to the construct line, if the construct line did not go out as far as the elements the draw an imaginary continuing line on the construct.

So, say here for both Leads to Learn, the order is myself 3 Years Ago, Ideal Organisation, Myself Now, My Ideal Self, My Organisation 3 Years Ago and the least significant element for that construct is My Organisation Now. It is also worth pointing out that both the constructs Set Agenda and Internalises Own Authority follow this exact same line, it is just the constructs are not as significant in the big picture but in the interaction of the elements with constructs they are exactly the same as they are on the same line with a very small angle between them.

Analysis and Results: Subject 5

Looking at the descriptive statistics for the constructs alone informs of single construct statistical values. The mean and median are reported below. There are no very small values or very large for any construct on its own, having said that most of the values are on the large side. There are other descriptive statistics, skewness and kurtosis is a representative of the distribution underlying the data, skewness determines symmetry or lack thereof, it identifies heavily tailed data whereas kurtosis is a measure of data being flat or peaked in relation to a normal distribution. These values on their own don't give us an indication of whether the underlying distribution is normally distributed or not. Running a Kolgomorov-Sinov test on the dataset determines the p-value is extremely small which can either indicate, not normal or heavily two-tailed, looking at the data with this insight would recommend it is not normal and likely log-normal, so the logarithm of the dataset is normally distributed.

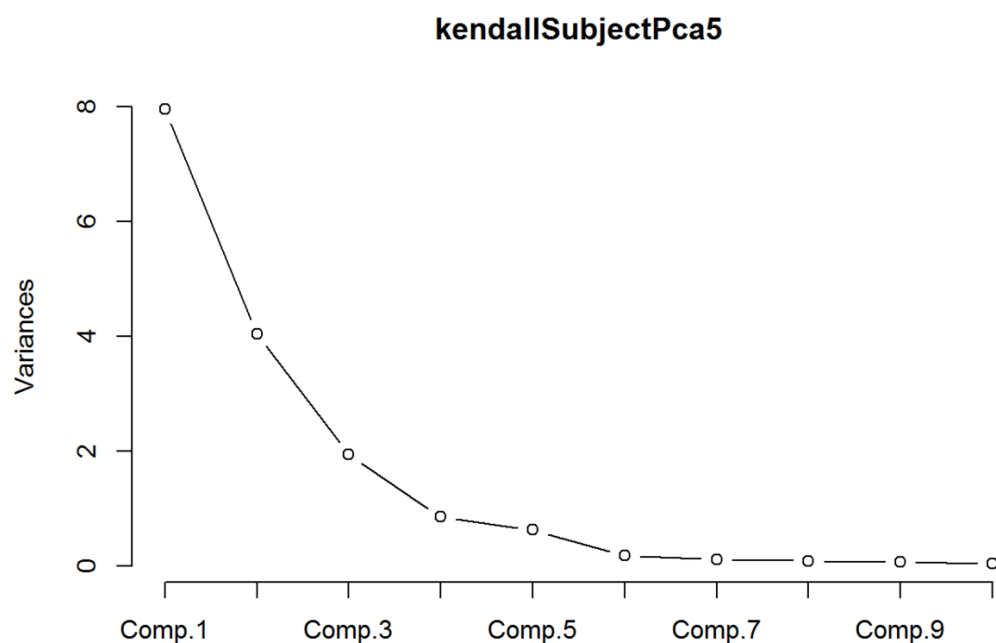
```

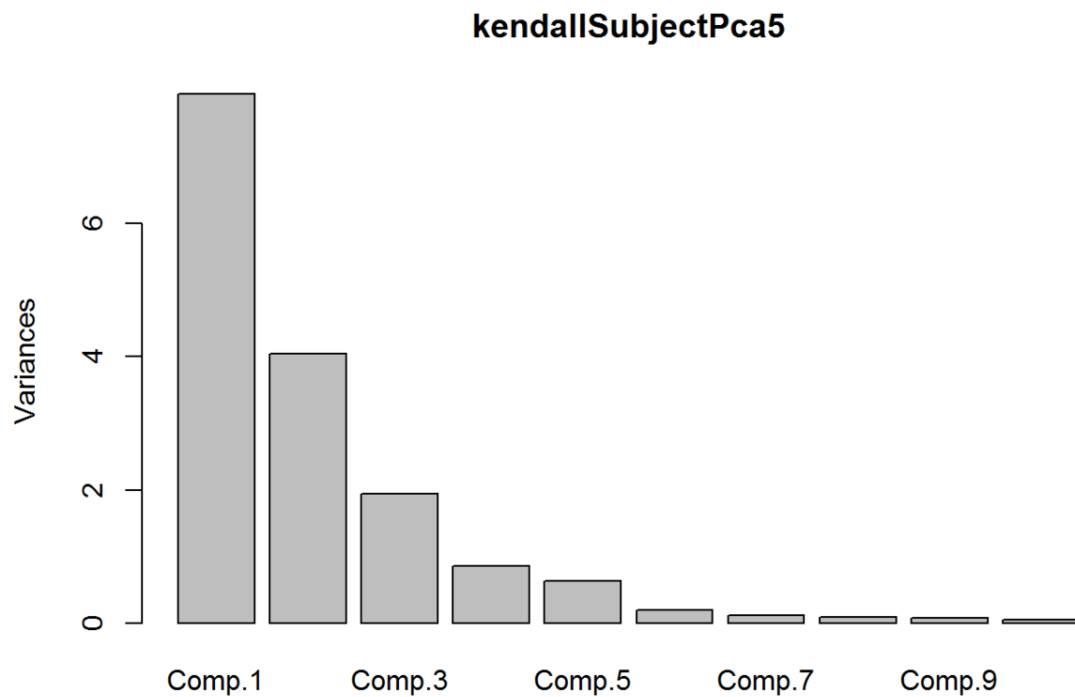
## #####
## Descriptive statistics for constructs
## #####
##
##                                vars n mean    sd median trimmed  mad min max
## (1) Independen - Faithful F      1 6 3.50 1.30   3.75    3.50 0.74 1.0 4.5
## (2) Interdepen - Aligns Wit      2 6 3.83 1.60   4.50    3.83 0.74 1.0 5.0
## (3) Set Agenda - Seeks Appr      3 6 4.92 0.20   5.00    4.92 0.00 4.5 5.0
## (4) Problem So - Standard S      4 6 4.00 1.26   4.50    4.00 0.74 2.0 5.0
## (5) Problem Fi - Team Playe      5 6 3.83 1.47   4.00    3.83 0.74 1.0 5.0
## (6) Comfortabl - Uncomforta      6 6 4.58 1.02   5.00    4.58 0.00 2.5 5.0
## (7) Hold Multi - Holds to O      7 6 4.00 1.38   4.75    4.00 0.37 2.0 5.0
## (8) Open & Cur - Rigid & Cl      8 6 4.67 0.82   5.00    4.67 0.00 3.0 5.0
## (9) Can Take R - Externalis      9 6 4.08 1.53   4.50    4.08 0.37 1.0 5.0
## (10) Internalis - Externalis     10 6 4.00 1.67   5.00    4.00 0.00 1.0 5.0
## (11) Manages Co - Torn in Co     11 6 4.67 0.52   5.00    4.67 0.00 4.0 5.0
## (12) Delegates - Control         12 6 3.17 0.75   3.00    3.17 0.74 2.0 4.0
## (13) Empower - Hold on/Ho       13 6 3.33 1.54   3.75    3.33 1.48 1.0 5.0
## (14) Adaptive L - Technical      14 6 3.58 1.53   4.25    3.58 0.74 1.0 5.0
## (15) Can Voice - Subject to      15 6 3.67 1.47   4.25    3.67 0.74 1.0 5.0
## (16) Leads to L - Learn to L    16 6 3.67 1.66   4.25    3.67 1.11 1.0 5.0
##
##                                range skew kurtosis  se
## (1) Independen - Faithful F      3.5 -1.02    -0.63 0.53
## (2) Interdepen - Aligns Wit      4.0 -0.75    -1.22 0.65
## (3) Set Agenda - Seeks Appr      0.5 -1.36    -0.08 0.08
## (4) Problem So - Standard S      3.0 -0.49    -1.70 0.52
## (5) Problem Fi - Team Playe      4.0 -1.02    -0.58 0.60
## (6) Comfortabl - Uncomforta      2.5 -1.36    -0.08 0.42
## (7) Hold Multi - Holds to O      3.0 -0.53    -1.89 0.56
## (8) Open & Cur - Rigid & Cl      2.0 -1.36    -0.08 0.33
## (9) Can Take R - Externalis      4.0 -1.28    -0.21 0.62
## (10) Internalis - Externalis      4.0 -0.85    -1.17 0.68
## (11) Manages Co - Torn in Co      1.0 -0.54    -1.96 0.21
## (12) Delegates - Control          2.0 -0.17    -1.54 0.31
## (13) Empower - Hold on/Ho        4.0 -0.39    -1.73 0.63
## (14) Adaptive L - Technical        4.0 -0.65    -1.44 0.62
## (15) Can Voice - Subject to        4.0 -0.82    -1.05 0.60
## (16) Leads to L - Learn to L      4.0 -0.49    -1.65 0.68

```

Multivariate data is ubiquitous by nature. Most multivariate data can be represented in rectangular format and the rectangular is a really good indication of multivariate. There are a few ways to further analyse multivariate data and for this study both principal component analysis and hierarchical clustering have been chosen. Principal component analysis is a dimension reduction tool, this dataset has 16 dimensions, whilst trying to keep as much of the variation as possible to not lose granularity. It is a non-destructive test it reframes the

data using their eigenvalues and eigenvalues. The purpose of principal component analysis is to describe variation in a set of correlated variables, which correlation coefficient to use is determined by whether the assumption of the underlying distribution is normal or not normal(parametric/non-parametric), since it has been established it is not normal the only option is Kendall-Tau correlation coefficient. Principal component analysis happens by transforming to a new set variable called the principal components, these are linear combinations of the original variables which are uncorrelated and are ordered so that the first few of them account for most of the variation. In an ideal situation the result of principal component analysis would be the creation of a small number of new variables that can be uses as surrogates for the originally large number of variables and consequently provide a simpler basis for graphing a summarizing the data.





Graphics of Principal Components for Subject 5.

	Standard Deviation	Eigenvalue	% of variation accounted for
Principal Component 1	2.81	7.89	49.68%
Principal Component 2	2.01	4.04	25.30%
Principal Component 3	1.39	1.93	12.15%

The next question is how many principal components are statistically important? On the line chart above, looking for the elbow indicates where to cut off and stop viewing that component as significant. The y-axis on both charts are the eigenvalues, they are approximately equal to the standard deviation squared. Looking at the importance of components, only consider the standard deviation above 1. For this subject only the first three principal components are above the importance line of standard deviation >1 accounting for 49.68%, 25.30% and 12.15% of the variation respectively.

```

## Importance of components:
##               Comp.1   Comp.2   Comp.3   Comp.4   Comp.5
## Standard deviation  2.8194943 2.0120851 1.3948213 0.92748583 0.79611702
## Proportion of Variance 0.4968467 0.2530304 0.1215954 0.05376437 0.03961264
## Cumulative Proportion 0.4968467 0.7498771 0.8714725 0.92523692 0.96484956
##               Comp.6   Comp.7   Comp.8   Comp.9
## Standard deviation  0.43876121 0.346156216 0.306547018 0.276778531
## Proportion of Variance 0.01203196 0.007489008 0.005873192 0.004787897
## Cumulative Proportion 0.97688153 0.984370533 0.990243725 0.995031622
##               Comp.10   Comp.11   Comp.12   Comp.13
## Standard deviation  0.214387052 0.141380861 0.1163773443 6.515337e-09
## Proportion of Variance 0.002872613 0.001249284 0.0008464804 2.653101e-18
## Cumulative Proportion 0.997904235 0.999153520 1.0000000000 1.000000e+00
##               Comp.14 Comp.15 Comp.16
## Standard deviation  0      0      0
## Proportion of Variance 0      0      0
## Cumulative Proportion 1      1      1

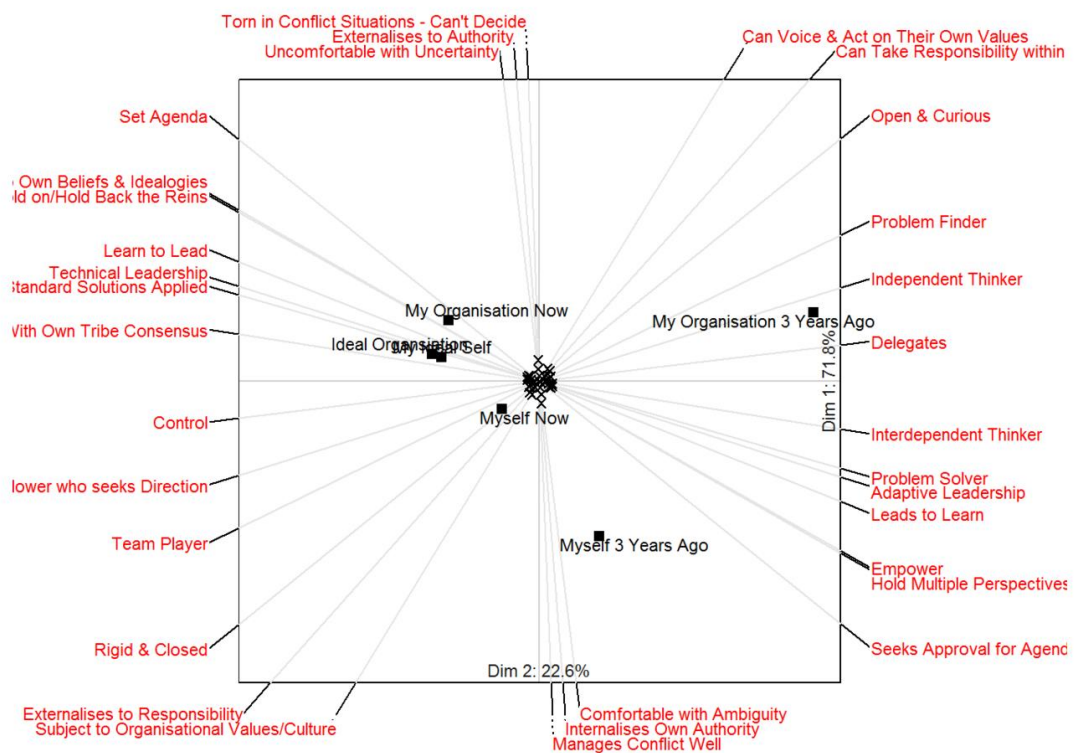
```

```

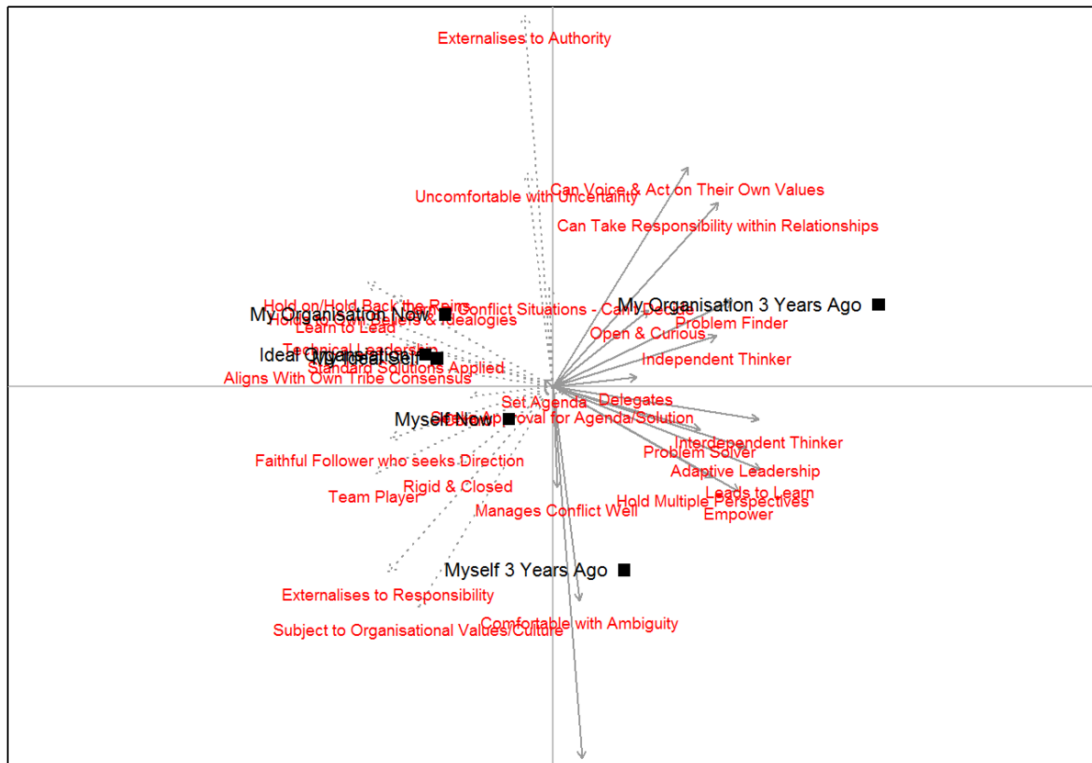
## Loadings:
##
##               Comp.1 Comp.2 Comp.3 Comp.4 Comp.5 Comp.6 Comp.7
## Independen - Faithful F -0.320      0.219 -0.136 -0.152  0.370  0.290
## Interdepen - Aligns Wit -0.348      -0.114  0.103
## Set Agenda - Seeks Appr  0.171      -0.383 -0.721      -0.167
## Problem So - Standard S -0.255      -0.325  0.511      0.180
## Problem Fi - Team Playe -0.299 -0.125  0.287      -0.266  0.113 -0.196
## Comfortabl - Uncomforta -0.144  0.354 -0.177  0.196 -0.537 -0.366 -0.351
## Hold Multi - Holds to O -0.237      -0.431 -0.211 -0.376      0.261
## Open & Cur - Rigid & Cl -0.242 -0.347 -0.105      -0.137  0.352
## Can Take R - Externalis      -0.461 -0.183  0.139      -0.442  0.220
## Internalis - Externalis -0.157  0.423      -0.410  0.122
## Manages Co - Torn in Co -0.140  0.415  0.190 -0.130      -0.183  0.543
## Delegates - Control      -0.299 -0.125  0.287      -0.266  0.113 -0.196
## Empower - Hold on/Ho      -0.311      -0.177      0.465      -0.257
## Adaptive L - Technical -0.316      -0.204 -0.113  0.373      -0.140
## Can Voice - Subject to      -0.378  0.391 -0.152      -0.489 -0.181
## Leads to L - Learn to L -0.348      -0.114  0.103
##
##               Comp.8 Comp.9 Comp.10 Comp.11 Comp.12 Comp.13
## Independen - Faithful F -0.400  0.168  0.321 -0.187  0.111  0.367
## Interdepen - Aligns Wit -0.122  0.371      0.105      0.229
## Set Agenda - Seeks Appr -0.412 -0.264 -0.169
## Problem So - Standard S -0.375 -0.335 -0.214  0.410  0.252
## Problem Fi - Team Playe  0.151 -0.212 -0.318      -0.111
## Comfortabl - Uncomforta -0.186      0.372 -0.127 -0.218
## Hold Multi - Holds to O  0.548      0.125      0.415
## Open & Cur - Rigid & Cl -0.109      0.130 -0.122 -0.365 -0.297
## Can Take R - Externalis -0.121  0.151 -0.297 -0.267 -0.147  0.220
## Internalis - Externalis -0.118  0.276 -0.493      0.242  0.107
## Manages Co - Torn in Co      -0.476      -0.103 -0.101
## Delegates - Control      0.151 -0.212 -0.318      -0.111
## Empower - Hold on/Ho      -0.247      -0.641  0.320
## Adaptive L - Technical  0.250      0.367 -0.446  0.381
## Can Voice - Subject to -0.112 -0.150  0.321  0.331  0.389
## Leads to L - Learn to L -0.122  0.371      0.105      -0.705
##
##               Comp.14 Comp.15 Comp.16
## Independen - Faithful F      0.336
## Interdepen - Aligns Wit  0.180      -0.769
## Set Agenda - Seeks Appr
## Problem So - Standard S
## Problem Fi - Team Playe -0.299  0.631
## Comfortabl - Uncomforta
## Hold Multi - Holds to O
## Open & Cur - Rigid & Cl -0.551 -0.247 -0.167
## Can Take R - Externalis  0.409  0.183  0.124
## Internalis - Externalis -0.370 -0.166  0.168
## Manages Co - Torn in Co  0.348  0.156 -0.158
## Delegates - Control      0.299 -0.631
## Empower - Hold on/Ho
## Adaptive L - Technical      0.349
## Can Voice - Subject to
## Leads to L - Learn to L  0.247  0.237  0.252

```

Only the first three principal components are significant and yet within those components, there are no loadings over 0.50, which we have assumed as significant which means that the data and its significance is quite spread out in variation which makes sense when looking at the previous values, For example, the first principal component only accounts for half of the variation in the data specifically under 50% while the second principal component accounts for half of that again with 25% and the third principal component accounts for half of that yet again with 12%. This can also be seen on graphical representation of the principal component analysis as an elbow is not obvious and the declination approaching zero is gradual.



2D Biplot for Subject 5 – easiest to read.

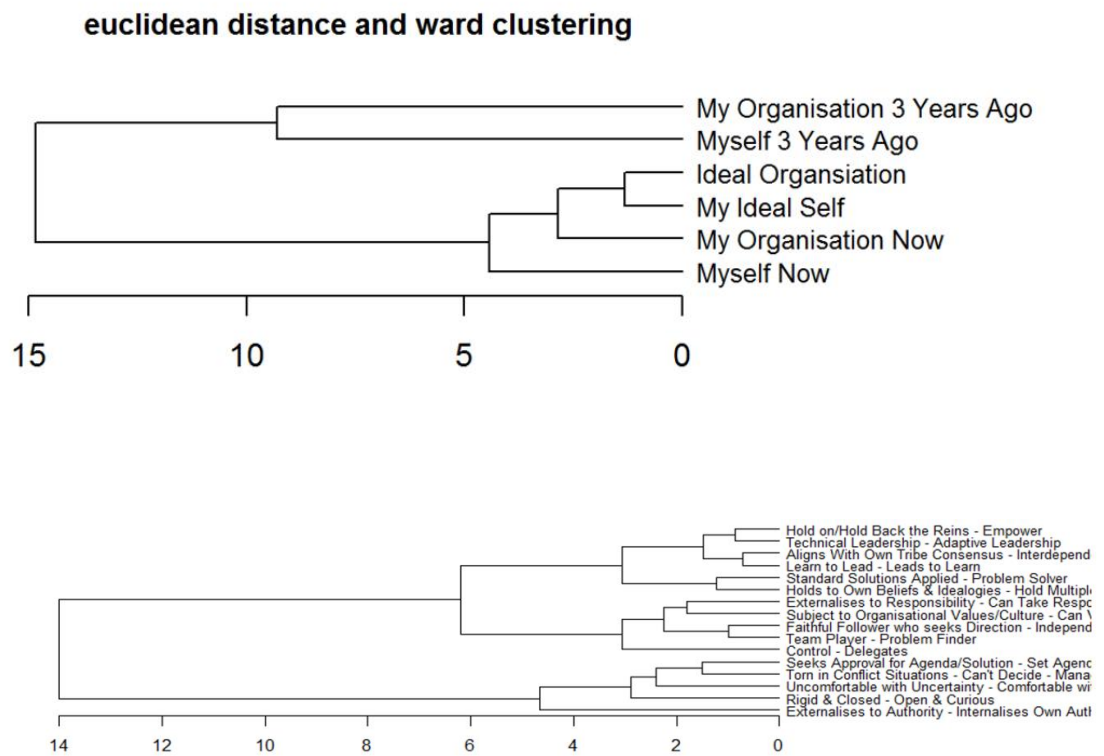


2D Biplot for Subject 5.

Reading the biplot you look at the most significant construct –Internalises Own Authority and draw perpendicular lines to that construct. As you hit each element as you move away from the arrow, the first element is the most significant and the last is the least. It does not matter how close the black box on the element is to the construct line, if the construct line did not go out as far as the elements, then draw an imaginary continuing line on the construct.

So here the construct Internalises Own Authority, the order is myself 3 Years Ago, Myself Now, Ideal Organisation Now, Ideal Self and then My Organisation 3 Years Ago and My Organisation Now and least significant is Ideal Self. The exact same analysis of construct element interaction can be said for the Comfortable with Ambiguity and Manages Conflict Well constructs. In this interaction case it does not matter how long the arrows are as it can be assumed there are imaginary extended lines each direction.

Cluster Analysis for Elements Only for Subject 5



Analysis of Results Subject 6

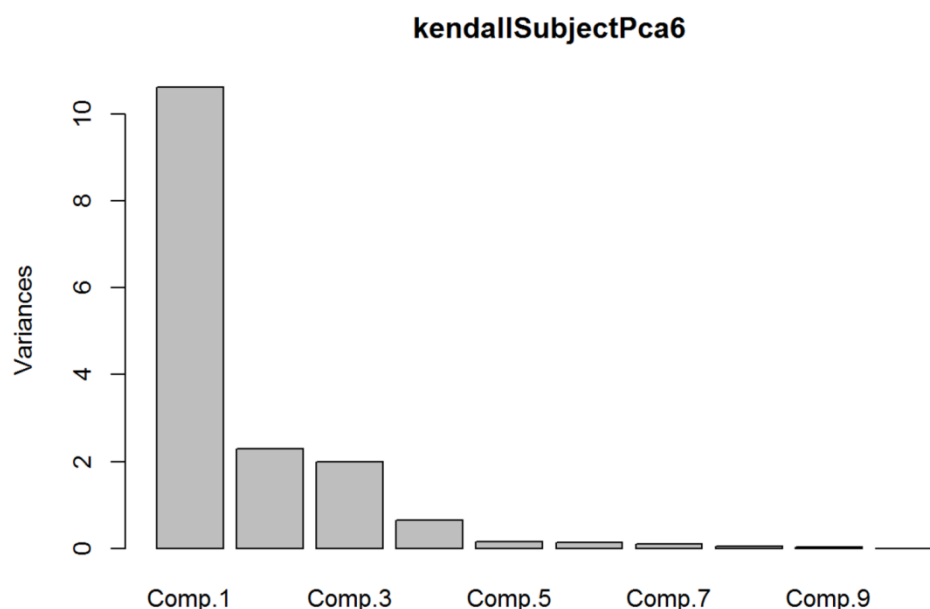
Looking at the descriptive statistics for the constructs alone informs of single construct statistical values. The mean and median are reported below. Construct 16 – Leads to Learn – Learns to Lead has the lowest mean and median and there is no obvious highest value but most of the means are on the high side. There are other descriptive statistics, skewness and kurtosis representative of the distribution underlying the data and skewness determines symmetry or lack thereof identifying heavily tailed data whereas kurtosis is a measure of data being flat or peaked in relation to a normal distribution. These values on their own don't give us an indication of whether the underlying distribution is normally distributed or not. Running a Kolgomorov-Sinov test on the dataset determines the p-value is extremely small which can either indicate, not normal or heavily two-tailed, looking at the data with this insight would recommend it is not normal and likely log-normal, so the logarithm of the dataset is normally distributed.

```

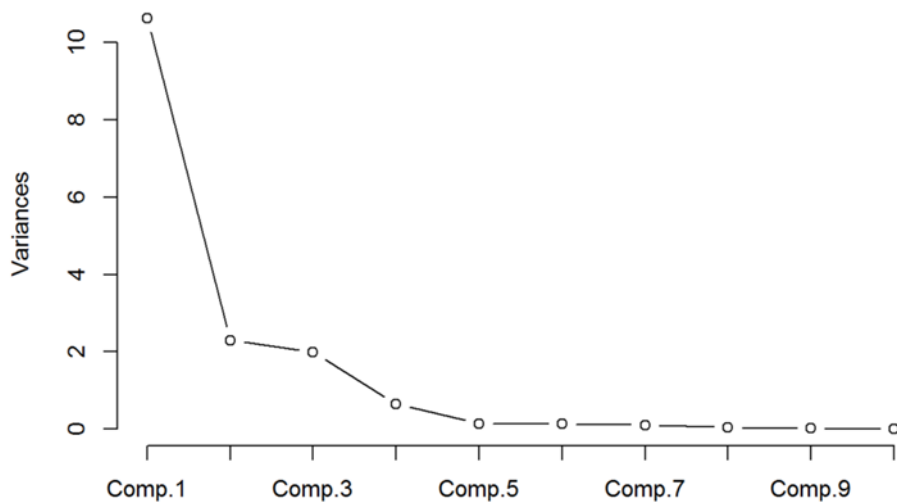
## #####
## Descriptive statistics for constructs
## #####
##
##          vars n mean    sd median trimmed  mad min max
## (1) Independen - Faithful F      1 6 4.00 0.89      4    4.00 1.48   3   5
## (2) Interdepen - Aligns Wit      2 6 4.17 0.75      4    4.17 0.74   3   5
## (3) Set Agenda - Seeks Appr      3 6 3.50 0.84      4    3.50 0.00   2   4
## (4) Problem So - Standard S      4 6 4.50 0.84      5    4.50 0.00   3   5
## (5) Problem Fi - Team Playe      5 6 4.00 0.89      4    4.00 1.48   3   5
## (6) Comfortabl - Uncomforta      6 6 3.83 0.41      4    3.83 0.00   3   4
## (7) Hold Multi - Holds to O      7 6 3.83 0.41      4    3.83 0.00   3   4
## (8) Open & Cur - Rigid & Cl      8 6 3.67 0.52      4    3.67 0.00   3   4
## (9) Can Take R - Externalis      9 6 3.83 0.41      4    3.83 0.00   3   4
## (10) Internalis - Externalis     10 6 3.67 0.52      4    3.67 0.00   3   4
## (11) Manages Co - Torn in Co     11 6 4.50 0.84      5    4.50 0.00   3   5
## (12) Delegates - Control         12 6 3.33 0.52      3    3.33 0.00   3   4
## (13) Empower - Hold on/Ho       13 6 3.33 0.52      3    3.33 0.00   3   4
## (14) Adaptive L - Technical      14 6 2.83 0.75      3    2.83 0.74   2   4
## (15) Can Voice - Subject to      15 6 3.67 0.52      4    3.67 0.00   3   4
## (16) Leads to L - Learn to L    16 6 2.50 0.84      2    2.50 0.00   2   4
##
##          range  skew kurtosis    se
## (1) Independen - Faithful F      2  0.00    -1.96 0.37
## (2) Interdepen - Aligns Wit      2 -0.17    -1.54 0.31
## (3) Set Agenda - Seeks Appr      2 -0.85    -1.17 0.34
## (4) Problem So - Standard S      2 -0.85    -1.17 0.34
## (5) Problem Fi - Team Playe      2  0.00    -1.96 0.37
## (6) Comfortabl - Uncomforta      1 -1.36    -0.08 0.17
## (7) Hold Multi - Holds to O      1 -1.36    -0.08 0.17
## (8) Open & Cur - Rigid & Cl      1 -0.54    -1.96 0.21
## (9) Can Take R - Externalis      1 -1.36    -0.08 0.17
## (10) Internalis - Externalis      1 -0.54    -1.96 0.21
## (11) Manages Co - Torn in Co      2 -0.85    -1.17 0.34
## (12) Delegates - Control          1  0.54    -1.96 0.21
## (13) Empower - Hold on/Ho         1  0.54    -1.96 0.21
## (14) Adaptive L - Technical       2  0.17    -1.54 0.31
## (15) Can Voice - Subject to        1 -0.54    -1.96 0.21
## (16) Leads to L - Learn to L      2  0.85    -1.17 0.34

```

Looking at the statistical values on their own, can only give certain insights. This data is multivariate. Multivariate data happens when values of several random variables on a number of subjects are recorded, this is an ideal example of multivariate, giving the scale within a scale. Multivariate data is ubiquitous by nature. There are a few ways to further analyse multivariate data and for this study both principal component analysis and Hierarchical clustering have been chosen. Principal component analysis is a dimension reduction tool, this dataset has 16 dimensions, whilst trying to keep as much of the variation as possible to not lose granularity. It is a non-destructive test it reframes the data using their eigenvalues and eigenvalues. The purpose of principal component analysis is to describe variation in a set of correlated variables, which correlation coefficient to use is determined by whether the assumption of the underlying distribution is normal or not normal(parametric/non-parametric), since it has been established it is not normal the only option is Kendall-Tau correlation coefficient. Principal component analysis happens by transforming to a new set variable called the principal components, these are linear combinations of the original variables which are uncorrelated and are ordered so that the first few of them account for most of the variation. In an ideal situation the result of principal component analysis would be the creation of a small number of new variables that can be uses as surrogates for the originally large number of variables and consequently provide a simpler basis for graphing data.



kendallSubjectPca6



The next question is

how many principal components are statistically important? On the line chart above, looking for the elbow indicates where to cut off and stop viewing that component as significant. The y-axis on both charts are the eigenvalues, they are approximately equal to the standard deviation squared. Looking at the importance of components, only consider the standard deviation above 1. For this subject only the first three principal components are above the importance line of standard deviation >1 accounting for 66.38%, 14.34% and 12.46% of the variation respectively.

	Standard Deviation	Eigenvalue	% Of variation accounted for
Principal Component 1	3.25	10.62	66.38%
Principal Component 2	1.51	2.29	14.34%
Principal Component 3	1.41	1.99	12.46%

```

## Importance of components:
##               Comp.1   Comp.2   Comp.3   Comp.4
## Standard deviation   3.2590481 1.5148086 1.4119552 0.80399766
## Proportion of Variance 0.6638372 0.1434153 0.1246011 0.04040076
## Cumulative Proportion 0.6638372 0.8072525 0.9318536 0.97225436
##               Comp.5   Comp.6   Comp.7   Comp.8
## Standard deviation   0.379886403 0.359049990 0.325580287 0.210238828
## Proportion of Variance 0.009019605 0.008057306 0.006625158 0.002762523
## Cumulative Proportion 0.981273968 0.989331274 0.995956432 0.998718955
##               Comp.9   Comp.10   Comp.11   Comp.12
## Standard deviation   0.143166758 2.207043e-08 8.126112e-09 4.527322e-09
## Proportion of Variance 0.001281045 3.044398e-17 4.127106e-18 1.281040e-18
## Cumulative Proportion 1.000000000 1.000000e+00 1.000000e+00 1.000000e+00
##               Comp.13 Comp.14 Comp.15 Comp.16
## Standard deviation           0           0           0           0
## Proportion of Variance           0           0           0           0
## Cumulative Proportion           1           1           1           1
...

```



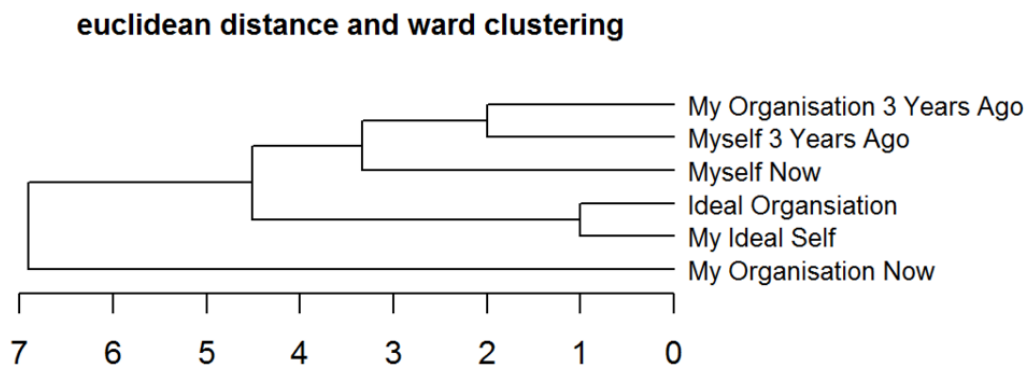
```

## Loadings:
##
##               Comp.1 Comp.2 Comp.3 Comp.4 Comp.5 Comp.6 Comp.7
## Independen - Faithful F -0.263  0.199  0.229          0.403 -0.308 -0.388
## Interdepen - Aligns Wit -0.279          0.233 -0.213  0.355          0.269
## Set Agenda - Seeks Appr -0.269  0.249 -0.168          0.489  0.112
## Problem So - Standard S -0.269  0.249 -0.168          0.489  0.112
## Problem Fi - Team Playe -0.227  0.201 -0.108  0.665          -0.336  0.567
## Comfortabl - Uncomforta -0.259 -0.151 -0.299 -0.272 -0.172 -0.195
## Hold Multi - Holds to O -0.259 -0.151 -0.299 -0.272 -0.172 -0.195
## Open & Cur - Rigid & Cl -0.254  0.338 -0.113          -0.363
## Can Take R - Externalis -0.259 -0.151 -0.299 -0.272 -0.172 -0.195
## Internalis - Externalis -0.254  0.338 -0.113          -0.363
## Manages Co - Torn in Co -0.235 -0.396          0.242  0.188          -0.162
## Delegates - Control      -0.216          0.486          -0.412
## Empower - Hold on/Ho     -0.216          0.486          -0.412
## Adaptive L - Technical   0.279          -0.233  0.213 -0.355          -0.269
## Can Voice - Subject to -0.211 -0.424          0.307 -0.236  0.433 -0.172
## Leads to L - Learn to L  0.235  0.396          -0.242 -0.188          0.162
##
##               Comp.8 Comp.9 Comp.10 Comp.11 Comp.12 Comp.13
## Independen - Faithful F  0.598  0.271
## Interdepen - Aligns Wit      -0.334  0.594          0.247 -0.141
## Set Agenda - Seeks Appr      0.284          -0.327 -0.323
## Problem So - Standard S      0.284          0.327  0.323
## Problem Fi - Team Playe  0.122
## Comfortabl - Uncomforta          -0.507  0.350  0.244
## Hold Multi - Holds to O          -0.400          0.136 -0.295
## Open & Cur - Rigid & Cl -0.245 -0.306          0.111
## Can Take R - Externalis      0.307  0.552 -0.486
## Internalis - Externalis -0.245 -0.306          -0.111
## Manages Co - Torn in Co -0.326  0.245          0.308  0.357
## Delegates - Control      0.176          0.100          0.628
## Empower - Hold on/Ho     0.176          -0.100          -0.628
## Adaptive L - Technical      0.334  0.594          0.247 -0.141
## Can Voice - Subject to  0.484 -0.414
## Leads to L - Learn to L  0.326 -0.245          0.308  0.357
##
##               Comp.14 Comp.15 Comp.16
## Independen - Faithful F
## Interdepen - Aligns Wit          0.235
## Set Agenda - Seeks Appr -0.381 -0.313  0.204
## Problem So - Standard S  0.381  0.313 -0.204
## Problem Fi - Team Playe
## Comfortabl - Uncomforta -0.155  0.111 -0.428
## Hold Multi - Holds to O  0.261 -0.146  0.556
## Open & Cur - Rigid & Cl -0.398  0.480  0.296
## Can Take R - Externalis -0.106          -0.129
## Internalis - Externalis  0.398 -0.480 -0.296
## Manages Co - Torn in Co -0.351 -0.356 -0.105
## Delegates - Control      0.120 -0.154  0.224
## Empower - Hold on/Ho     -0.120  0.154 -0.224
## Adaptive L - Technical          0.235
## Can Voice - Subject to
## Leads to L - Learn to L -0.351 -0.356 -0.105

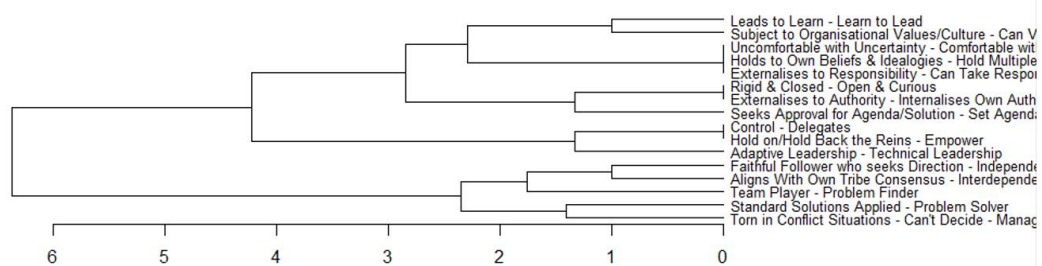
```


move away from the arrow, the first element is the most significant and the last is the least., now it does not matter how close the black box on the element is to the construct line, if the construct line did not go out as far as the elements the draw an imaginary continuing line on the construct. So here for Problem Finder and Independent Thinker, the order is Myself Now and My Organisation Now together, then Myself 3 Years Ago and My Organisation 3 Years Ago and then Ideal Organisation and least significant for those constructs are Ideal Self.

Cluster Analysis for Elements Only for Subject 6.



Cluster Analysis for Constructs Only for Subject 6.

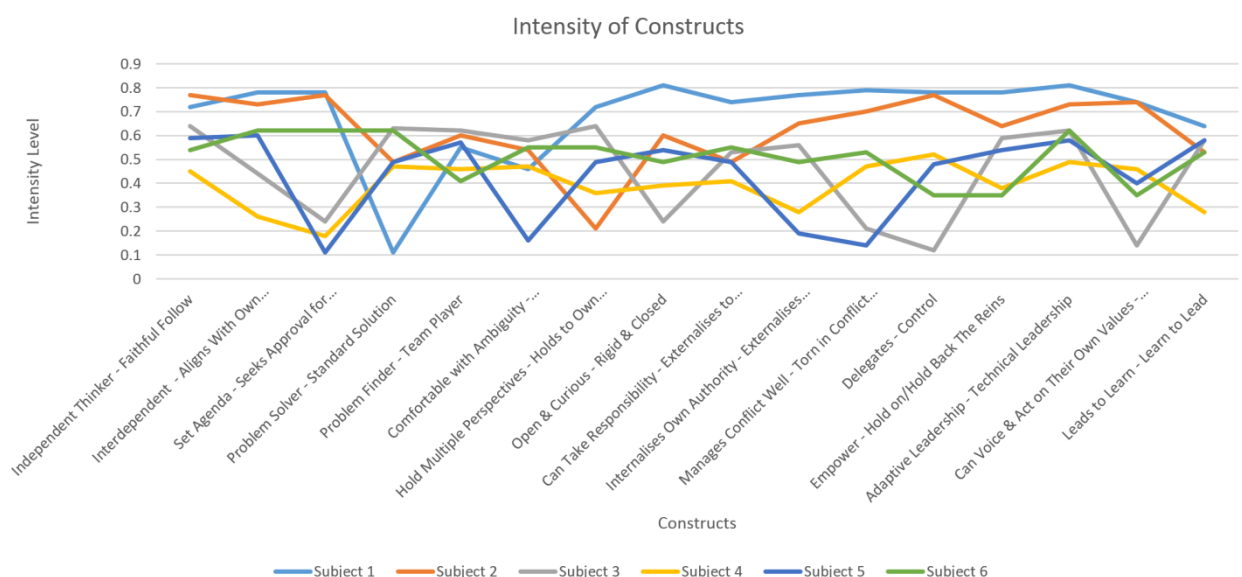


It is difficult to determine the degree of certainty to which each one group is more significant than another group, all that can be said is that there are groups and what these groups are. The elements have one grouping with subgroups and one single leafed element. For the

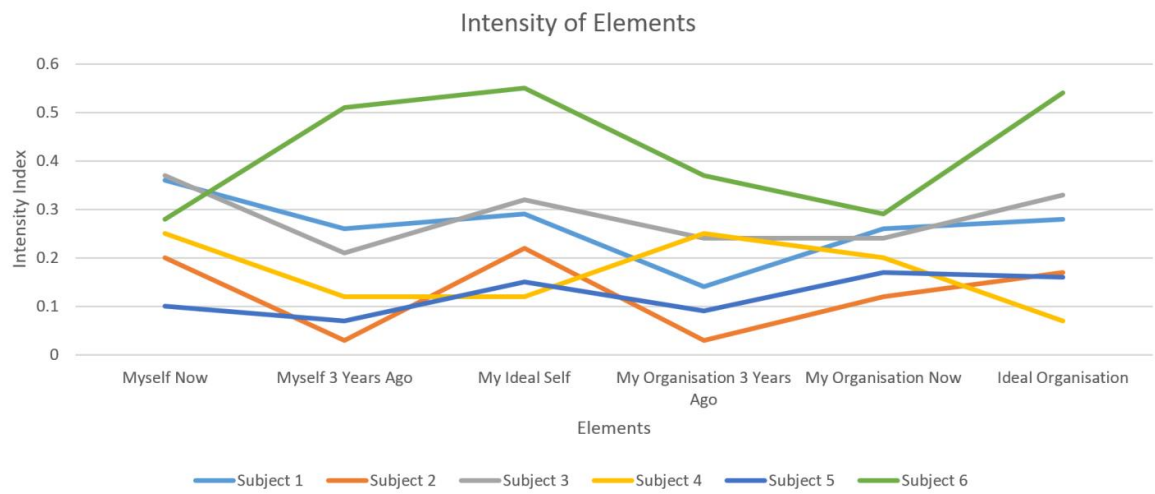
constructs there are five groups with additional subgroups (1,2,3,4,5). The first group (1) is the largest and includes five of the constructs, there are four remaining groups that are smaller with the fifth group (5) only having two constructs. The shorter the length on the branch of the cluster the closer the constructs are to one another in similarity

Intensity Summary

This is a measure of how the constructs are linked together for each individual. The higher up the intensity level you go the higher the linkage and likewise downwards the lower the linkage. For example, on Subject 1 the construct problem solver is independent of the remaining constructs.



Line chart of the intensity of the construct linkages for all subjects. The line chart below demonstrates the linkages with the elements for each subject. The green line is subject 6 and it's a really nice example of the linkages, for example with subject 6 it was difficult to determine groupings within the elements however looking at this graph, my organisation now is obvious but Myself now has also been identified



Line chart of the intensity of the element linkages for all subjects.