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Complexity Theory and Leadership for Turbulent Environments

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ABSTRACT Businesses and their environments are complex adaptive systems, and are therefore too complex to be 'managed' by a single leader. Thus, the traditional view of a leader as a decision-maker, instructing and controlling the organisation is inappropriate in complex/turbulent environments. A qualitative, case method, using depth interviews, investigated leadership activities in four companies, in a country with a turbulent environment, to identify if self-organising leadership is more effective in turbulent environments than traditional bureaucratic management. The findings showed that self-organising leadership appears superior in turbulent environments. These findings and their implications are discussed, and recommendations for further research are made.

INTRODUCTION

The mindset that has driven business and industry over the past half millennium is based on Newtonian physics, and over the past century, on Scientific Management as developed by Taylor. In business this resulted in 'command and control' management. The Newtonian/Taylorist paradigm assumes a relatively stable, simple and linear environment with long- and short-term predictability. These methods no longer work because they were designed for a different world that no longer exists - in today's environments, control, and not prediction, is important - and in a complex environment the commanded agents are "absolved…of individual responsibility" (Kelly and Allison 1999). Unfortunately, most managers were brought up in, and trained for, an environment of certainty, whereas they now face increased complexity and uncertainty. Organisational and leadership researchers are investigating many new ways of understanding organisations in today's complex, uncertain and turbulent environments – for example Raisch and Birkinshaw's (2008) organisational ambidexterity, which involves simultaneously coping with today's business demands and adapting to changes in the environment, and Lüscher and Lewis' (2008) use of sense-making and paradox to understand organisational change. Complexity and chaos theory, which emphasise flexibility and adaptability, are increasingly being used as metaphors for the evolution of today's businesses. These theories see the universe as "a web of 'living', interconnected, self-organising parts that form a constantly co-evolving… whole" (Kelly and Allison 1999: 35). Chaos theory shows that what looks complicated may have relatively simple, but non-linear origins, while complexity theory shows that something apparently simple can have complex underlying patterns (Briggs and Peat 1999). In the field of leadership, complexity theory, although very new, is increasingly being applied, as is shown by Schneider and Somers (2006), Simpson (2007) and Newth and Corner (2009). This paper reports on a study which aimed to investigate leadership from a complexity theory viewpoint (specifically self-organisation) and its applicability to success in a complex and turbulent environment.

LITERATURE REVIEW

Command and Control

The 'control and command' style of management is based on the Newtonian/Taylorist view of the organisation being a predictable machine, and therefore, controllable. It stresses predicting and controlling the nature and direction of change (Keene 2000), but management overestimate their ability to control. 'Command and control' is not applicable today, first, because today's world is so complex and uncertain that tight integration and control leads to ossification and a lack of flexibility to handle rapid change. Second, managers cannot command commitment from staff because today's generation is more authority averse than any in history and are "non-reliant upon formal authority structures (Schneider and Somers 2006: 356). Third,

the expectations created from the high rates of change exceed the capabilities of an individual leader (Keene 2000). Finally, trying to measure ever-finer levels of a system, which is typical of traditional control, is pointless as everything about a system can never be known (Stacey 1991).

Organisation as an Open System

"Corporations are starting to take on the complexity of biological systems" (Gibson 1996: 251). Therefore, instead of seeing businesses as "entities that are mechanical in their operation", they need to be understood as an "ecology of organisms." Viewing corporations as organisms is consistent with the complexity perspective. In trying to understand and deal with complex open systems, Wilkinson and Young (1998) and Briggs and Peat (1999) stress the interconnectedness of complex systems. Each part of the system affects all other parts, resulting in a sum that is greater than the sum of the parts. These interactions create non-linear feedback that leads to self-organisation emerging unpredictably from the system. Thus, the outcomes of management actions and the behaviour within the system cannot be predicted. Ritter et al. (2004) argue that businesses form loosely coupled networks that self-organise with order emerging bottom-up. They imply that such businesses are eco-systems, and therefore difficult to manage as there is no network leader directing actions – they self-organise from the bottom-up (Wilkinson 2006).

To cope with the unpredictability of complex open systems, management is changing from controlling and directing the firm's activities, to participating in, and responding to, the results emerging from the self-organisation (Wilkinson and Young 1998). This involves continuous creativity, nudging the business system in the direction required (Stacey 1991), and is critical to success in rapidly changing environments (Baskin 1998a). Baskin (1998b) refers to this as 'management by letting go'.

Self- organisation

All organisations are self-organizing systems (Baskin 1998b). As the organisation develops as a loosely organised complex adaptive system (CAS), it requires a more formal structure and direction. This can come from control or self-control, but only self-control will be successful in the long-term. Briggs and Peat (1999) agree that leadership systems are ineffective in resolving complex social problems, suggesting that self-organisation produces better solutions. In the words of Bechtold (1997: 200):

"the brilliance of even the wisest executive dims in comparison to the voltage of a full organisation's wisdom lit by the intellectual and emotional energy of all its employees. "

Self-organisation begins with autonomy of the individual, whose actions reinforce the actions of others, thereby increasing complexity, which encourages self-organisation (van der Erve 1998). Thus, self-organisation is dependent on autonomy, inter-dependence and democratic principles, valuing each person as a capable and responsible participant. Self-organising behaviour emerges from local behaviour, rather than from orders from the top (Andrew 2002). Emergence in business is facilitated by having interconnected systems, by allowing random interactions between people, by circulating information throughout the system, and by communicating with close colleagues (Andrew 2002).

However, since emergence is unpredictable, it must be monitored in case it moves in an unacceptable direction. Self-organised changes are largely uncontrollable by management, so it is sometimes necessary to intervene, but usually it is better to stand aside and let the system self-organise. As the system gets bigger, it is often better to let it self-organise because it may be too complex to 'manage'. Self-organisation does not negate control – it should rather be distributed throughout the organisation (Cilliers 1999).

Leadership

As organisations become bigger, they increase in complexity, but become less capable of handling complexity. When the environment's complexity exceeds individual complexity the firm ceases to be manageable by a single manager (Wilkinson and Young 2005). The culture required to cope with bigness is suited to routine processes but is unsuited to uncertainty and complexity. As a result, control-oriented management, when applied in an uncertain environment, is inappropriate. Fitzgerald and van Eijnatten (1998) maintain that, since the future cannot be known in advance, control in complex envi-

ronments has to do with 'influencing', rather than 'determining' future events. Senge (1990) and McGlone and Ramsey (1998) feel that control should be local, through self-management, rather than global, by management. This implies that managers have to accept that they do not have all the answers (Weeks 2007). 'New leadership' should, therefore, be about facilitating an environment that enables staff to interact and release their potential (Keene 2000).

Therefore, leaders need to be coaches, who "facilitate and enable" staff, and who "determine the direction of the organisation and…create the environment in which everyone else can operate" (Gibson 1996: 100). This means that the bureaucratic manager does not have a role to play, as the bottom levels in the organisation are left to steer (control) the organisation in the required direction. Welsh and Wilkinson (2002) see the role of a leader as influencing relationships. Leadership approaches and roles in turbulent environments have been suggested by a number of authors, three of which are summarised in Table 1.

According to Carney (2007: 178), taking a view of leadership as "individual follower-empowerment to its logical end" leads to Green's 'hospitable leadership; and Greenleaf's 'servant leadership'. Since this emphasizes the needs of those being led, it leads to moral and inspirational leadership. However, the literature does not provide evidence of its being specifically suitable in turbulent environments. Probably more relevant in complex and turbulent environments might be shared or distributed leadership, which is a process, rather than a person, in a work group (Avolio et al. 2009). It is dynamic and develops in a work group dependent on inter-relationships and connections between team members. The group members influence each other in order to achieve the group's goals. They suggest this may be especially relevant in today's knowledge environment.

A final leadership theory of relevance in turbulent environments is complexity leadership (Uhl-Bien and Marion 2008), which has developed to address today's post-industrial, knowledge society. It stresses that leadership does not involve only individual influencing acts, but involves the complex, interacting forces of numerous agents, that is, leaders *and* followers, resulting on leadership emerging from the complexity of the organizational context (Lichtenstein et al. 2006). Such leadership may come from formal leaders or followers. Thus, any group member can be a leader as responsibility is forced down to the group, encouraging freeing the formal leader to attend to the more strategic, administrative and enabling activities. The 'adaptive' leadership activities are self-organised by the group, emerging non-linearly from the interactions amongst the group members. Since they are not one-sided or authority based, they can be seen to be bottom-up (Uhl-Bien et al. 2007). According to Avolio et al. (2009) insufficient research has been conducted into complexity leadership.

Followership

Without followers, leadership as traditionally defined would not exist. Thus followership theory developed, based mainly on the work of Kelley (1988, in Dixon 2009), stressing the influence of followers on leaders. Chaleff (2003, in Dixon 2009) stressed the need for a new leader-follower theory for the current complex environment. According to authors such as Sronce and

Table 1: Suggested leadership approaches and roles

Stacey 1991	*Keene 2000*	*Carlisle and McMillan 2006*
Create the environment that enables people to learn.	Listen, communicate and participate in dialogue	Increase employee involvement in decision-making
	Co-operate, rather than compete	Simplify rules and procedures
Encourage and make time for discussion and reflection through informal work groups and open-ended discussions.	Welcome surprise, rather than viewing it negatively	Keep rules and control to a minimum in complex/turbulent environments
	Let go of control and direction	
Using different forms of power, namely, from 'authority', to 'loose influence', to 'pressure', and back again.	Create a vision and harness staff creativity to make the vision a reality	Give staff the encouragement and scope to self-organise into cells/groups
	Get staff to accept responsibility	Encourage networking among staff

Arendt (2009) and Avolio et al. (2009) followers influence the effectiveness of leaders. In fact, followers can decide whether to follow a leader, and, in this way, can almost choose who their leader is (Ahlquist and Levi 2010). Followers are attracted to someone who is seen by other followers as their leader. Kellerman (2008) has shown how followers can override a leader's power, making it ineffective. Thus leadership can be seen as a system co-evolving with followership (Ancona et al. 2011).

Strategic Vision

A clear understanding of the business is vital for delegating responsibility and decisions. Without it, self-organising, bottom-up development is almost impossible. Such understanding is created by 'visions', such as Baskin's (1998a: 63) "identity" or Chakravarthy's (1997) guiding philosophy. (Although a lack of an identity can lead to a "chaotic, non-adaptive system", Schneider and Somers (2006: 358) also warn against too strong an identity, which can lead to a "frozen, non-adaptive system"). These visions are communicated through dialogue (Barnett 1996), strategic conversation (Manning 2001) and continuous open discussion (Chattel 1995), approaches that encourage emergence. Such broad-based discussion should involve all staff (Senge 1990) and not just a select few (Chattell 1995).

'Simple rules', which are often stated as corporate visions, ensure that individuals operate independently within the limitations imposed by the vision (in chaos terms, a strange attractor) (Wheatley 1993: 129). Having a vision shared throughout the company enables crises or opportunities to be quickly handled as everyone knows how to react (Kelly and Allison 1999). Regimented control is not required, as the attractor will shape employees' actions. However, this is difficult for management, because where the system (business) will go cannot be predicted, so managers feel the need to take control. Managing from a chaos viewpoint means trusting the strange attractor and standing back to allow self-control. Wilkinson and Young (1998) agree, believing that imposing managerial will is one of the reasons for company failures. Therefore visions should set the boundaries of action, but should not determine how, when and what actions should be taken.

Information and Communications

For local control and decentralised decision-making, information should be available to staff who require it. Openness and truthfulness are essential for effective self-organisation (Baskin 1998a). Informal communication occurs during drinks after work, around the water cooler, in the tearoom, etc. Therefore, to encourage self-organisation, companies should encourage informal gatherings within the workplace: encourage the use of an Intranet, let staff use the boardroom or fund a get together. Forums, such as lunchtime dialogues, identify new and unusual ideas, which formal communications do not identify (Bechtold 1997). But they must remain informal, decentralised and unmanaged to ensure they are not seen as centrally controlled, management functions. This is supported by the work of Oh et al. (2004), who found that bridging conduits, as opposed to closure conduits, encourage the spread of timely, heterogeneous information between staff members, and especially with other groups' formal leaders, who would not otherwise communicate with each other. Such bridging connections cross departmental boundaries within an organization, forming Granovetter's (1985) weak ties.

Local intelligence is essential to cope with a complex/turbulent environment. The executive committee is not the best place to "smell the future" (Weeks 2007: 303), because weak environmental signals must be identified early for self-organisation to react to threats and opportunities. This can only be achieved by spreading sense making and early detection widely amongst staff (Costanza and Littlejohn 2006).

Organic Management

'Organic management' is very different to 'mechanistic management'. Fradette and Michaud (1998: 116) propose non-traditional management actions to create "self-adapting, self-renewing companies that are organised for instant action". Their 'organic management' involves leaders who "are designers, teachers and stewards," rather than "bosses who call the shots" (Senge 1990: 9). They create the conditions in which individuals are encouraged to respond spontaneously to the changing environment (Fitzgerald and van Eijnatten 1998), there-

by enabling "people to 'self-organise' and attack opportunities as they appear" (Baskin 1998a: 2). To create the correct conditions for a firm to flourish in a turbulent environment the 'organic' manager's job is creating an environment in which workers can push the company to co-evolve with its markets (Baskin 1998a: 153).

The manager's main tasks are:

- to create awareness of the turbulent market and of what must be done to co-evolve,
- to increase the flow of information to learn about and better satisfy customers' needs,
- to create trust to enable workers to cooperate better.

Thus, the manager becomes a "facilitator of organisational learning…fostering…continuous experimentation" (Chattell 1995: 150). This approach moves beyond reaction, leveraging relationships to create a new environment and thereby creating maximum innovativeness and unexpected opportunities.

'Chaos' type activities are also necessary for control in turbulent environments. Fitzgerald and van Eijnatten (1998: 269) suggest that the most effective method of controlling in a turbulent environment is to "let go", allowing the system to self-control. The main management task is stewardship, which involves the creation of conditions in which individuals are encouraged to spontaneously respond to the changing environment. Those close to the action are more sensitive to the environmental forces. In order to increase 'local control', companies delegate decision-making to the lower levels close to the action, or as Carney (2007: 178) says, "down into the 'micro' practices … of each autonomous worker who carries out 'self-guided leadership'". This is not inconsistent with the finding that charismatic leadership is more effective in uncertain environments (Waldman et al. 2001). Charismatic leadership may in fact encourage and give staff the confidence to engage in self-control and self-organisation.

From the literature it can be summarised that leadership in a complex/turbulent environment should be organic, with the leader concentrating on creating an internal environment conducive to co-evolution and self-organisation. Decision-making should be decentralised, learning and experimentation should be facilitated, and change encouraged. The leader must provide the information to support this approach and must encourage informal communications and information gathering. This leadership approach can be termed self-organising leadership. Although this might appear to be a contradiction in terms, the implication is that the group's direction, decisions, instructions, evaluation, etc. comes from the group. In other words, the leader leads with the 'permission' of the group and according to goals agreed on by the group. However, the question is whether this, in fact, works in practice. Therefore the following research question was posed:

"How does self-organising leadership operate in a complex and turbulent environment?"

A corollary question was also set, namely:

"What type of leadership is most suited for a simple and stable environment?"

Research Objectives

Based on the above research questions, the objective of the empirical study was to investigate a self-organising leadership approach and its applicability to success in a turbulent industry. In other words, is self-organising leadership more effective in a turbulent environment? To answer these questions four propositions were developed:

P1: a more successful company in a complex/turbulent industry uses self-organising leadership.

P2: in a complex/turbulent industry, a less successful company uses traditional management.

P3: a more successful company in a simple/stable industry uses traditional management.

P4: in a simple/stable environment, a less successful company uses self-organising leadership.

METHODS

Research Design

Due to the limited research based on complexity theory in this field, especially regarding complexity leadership, a qualitative, exploratory approach, namely the case study, was chosen. This is further supported by Carney's (2007: 179) finding that "empirical studies show little consistence or causality between 'leadership' and context/practice". The research was conducted in South Africa, where all components of the

external environment (social, legal, economic, political, technological) are turbulent, making it a good 'laboratory' (Mason 2004, 2008).

Sampling

Two companies each in a simple/stable industry and a complex/turbulent industry were selected using maximal variation sampling. The sample was selected through a two-stage process:

- First the most complex/turbulent and simple/stable industries were selected via a questionnaire posted to experts - industry analysts and management consultants. The results highlighted information technology as most complex/turbulent, and packaging as most simple/stable.
- Within each industry, more successful and less successful companies were chosen, using a Delphi process with panels of industry experts - consultants, journalists and buyers. They were asked to subjectively or qualitatively consider "success" in terms of the companies' performance over the previous three to five years, with more successful firms being those that have achieved consistent growth in sales, profits and assets, that have increased market share, or that have adapted well to their changing environment, while less successful firms were those that performed poorly on these factors. The experts nominated CA as more successful and CB as less successful in the information technology industry, and PA as more successful and PB as less successful in the packaging industry. To obtain co-operation from the companies, anonymity was promised, which is why the artificial names of CA, CB, PA and PB were used. Table 2 provides a profile of the four companies.

Data Collection

Using an interview guide, data was collected from 31 directors, managers and staff via depth interviews, which were audiotape recorded. Notes were taken and company documents analysed (for example, annual reports, brochures, web pages, advertisements, minutes, manuals). To obtain the companies' co-operation anonymity was necessary.

Analysis

Analysis was via thematic coding, using NVIVO software, to deconstruct and reconstruct the transcripts, categorising findings according to the two perspectives being studied (stable/turbulent and more/less successful). Manual content analysis summarised and reduced the field notes and documents to generalisations for comparison with the research propositions. These analyses were then used to compare the two companies in each industry against each other and against the proposals, and to compare the companies similar in success to each other and against the proposals.

RESULTS

The results are summarised for each of the leadership issues in Table 3, together with interview extracts as supporting evidence. Table 4 reflects the results summarised by company, also showing the type of leadership that the results imply. From Table 4 conclusions about the propositions can be drawn.

Complex/Turbulent Environment

In this environment, both companies (CA and CB) have a vision that indicates the nature of their companies. These visions are different, with

Table 2: Profile of sample companies

Company	*Characteristics*
CA	Large company listed on stock exchange, operates nationally, regionally and internationally. Emphasis is on hardware and software.
CB	Medium to large company listed on stock exchange, operates nationally, regionally and to a limited extent, internationally. Emphasis is on software.
PA	Medium sized subsidiary of a packaging group, trading nationally – focussing on flexible packaging, especially for the food and beverage industry.
PB	Long established, family business, trading nationally – focussing on a wide range of packaging applications, especially pharmaceutical.

Table 3: Results summary for complex/turbulent versus simple/stable environment

Issue	*Complex/turbulent environment*			*Simple/stable environment*		
	Firm	*Summary*	*Evidence*	*Firm*	*Summary*	*Evidence*
Vision	CA	Leaders, aggressive, innovation, entrepreneurial	"shareholder or results driven", "make your target", "desire to shake up the market", "foster innovation and entrepreneurial thinking"	PA	Leaders, innovative, dynamic, unique	"don't just do more of the same", "renowned for innovation"
	CB	Commitment to staff, trend followers.	"…providing opportunities staff", "innovation through people… enthusiasm, participation, responsibility"	PB	Family business, history, quality, making money	"history and ancestry of the company", "chasing turnover",
Management Style	CA	Open, democratic, independent and entrepreneurial	"…get the guys at the coalface to try and come up with innovations", "I am not the dictatorial 'you will' type boss"	PA	Open and transparent	"open way about things", "company trusts people…if you have a view …you can speak ", "no written job descriptions"
	CB	Open, democratic,	"… everyone can take routine decisions", "they are mature, they are rich in knowledge. "	PB	Authoritarian, bureaucratic and family oriented style	"regimental", "weren't allowed to think", "nobody else will make decision", "formal job descriptions"
Control	CA	Self-control, autonomy, know what is required.	"… rely on self-control, we don't go around checking up".	PA	Self-discipline and control	"no policing, it is self-policing", "no one controls what I do"
	CB	Self-control, autonomy,	"…nobody checked on you", "try not to control people… encourage independence". *But surprises not liked* – want to be "in control".	PB	Little autonomy or self-control	"there should be checking", staff "managed, either through managers or through policy manuals and systems"
Relationships	CA	Informal, positive	"everybody is co-operative", "work well together", "… couldn't happen if …sections didn't work together"	PA	Open, transparent, inclusive	"if the person sweeping the floor wants to know about the budget for the month we tell them"
	CB	Informal, positive, flat structure	"everyone gets treated the same… we respect every individual", "no hierarchy and no titles"	PB	Formality, with little openness, autocratic	"make sure that people…do what they are told", "cutthroat relations"

Table 3: Contd...

Issue	*Complex/turbulent environment*			*Simple/stable environment*		
	Firm	*Summary*	*Evidence*	*Firm*	*Summary*	*Evidence*
Communication	CA	Informal, open and transparent	"corridor talk", "discussions at lunch", "employee involvement, sharing of information", "not to be frightened of shouting from the coalface"	PA	Lots of informal communication	"have tea in the canteen … discuss a whole lot of stuff …", "no pigeonholes... step into other peoples territories"
	CB	Informal, open and transparent	"discussions over coffee", "sessions for all staff... financial forecasts, sales targets and report	PB	Formal - informal	all the costs, the salaries" discouraged "not really encouraged cause of... downtime, "people don't know what is going on", "eliminate informal instructions"
Planning	CA	Emerges from environment	"the way it [planning] evolves is not cast in concrete"	PA	Strategies focussed, not written. Projects planned.	"make decisions there and then", "off the cuff …not reckless", "not random…do homework"
	CB	Careful, long-term planning	"planning is thought out … sometimes very cautious"	PB	Budgeting and production planning, no strategy	"move…forced on us", "…we follow it…blunder along", "reacted prematurely without planning"
Decision-making	CA	Both centralised and decentralised	"is a macro strategy…given to us from an executive", but at lower levels "make up your mind, …go for it, but just take the responsibility for it as well"	PA	Democratic, lower levels take decisions relevant to their areas	"want guys who can think for themselves", "operator would make decision", "staff deciding on shift changes…whether to rehire …worker"
	CB	Decentralised, but group oriented	"I can't make that decision on my own", "they would get together... caucus and make a decision"	PB	Rests mostly with managers or 'experts'	"(go to)management … for decision", "(MD) want right decision so I want to know everything"
Policies and Proce-dures	CA	Few, some basic principles	"staff know what to do…get on with it", but "strict policies and procedures related to financial control"	PA	Efficiency policies, but informal and verbal	"there are no rules. There is no formal procedure"
	CB	Few, some basic principles	Lack of "rules", "people know what to do because of (company's) basic principles"	PB	Formal system, with manuals including job descriptions	"no system for bypassing procedure", "everything … in the policy manual with detailed work instructions", "procedures for compliance"

Table 4: Results summary with leadership styles

Complex/turbulent environment				*Simple/stable environment*			
Firm	*Issue*	*Summary*	*Style*	*Firm*	*Issue*	*Summary*	*Style*
CA	*Vision*	Aggressive, innovative, leaders, entrepreneurs	SO	*PA*	*Vision*	Leaders, innovative, dynamic, unique	SO
	Manage-ment style	Open, democratic, and entrepreneurial	SO		*Manage-ment style*	Open and transparent	SO
	Control	Autonomy, self-control	SO		*Control*	Self-discipline and self-control	SO
	Relationships	Informal, positive	SO		*Relationships*	Open, transparent, inclusive	SO
	Communication	Informal, open and transparent	SO		*Communication*	Lots of informal communication	SO
	Planning	Emerges from environment	SO		*Planning*	Strategies focussed, not written. Projects planned.	SO
	Decision-making	Both centralised and decentralised	SO/ Trad		*Decision-making*	Democratic, lower levels decide re their areas	SO
	Policies and procedures	Few, some basic principles	SO		*Policies and procedures*	Efficiency policies, but informal and verbal	SO
CB	*Vision*	Commitment to staff, trend followers.	Trad	*PB*	*Vision*	Family business, history, quality, making money	Trad
	Management style	Open, democratic,	SO		*Management style*	Authoritarian, bureaucra-tic, family oriented style	Trad
	Control	Self-control, autonomy,	SO		*Control*	Little autonomy or self-control	Trad
	Relationships	Informal, positive, flat structure	SO		*Relationships*	Formality, with little openness, autocratic	Trad
	Communication	Informal, open and transparent	SO		*Communication*	Formal - informal discouraged	Trad
	Planning	Careful, long-term planning	Trad		*Planning*	Budgeting and production planning, no strategy	Trad
	Decision-making	Decentralised, but group oriented	SO		*Decision-making*	Rests mostly with managers or 'experts'	Trad
	Policies and procedures	Few, some basic principles	SO		*Policies and procedures*	Formal system, manuals including job descriptions	Trad

Key: SO = Self-organising leadership Trad = Traditional leadership

CA's reflecting an aggressive leader, whereas CB's reflects a paternalistic, people-supporting, follower. CA's management style is open and democratic, involving bottom-up planning and self-control. Long-term decisions are centralised but day-to-day decisions are decentralised. Staff and management relationships are informal, with open communications and few formal policies and procedures. Proposition 1 is therefore supported: the more successful company uses self-organising leadership.

CB, despite a different vision, uses similar leadership activities. They too have an open management style, use self-control, have informal relationships and communication, mostly decentralised decision-making and few policies and procedures. The one difference is that their planning is more formal. Therefore Proposition 2 cannot be supported, as CB does not use bureaucratic management.

Simple/Stable Environment

In this environment, the two companies (PA and PB) have different visions. PA is a dynamic leader, whereas PB stresses quality and its family history. PA has an open and transparent management style with clear, but informal, planning, and self-control. Relationships are open, transparent and inclusive, with informal communication. Decision-making is decentralised and democratic and there are no formal policies and procedures. Thus, they use self-organising leadership, which is contrary to what was anticipated. Therefore Proposition 3 cannot be supported.

PB has a bureaucratic management style, with little self-control – managers are 'policemen'. Relationships and communications are formal with little openness. Decision-making is centralised with top management, and where staff are required to take decisions, these are determined by written policies and procedures. PB clearly uses bureaucratic management, and therefore, Proposition 4 cannot be supported.

DISCUSSION

Tables 3 and 4 show that the results of this study were not as forecast in the propositions. There could be a number of different reasons for these anomalies – these possible reasons are discussed below.

In the complex/turbulent environment, both companies applied a self-organising leadership approach, as expected of a more successful company (CA), but not as expected of a less successful company (CB). The similarity in leadership approaches could indicate that the relationship between environment and leadership has no impact on success. Other possibilities are that CA's success is due to better implementation of the leadership approaches, or that CB applied self-organising leadership in an environment they do not truly see as complex/turbulent - this contradiction could cause weaknesses in other operational areas, and therefore reduced success. Furthermore, self-organising leadership may be in conflict with CB's paternalistic and people-oriented philosophy, leading to lip-service being paid to self-organising management, with staff relying on direction and control from above.

In the simple/stable environment, the findings were the reverse of what was anticipated, that is, PA behaved like a less successful company, while PB behaved like a more successful company. This could be because the South African packaging industry may, in fact, be complex/turbulent and so require self-organising leadership. Alternatively, self-organising leadership may be superior in any environment, thus explaining PA's superior performance. A further possible explanation could be that self-organising leadership is 'fashionable'. Many of the leadership issues have been discussed in the management literature, and PA may have adopted them, regardless of their environment. PB, on the other hand, is inward looking and has retained what worked in the past - bureaucratic management. In summary, the environment does not necessarily determine the leadership approach in a simple/stable environment and, therefore, may not be influential in determining success.

These conclusions imply that self-organising leadership may be superior, regardless of environment. This is implied by the fact that the two successful companies (CA and PA) both applied this approach, while CB tried to implement it, but were unsuccessful (partly due to conflict between some leadership issues and their philosophy/vision) and PB did not attempt it at all, remaining wedded to bureaucratic management. There may, of course, be other factors influencing the choice of leadership style, in-

cluding the impact of management fashions. This caveat is discussed further under Limitations. Of course, if the entire South African environment were complex/turbulent, then Propositions 1 and 3 would be supported, as those companies that adopted self-organising leadership were more successful and those that did not were less successful. However, if this is true, then this study says nothing about the leadership style needed in a simple/stable environment.

Implications for Managers

Since the findings seem to indicate that self-organising leadership may lead to greater success, and may be more superior in complex/turbulent environments, the key issue for managers is to accept that actions cannot be centrally directed and controlled. A different way of managing is needed - a clear vision of what the company is and wishes to become, openly and continuously communicated with staff. Decision-making should be decentralised to the hierarchical level most knowledgeable about the decision situation, and managers must 'let go', trusting and allowing staff to self-control their activities in line with the company vision or philosophy. Staff should be free to 'sense' their immediate environment, and through open and transparent communications, develop applicable responses to the identified threats and opportunities. In the words of Wilkinson and Young (2005: 386), managers and staff are "equal partners in the construction of robust, flexible behaviours", or as Meindl (1987, in Küpers 2007: 195) says "leadership and its consequences (are) largely constructed by followers" In other words, leadership actions should be determined by what the led are doing or want to do, and therefore the humorous saying *'follow me, I'm right behind you'* is a good representation of what has been called self-organising management in this paper.

This approach may be a step too far for many managers. Indeed, even in leadership research, followers have tended to be neglected (Küpers 2007: 195). However, for those who see this approach as too extreme, it should be remembered that the leader still retains ultimate responsibility and therefore has the right to suggest changes, or in an extreme situation, to veto actions. Although staff and leader should be "equal partners", the leader may have wider knowledge about the firm and the business environment. However, in terms of self-organising leadership, such wider knowledge should be disseminated throughout the firm anyway, thereby minimising the need for authoritarian action.

CONCLUSION

This study set out to answer the question *"How does self-organising leadership operate in a complex and turbulent environment?"* From the findings discussed above it can be concluded that businesses in turbulent environments do tend to adopt the self organising leadership style as suggested by the complexity theory literature, namely:

An aggressive, innovative, entrepreneurial vision, a democratic management style, considerable use of autonomous self-control and lots of informal relationships. Communication is open and informal, and planning tends to follow from environmental trends, with few formal policies and procedures. Decision-making is located throughout the business, being both centralised and decentralised.

A corollary question was also set, namely, *"What type of leadership is most suited for a simple and stable environment?"* It was interesting to note that the more successful firm in this environment also mostly used the self-organising style, but that the less successful firm used the more traditional authoritarian, bureaucratic, formal style with decisions taken by 'experts' and managers, and considerable use being made of budgets, formal plans and policies and procedures. From this finding it can be concluded that, even in a simple/stable environment, the self-organising style of leadership is also more suitable.

RECOMMENDATIONS

Although the complexity perspective helps to understand leadership in complex/turbulent environments, there is still much to be learnt. Further research using complexity theory may improve understanding of relationships between leadership and the environment. Techniques such as longitudinal research, simulations or computer modelling, could be helpful. Specific areas of further study should include:

- Research in other environments (for example, different industries or countries) could test whether these findings are generalis-

able to other South African firms, and in other countries.

- An in-depth, possibly mixed method, study of one industry could more clearly differentiate the leadership behaviour of more successful from less successful companies. Such a study could attempt to identify the frequency and prevalence of self-organising leadership activities in a larger range of companies.
- Measurement of environmental complexity/turbulence could resolve whether all South African industries are complex/turbulent. Such measurements would be predominantly subjective and could, amongst others, involve a continuum of complexity from simple to complex (including number of external variables impacting on the organisation, whether organisational interactions are routine or non-routine and whether they are interconnected or remote) and a turbulence continuum from static to dynamic (for example, degree to which events are novel or familiar and the frequency of discontinuous changes).
- Research in a country without extreme complexity/turbulence may better identify the leadership activities in simple/stable environments.

It is accepted that the recommended research projects will be very difficult to conduct owing to measurement problems, confidentiality issues, uncertainty as to what specifically to observe and measure and the problem of confounding and intervening variables. Nevertheless, the likelihood that a complexity theory approach is able to unlock greater knowledge about leadership and its influence on success makes taking on these challenges very important and worthwhile.

LIMITATIONS

Due to this being an exploratory study, the findings may not be representative of all companies in the selected industries, nor in other, similar, environments. However, the objective was to investigate leadership in the applicable environments, and not to generalise to other industries or environments. The research has provided some understanding of the role of self-organising leadership in a complex/turbulent environment. However, if extrapolation to other industries or environments is attempted, it should be done cautiously.

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