Sustainability of the Self – Harnessing Natural Cycles for Leadership Development

Structured Abstract

Purpose

The purpose of this paper is to encourage discussion and debate around the idea that in order for deep organisational and societal change to occur, leaders need to change and heal themselves by practicing sustainability of the self and paying attention to natural cycles.

Design/methodology/approach

The paper reviews contemporary leadership models in relation to sustainability and wellbeing and combines these with an examination of the role of natural and biological cycles in cognition and decision making.

Findings

The paper finds that there is a relationship between natural and biological cycles and leadership performance suggesting that there is a need for leaders to better understand their own cycles and any corresponding impacts.

Originality/value

The paper contributes an understanding as to the influences that natural and biological cycles have on leaders emotions, cognition and performance and offers a model that aligns cycles of leadership with the seasons and cycles of the natural world.

Keywords: Leadership, Sustainability, Natural Cycles

Introduction

Recent events such as the credit and banking crisis alongside general global corporate social responsibility and sustainability concerns, have led to renewed debate as to the role business plays in society and the ability of leaders of organisations to behave ethically, responsibly and for the common good. Many are calling for a new approach from the people who manage and run businesses away from the profit orientated exploitative business practices of the past, towards a new model of 'responsible management' (Baumgartner, 2014; Engert, Rauter, & Baumgartner, 2016). As the world changes, business leaders face new demands to deal with the planet and environment more sustainably, to deal with the numerous societies their organisations operate in more equitably and with greater cultural understanding, and to be more open, transparent and responsible with respect to their stakeholders (Barkemeyer, Holt, Preuss, & Tsang, 2014). After all it can be said that the role of business is to create value, bring wealth, improve livelihoods and change the world (Durand & Boarini, 2016). Business provides society with a powerful tool through which we transform the world in which we live either positively or negatively (Dyllick & Hockerts, 2002). In this respect it follows that business leaders and managers as the stewards of businesses organisations are central to efforts to develop responsible business practices.It is important then to examine the role of leadership and management practices in promoting sustainability and wellbeing.

It had been suggested that developing management and leadership capabilities to support the commitment to sustainable development will go a long way in improving business contribution to society (Gloet, 2006). This is due to the fact that not only do business processes and practices need to change but so too the vision and management approaches that underpin modern organisations. Numerous studies have demonstrated that sustainability actions only take place where there is an active leader and/or manager within a company that champions this approach

(Epstein & Buhovac, 2014; Galpin & Whittington, 2012; Székely & Knirsch, 2005). Alongside this business leaders and managers have a central role to play in wellbeing. Many studies have indicated that leadership style influences both the leaders own wellbeing, but also that of their followers (see for example Ilies, Morgeson, & Nahrgang, 2005/6). From a broader perspective it is understood that business organisations can have an impact on the wellbeing of all of their stakeholders and the societies in which they operate (Giacalone & Promislo, 2014; Gibbs & Burnett, 2016). In this respect the discrete leadership and management practices within organisations have a bearing on wellbeing more generally (Garriga, 2014; Gioia, 2003).

When considering leadership for sustainability, it may be realised that it is about imagining a better future unconstrained by organisational or geographical boundaries (Parkin, 2010). Traditionally though the nature of traditional western business driven organisations, and the defined roles of their leaders, has precluded the holistic integration of environment, economy and society (Reeves-Ellington, 1998). What the world needs are leaders who lead with purpose, values, and integrity, build enduring organizations, motivate employees to provide excellent customer service, and create long-term value for the societies in which they operate (B. George, 2003). However, organisations by their very nature are difficult to change. The process of 'organisation' is to formalise activities, systems and processes - to make behavior predictable and result in efficiencies. However such routines can stagnate with time as an organization's external realities change (Quinn, 1996). This is the position that many organisations now find themselves in with relation to sustainability and social responsibility issues. Business can continue with the status quo and remain part of the problem or can adapt and develop into institutions that promote wellbeing and sustainability. In order to achieve this we need to pursue deep change and realign our organisational and personal paradigms with our surrounding environment (Quinn, 1996).

This paper is based on two fundamental premises. Firstly business and organisations are in themselves social constructs and therefore we cannot decouple the actions of our business and organisations from those of ourselves (Beu & Ronald Buckley, 2001). In this respect a shift to

more responsible business and management practices begins with a shift within ourselves, within the managers and leaders that work within them on a daily basis. Organisational change begins with change amongst the people that manage, lead and work within them (Easterby-Smith, Araujo, & Burgoyne, 1999). Secondly business and organisations, and the people that manage and lead them, do not operate in a vacuum but are reliant on, and influenced by the natural environment that sustains all of life on Earth (Nattrass & Altomare, 2013). The natural lunar, seasonal and hormonal and biological cycles that surround us influence our moods, and our emotions, and may in turn contribute to our decision making capabilities and judgement (Dane & Pratt, 2007). Businesses, managers and leaders should recognise this fact and attempt to align their professional practices with such cycles.

The purpose of this paper is to develop a discussion around the notion that in order for deep organisational and societal change to occur, leaders need to change and heal themselves by practising sustainability of the self and paying attention to their biological and relationships to natural cycles. In doing so it seeks to address the following research questions:

- What should the model of contemporary management and leadership for sustainability look like?

- What can leaders learn from studying the natural cycles that surround us in our environments?

- How can leaders align their practices with these natural cycles?

- What does the natural cycle of leadership look like?

Leadership for Sustainability

Increasingly there is a consistent call for strong and courageous leadership to drive the sustainability agenda and develop actionable solutions to sustainability challenges (Broman et al., 2014; Louise Metcalf & Benn, 2013; Senge, Smith, Kruschwitz, Laur, & Schley, 2009). Much of the rhetoric around what should be done to solve sustainability challenges suggests that having a great leader seems to be at the root of inspiring, enabling and delivering sustainability. This then raises the question as to what constitutes effective leadership and an effective leader in general. Such a discussion is outside the scope of this paper however the leadership literature tends to focus on a the key behaviours that 'successful' or 'effective' leaders exhibit (see G. Yukl, 2012 for an overview). There are many ways to measure leadership effectiveness (Moawad & Jones, 2015) but from a sustainability perspective effective leadership is attained through the development of leadership qualities that meet the economic, environmental, and social needs of the present while preparing to meet the challenges of the future (Akins, Bright, Brunson, & Wortham, 2013). At the macro level studies have indicated that leadership is a key factor in sustainable development at the regional scale (Collinge & Gibney, 2010; Horlings & Padt, 2013). Leadership for sustainable development is about dealing with multiple visions and attempting to align people around a shared vision. Therefore, it is not about realising individual ego driven goals, but about adapting to the higher goals of societal goals (Horlings & Padt, 2013). In tandem with this an increasing number of empirical studies are seeking to clarify the linkages between the roles of leaders and leadership in the development and implementation of sustainable and responsible business strategy (Klettner, Clarke, & Boersma, 2013; Perks & May, 2015). For example Doppelt (2009) has explored how leadership can transform culture and resistance to change resulting in improvements to sustainability outcomes.

It is becoming understood then that leadership plays a key role in determining success or failure of sustainability initiatives in organisations and sustainable development more generally (Dartey-Baah, 2014; Sharma, Sharma, & Devi, 2009). Despite this there is in fact little specifically focussed research on the intersection of sustainability and leadership (Brown, 2011; Galpin & Whittington, 2012; Velsor, 2009). In fact the search for an overarching definition as to what

constitutes ‘leadership’ continues, however many agree that leadership is a practical skill that regards the ability of an individual to lead or guide other individuals, teams or entire organisations in the pursuit of an specific endeavor. Whilst many may perceive a leader to be a person in a position of authority, from a sustainability perspective, the definition of leadership is extended to anyone who seeks to contribute to sustainable change regardless of their role and position. With this in mind leaders who adopt this expanded view can engage others using different assumptions as to how people interact to create meaningful change (Ferdig, 2007).

Leadership can be defined as a process of social influence in which a person can enlist the aid and support of others in the accomplishment of a common task (Chemers, 2014). Leaders set direction, build a vision that can inspire and motivate others and build and coach a team that can effectively achieve this vision (Burns, 1978; Tyree, 1998). Leadership brings together the skills needed to achieve these things and create value for an organisation or bring about change in a system. Traditionally in an organisation the role of a leader has been to define the organisational goal, formulate plans and organise people to achieve these goals through the execution of plans. They would need to consider an organisation's stakeholders, decide what is best for the individuals within a team and the group as a whole and be able to make decisions and prioritise one course of action over another. Business organisations do not operate in a vacuum and are dependent on external environmental factors (Aragon-Correa & Sharma, 2003; Miller, 1988). Similarly organisations are dependent on other businesses through their supply chain, outsourced services, those that support employee activities such as transportation or catering and for partnering opportunities. They are also influenced by competitor activities, NGO’s and other civil organisations. Leaders and managers then would also need to understand the way in which the organisations interacts with other organisations and the environment within which it operates.

Leadership for sustainability differs from other forms of leadership in that the nature of human interaction with the natural environment is highly complex. Lueneburger and Goleman (2010) identify three distinct stages necessary to deliver sustainability initiatives; making the case for

change, translating vision into action and expanding boundaries. They suggest that each stage requires different organisational capabilities and leadership competencies and as a result sustainability initiatives cannot usually be driven through an organisation in the same way as other changes or projects (Lueneburger & Goleman, 2010). Building on this Tideman et al (2013) argue that sustainable leadership is distinct from other types of leadership and demands a broader skill set from leaders and managers. On top of this the challenges associated with dealing with a wider range of stakeholders than identified in more traditional business environs requires stronger and more highly developed leadership qualities. Achieving sustainability is a complex problem for all actors in the system whether they be organisations, businesses, managers and leaders or people in general (Beddoe et al., 2009). Whilst it could be perceived that leadership for sustainability is an ethical issue as to what it the 'right' thing to do in a given situation bearing in mind the needs of society and the wider environment, Metcalf and Benn (2012) suggest that sustainability is less about moral decision making and more about complex problem solving. The nature and scale of the problem can discourage leaders who may feel unable or unprepared to explore the full complexity of an organisation's role and impact within its wider environment (Louise Metcalf & Benn, 2013), however leaders of organisations must recognise that organisations operate in a wider complex adaptive system (L. Metcalf & Benn, 2012). There is then a need for unusual leaders and leadership systems to deal with the complex nature of sustainability itself (Louise Metcalf & Benn, 2013).

Leadership style also plays a part on determining approaches to sustainable development. A leader's style provides direction, motivates people and determines the success of implementing plans (Lewin, Lippitt, & White, 1939). Leadership style is a result of the combined philosophy, personality and experience of the leader and whilst different situations call for different leadership styles, sustainability leaders often exhibit more participative, democratic or shared styles of leadership. The democratic leadership style calls on leaders to share the decision making abilities with group members by promoting the interests of the group members and practicing social quality (Bolden, 2011). People listen and take note of sustainability leaders not just because of

what they say, but because of who they are. As a result a sustainability leader leads ‘with’ other than ‘over’ others and accounts for the long-term viability of complex, interconnected living systems (Ferdig, 2007).

Leadership Development

When considering leadership style it is equally important to recognise the process of becoming a leader and of leadership development in general. Leadership development describes the process of developing individuals or groups of people to ‘become’ leaders, however this is more than simply deciding on which leadership style or theory to apply (Day, Fleenor, Atwater, Sturm, & McKee, 2014). Despite the long held assumption that experience plays an important role in developing effective leadership, research has shown that there is very little empirical evidence to support this assumption (Day, 2010). In reality leadership involves a complex interaction between individuals and the social and organisational environments within which they operate (Day, 2000). In reality then leadership development is a dynamic processes which involves multiple interactions that persist over time, starting at a young age and involving the development and application of skills, wisdom and creativity and is shaped by factors such as personality and relationships with others (Day et al., 2014; Sternberg, 2008/6). It is this greater understanding of the journey which individuals take on the path toward leadership that has inspired recent studies on leadership development to focus on a relational, social and situated perspective through the process of ‘becoming’ (Cunliffe, 2009; Edwards, Elliott, Iszatt-White, & Schedlitzki, 2013; Kempster & Stewart, 2010).

The literature on ‘becoming’ recognises that there is a need to appreciate the aspects of emotion in the journey of becoming a leader and in being a leader (Edwards et al., 2013). In parallel with this it has been argued that approaches to leadership should reconnect with context and community enabling a more critical, inclusive and creative perspective of leadership development (Edwards, 2011; Edwards et al., 2013). A critical strand of the leadership literature is seeking to

demonstrate that leadership development should avoid suggesting that leadership is a fixed identity or role and encourage an awareness of the multiple roles (leader, follower and both) that individuals find themselves playing at different times (Ford, 2010). In parallel to this it has been shown that when developing a leadership style, leaders tend to rely on their own sense making which are driven by their personal needs (Thompson & Cavaleri, 2010). In this sense there is a bias to the self, a bias which has been acknowledged in Keller's leader-follower model (Keller, 2003) where sense making of what makes a leader is shown to be influenced by childhood attachment of the follower (Day et al., 2014). It is then important that leaders develop a greater awareness of the roles that they are playing, the behaviours they are exhibiting and more importantly why they are behaving in a specific way. In order to to this they need to develop the tools and techniques necessary to become self aware (Turner & Mavin, 2014).

From a sustainable development perspective it should be considered that many sustainability issues are inherently multilevel and longitudinal in nature, however it has also been noted that the process of becoming a leader is in itself a multilevel and longitudinal journey (Day, 2010), In addition to this leaders with a more complex sense making system have access to enhanced and new capacities that others do not, strengthening their ability to respond to the sophisticated challenges such as those posed by sustainability issues (Rooke & Torbet, 1998; Torbert, 2004). As a result the complex and multifaceted challenges that accompany sustainability issues require leaders who are able to adopt a self aware, critical leadership style which may require a rethink on the nature of leadership (Ferdig, 2007) and the development of alternative models of leadership that promote sustainable development. The question is how can we assist leaders by providing insight, tools and techniques that may be used to develop approaches and solutions to the complex and multifaceted sustainability problems faced by business and society.

Leadership models for Sustainable Development

Leadership styles, theories and models have been proposed, debated, evaluated and developed for centuries and thousands of books and articles are available on leadership research. It is not

the intention to critique every existing model or theory here however Figure 1 sets out some of the steps in the evolution of leadership theory from the 1950s to present day.

Insert Figure 1 Here.

Some authors have made the distinction between ‘old’ paradigm leadership models and ‘new’ models. Old paradigm models define leadership as a process that involves influencing others and occurs within a group context driven through goal attainment (Northouse, 2015). New paradigm models often centre on the relationships between leaders and ‘followers’.This is best articulated in the literature on transformational leadership developed initially by Burns (1978) who defines it as a process in which ‘leaders and followers raise one another to higher levels of morality and motivation’ (p.20). This definition was built upon by Bass (1985) who made the distinction between ‘transactional leadership’ and ‘transformational leadership’. A key ability of the transformational leader was their ability to influence followers by arousing strong emotions and enabling identification with the leader (G. A. Yukl, 2010).Transformational leadership has then become a prominent theory of leadership during the past decade and has drawn a great deal of attention (see for example Grant, 2012; Seo, Jin, & Shapiro, 2008; van Knippenberg & Sitkin, 2013) with some recent studies have seeking to affirm the link between transformational leadership and the attainment of sustainable development goals (Dartey-Baah, 2014). Here the importance of the self aware leader becomes key (Gallagher & Costal, 2012).

The main system which governs our actions and thus has the greatest influence on success or failure is our self. Quinn (1996 p.193) points out that “Deep change at the collective level required deep change at the personal level. Organisational change cannot occur unless we accept the pain of personal change”. As such the component of personal transformation can be viewed as a critical success factor for organisations seeking to align their practices with the principles of sustainability. Essentially without the health and maintenance of the self how can we expect our organisations and business to be healthy. This realisation has led to the development of new

models of leadership such as ‘authentic leadership’ and ‘mindful leadership’ (Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Silverthorne, 2010).

Authentic Leadership

Authentic leadership is an approach to leadership that emphasises building a leader's legitimacy though honest relationships with their followers or group members which value their input and are built on strong ethical foundations (Cooper, Scandura, & Schriesheim, 2005/6; B. George, 2003). Authentic leadership is built upon at least four distinct qualities (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008):

1. Self-awareness: The process of reflection and re-examination be the leaders on their own strengths, weaknesses and values
2. Balanced Processing: The leader soliciting opposing viewpoints and giving them a due and fair-minded consideration
3. Relational Transparency: The open sharing of the leaders own thoughts and beliefs
4. Internalised Moral Perspective: A positive ethical foundation adhered to by the leader in their relationships and decisions that resists outside pressures.

Generally, authentic leaders are able to improve individual and team performance by building trust and generating support from their followers. Consequently the authentic leadership approach has been embraced by leaders who see it as an alternative to old models of leadership that may emphasis profit over people and ethics (Orlitzky, Siegel, & Waldman, 2011).

Mindful Leadership

In recent years there has been a growing interest in ‘mindfulness’ where an individual concentrates on practicing an intentional, accepting and non-judgemental focus on their

emotions, thoughts and sensations that occur in the present moment, has crossed over into business (Baron, 2016; Reb & Atkins, 2015; Swart, Chisholm, & Brown, 2015). Studies of mindfulness in a business context have shown that increases in mindfulness are associated with increased creativity and decreased burnout amongst leaders and executives (Langer & Moldoveanu, 2000; Sauer & Kohls, 2011). This has led some business schools to introduce mindfulness techniques into the MBA and executive education courses as a means to assist executives in calming their minds and increasing their focus (Gardiner, 2012). Such skills are increasingly seen as crucial for those hoping to succeed in the frenetic business environment where distractions from email and phone calls to pressure for strong profit reports affect decision making capabilities.

Emotional Leadership

It has long been understood that emotions and feelings experienced at the time of making a decision can have a significant bearing on the outcomes. When Bentham (1789) first proposed his construct of utility - that when faced with an ethical dilemma, the moral action is the one that maximizes well being or benefits to the majority of people - emotions figured prominently in his theory (Loewenstein, 2000). More recently the role of emotions in decision making has become an area of significant interest by both psychologists and economists trying to understand the interaction between cognition and emotion. From a sustainability perspective It has been acknowledged that feelings, emotions and motivation effects complex problem solving (Weick, Sutcliffe, & Obstfeld, 2005).

Leadership is a particularly emotionally driven process and human emotions are intertwined with the social influence process that accompanies leadership actions (J. M. George, 2000). Sy *et al (2005)* describe these emotional effects in three levels:

1. *The mood of individual group members* where leaders in a positive mood experience more positive mood than those with leaders in a negative mood. Here the leaders are transmitting their moods to other group members through emotional contagion (Sy et al., 2005). It is suggested that charismatic leaders may influence followers through mood contagion mechanisms (Bono & Ilies, 2006).
2. *The affective tone of the group* which represents the aggregate of the moods of individual group members. Groups with leaders in a positive mood have a more positive tone than groups with leaders in a negative mood (Sy et al., 2005).
3. *Group processes like co-ordination, effort exposure and task strategy.* Here public expressions of mood impact how group members think and act. Leaders signal their goals, intentions and attitudes through their moods. Expressions of positive moods signify to others that leaders deem progress towards goals to be good and group members respond to this cognitively and behaviorally in way that are reflected in the group's processes (Sy et al., 2005).

Beyond the mood of the leader their behavior is a source for a groups positive and negative emotions as the leader creates situations and events that lead to an emotional response. Since the behaviour and productivity of group members are directly affected by their emotional states, it is essential to consider employee's emotional responses to organisational leaders (Dasborough, 2006). As a result, emotional intelligence defined as the ability to understand and manage the moods and emotions in the self and others is a strong determinant in effective leadership, in particular when dealing with complex problems such as those related to global sustainability (J. M. George, 2000). The key to emotional leadership then is understanding the profound impact that an individual leader's mood and behaviour can have on those around them and then adjusting style accordingly.

Leaders emotional intelligence, self awareness, empathy and the ability to build a rapport with others has clear links to their own performance, but perhaps more importantly a leader's

emotional style also drives everyone else's moods and behaviors through the neurological process of ‘mood cognition’ (Goleman, Boyatzis, & McKee, 2013). Stressed, depressed leaders create toxic organisations filled with negativity whereas upbeat, inspirational leaders cultivate employees who are able to embrace and surmount even the toughest challenges (Goleman et al., 2013).

Perhaps the main trait the ties all of these new and emerging leadership models together is the the need for leaders to be self aware, empathetic and practice ‘self sustainability’. Essential to an understanding of leadership for sustainability is the fact that leaders must embark on their own self discovery prior to becoming a true sustainability leader. If we take then the premise that leaders emotional states, self-awareness and emotional intelligence have a strong bearing on their capacity to make sound decisions and on the emotional states and performance of their employees or team members, we must recognize the fact that our emotional states are not static, that they change monthly - weekly - daily - even minute by minute affected by those around us, by our environment, our hormones, our natural cycles.

Lessons from Natural Cycles

The natural world is full of cycles that work to maintain a state of ecological balance such as the nitrogen cycle, the cycle of the seasons or phases of the moon (Nattrass & Altomare, 2013). They balance and regulate the Earth and its atmosphere. Animals and plants grow, reproduce, hibernate or pupate in sync with seasonal and lunar cycles. Human beings also have these cyclic mechanisms that work to balance our hormones, nutrition or the homeostatic systems that maintain body temperature. In modern society both men and women are disconnected from their natural cycles yet where an individual is in their cycle can have a profound effect on our moods, our emotions on our performance and that of our team (Gunderson, 2001). The result is that in the same way humankind has placed stress on the planet's ability to maintain appropriate

balance to sustain life, we have managed to stress our own systems ability to maintain optimum balance (Alberti et al., 2003; Oschman, 2016).

Lunar Cycles

Much research has been undertaken on the effect of the lunar cycle on human mood and emotions (see Rotton & Kelly, 1985 for an early overview). From a business perspective two teams of researchers from the University of Michigan (Dichev & Janes, 2001; Yuan, Zheng, & Zhu, 2006) found that financial returns obtained by investors were significantly higher in the days surrounding new moon dates than in the days surrounding full moon dates. Subsequent studies have sought to explore this relationship further (see for example Borowski, 2015; Floros & Tan, 2013). Despite the interest in the lunar cycle and human behavior, the dominant view in the psychology literature is that there is in fact no relationship between mood and the lunar phases (Foster & Roenneberg, 2008; Rotton & Kelly, 1985). However it has been suggested that despite evidence to the contrary, many people do in fact believe that abnormal behavior is associated with the full moon and as such there may be cognitive relationship between one's decision making capabilities and the lunar cycle (Kelly, Rotton, & Culver, 1996).

Seasonal Cycles

In recent years psychologists have recognised the impact that seasonal changes have on mood, emotion and behaviour (Golder & Macy, 2011; Harmatz et al., 2000). These can manifest in a number of ways and with differing degrees of impact from small disturbances in mood through to more serious and debilitating bouts of depression. From a business perspective it is known that there is a relationship between seasonal cycles and business cycles (Beaulieu & Miron, 1990; Miron, 1990) and there is a branch of the literature that empirically examines the relationships between seasonal cycles and financial investment. Kramer and Weber (2012) found that people who suffer from seasonal affective disorder (SAD) displayed financial risk aversion that varied

across the seasons as a function of seasonally changing effect. SAD sufferers had significant stronger preferences for safe choices for safe choices during the winter than non SAD sufferers. Recent studies also demonstrate that both seasonal variation and weather may affect an individual's tolerance for risk though its effect on mood (Bassi, Colacito, & Fulghieri, 2013; Goetzmann, Kim, Kumar, & Wang, 2015).

Biological Cycles

In much of modern society both men and women are disconnected from their natural biological and hormonal cycles often through stress (Sousa & Almeida, 2012). However these cycles are essential for well being and govern our body's built in basic rest - activity - rest cycles - the circadian, diurnal, ultradian and infradian rhythms (Barber, 2010). It is instinctive for us to maintain an optimum state of balance yet we are able to override this instinctual programming by use of our conscious mind. Increasingly workers are engaged in non-standard working hours including night and shift work, or at the executive business level long working hours and prolonged activity through the need to be always available (Costa & Garbarino, 2014). This results in disruption to biological cycles which can result in psychological changes that may negatively affect health and performance (Liskowsky, 1991) as well as wreaking havoc on private lives (Hewlett & Luce, 2006). In extreme cases overworking can result in severe headaches, abdominal pains, increased risk of cancers and even death (Burke & Cooper, 2008; Haus & Smolensky, 2013).

Hormonal cycles

Both men and women have a natural hormonal cycle and the biological processes that are governed by these cycles have an affect on behavior. For women this is most pronounced in the menstrual cycle, the cyclical process of ovulation and menstruation during which most women between the ages of 15 and 50 are affected by hormonal, physiological and psychological

changes. The menstrual cycle in particular has been shown to influence women's cognition and mood (Richardson, 1992) which suggests that strategic decision making may also be influenced by hormonal cycles (Chen, Katuščák, & Ozdenoren, 2013). With this in mind it may be beneficial for women to better understand how their decision making varies during the cycle to better time key decisions. This could in turn lead to better decisions in investments, negotiations and other competitive situations (Chen et al., 2013). In respect to creative tasks, women tend to perform better when estrogen concentrations are highest (Krug, Stamm, Pietrowsky, Fehm, & Born, 1994).

For men, the hormonal cycle is mainly governed by testosterone. At night testosterone levels rise hour by hour and are at their highest in the morning. By early and late mornings they level off and begin to decline being lowest in the late afternoon (Cutler, 1996). Male hormones also cycle throughout the year with a 16% increase in levels of testosterone from April to October and 22% decline from October to April (Smals, Kloppenborg, & Benraad, 1976; Smith, Coward, Kovac, & Lipshultz, 2013). This may be important as there is a relationship between cognitive ability and testosterone levels with men with lower levels of the hormone performing better than other groups on measures of spatial and mathematical ability (Gouchie & Kimura, 1991). Changes in levels of testosterone also show some relationship to mood suggesting that rises in the hormone are related to rise in status and feelings of achievement (Mazur & Lamb, 1980). As a result changes in male hormonal levels can affect cognitive performance (Newman, Sellers, & Josephs, 2005). Indeed recent research shows that hormones, specifically testosterone and estrogen, play a role in consumer decision making (Aspara & Van Den Bergh, 2014/3; Durante & Arsena, 2015). This has led to increased research focus on the role of hormones in other business domains (Stanton, 2016).

The relationships between natural cycles and human biological and hormonal cycles then are well established as is the importance of emotion and mood on decision making and leadership effectiveness (Chen et al., 2013). The growing movement towards new paradigms of leadership

that incorporate self awareness can then be supplemented by acknowledging the influence of natural cycles on leadership activities. If ones behaviour and decision making is to some degree governed by natural cycles as the evidence appears to suggest, it may be suggested that greater awareness of this can assist leaders in better understanding why they make the decisions they do. Should leaders and managers learn to accept and recognise the role of their emotions and the relationship between them and natural cycles, they can plan business and leadership activities so that they coincide with one another.

How can leaders align their practices with these natural cycles?

In seeking to align the required sustainability leadership competencies with self awareness of the influence of natural and biological cycles on business decision making and the individual's well-being, we can look toward models that learn from the natural world. In nature everything is governed by cycles and everything is interconnected. Fields such as Biomimicry and Permaculture have taught us that emulating and working with natural systems can create products, processes and policies that are better adapted to life over the long term. Lessons can also be learnt from indigenous peoples and their traditional leadership practices that incorporate and work with natural and biological cycles.

Biomimicry

Biomimicry is the discipline of studying nature's best ideas and imitating these designs and processes to solve human problems (Benyus, 2003). The core idea is that nature has already solved many of the problems that human society is grappling with and that we can learn nature and adapt its designs to meet our needs. Biomimicry can be applied to leadership as well as design. Nature demonstrates an infinite variety of leadership models from those where there is no leader, to those where leaders are clearly defined and suited to a specific context (McFetridge & Williamson, 2011). One example of this would be leaf-cutting ants in Texas which form social

structures of up to 7 million workers per nest. No single individual is in charge, rather each ant works together as one utilising sophisticated communications systems based on chemicals to ensure the optimal balance between group behaviour versus self-interest and shared goals (McFetridge & Williamson, 2011). This model of leadership is also exhibited by flocks, herds, schools and colonies and is referred to as organisational intelligence defined as the capacity of an enterprise to mobilise and focus all its brainpower on accomplishing its mission (Albrecht, 2003). Here the culture and values of an organisation acts as a central nervous system with each individual in tune with and aware of its neighbours and they way in which they are responding to environmental factors (Albrecht, 2003). Such insights are leading to the development of new leadership models such as 'natural leadership' which looks to nature for models, strategies and solutions to problems (McFetridge & Williamson, 2011) and 'creative leadership' which uses nature as a model for leadership principles and practices demonstrating an understanding that evolution has produced organisms that are responsive, adaptable, resilient and able to support complex systems prone to disturbance and unpredictability (DeLuca, 2014). Another nature inspired philosophy that may be applied to leadership it that of permaculture.

Permaculture

The term 'permaculture' was coined by David Holmgren and Bill Mollison as a contraction of the words 'permanent' and 'agriculture' in the mid 1970s (Mollison & Holmgren, 1979). The concept was developed to represent an integrated and evolving system of perennial or self-perpetuating plant and animal species useful to human beings (Holmgren, 2011). In subsequent years, Holmgren refines the definition of permaculture into 12 principles that place people and the way in which they organise themselves at the centre of the concept (see Table 1).

Insert Table 1 here

Whilst expressed as design principles for agriculture, these 12 permaculture principles can also relate directly to business as a means to foster resilient human organisations that contribute to the goal of sustainable development (Mannen, Hinton, Kuijper, & Porter, 2012). The main philosophy of permaculture is similar to that of biomimicry - that agricultural systems, and following Mannen et al (2012) organisations, can be consciously designed in ways that mimic the patterns and relationships found in nature and thus yield an abundance of resources necessary for sustaining the operations of the organisation without compromising the ability of future generations of stakeholder to meet their own needs. For example, principle 3 ‘obtain a yield’ can remind leaders that sustainability is a journey rather than a destination and that results may be a long time coming. Here it is important to reward both ourselves and others along the way, reminding everyone that their efforts are amounting to something. Similarly principle 1 ‘observe and interact’ reminds us to pay attention to our situation and that of those around us to develop unique responses to specific sustainability problems.

Shamanic Leadership

The notion that leaders should work with biological and natural rhythms and cycles of the moon, the sun, the time of the day and of the seasons is nothing new. Indigenous peoples all over the world who live in close proximity to nature rely on natural systems for their survival and learnt to from a nurturing relationship with their environment. A form of leadership for sustainable development among traditional cultures was practiced by the Shaman who would express collective responsibility for the state of biosocial and social environmental systems (Redekop, 2010). The shaman (leader) would recognise that the relationship between human beings and nature could become imbalanced and seek to redress this. Such an approach may be termed ‘Shamanic Leadership’. Out of these ideas comes the notion of the corporate shaman, a business leader who recognises that the organisation is an organism rather that a machine and seeks to reestablish a healthy internal and external environment in corporations (Whiteley, 2002). It has often been said that the shaman is the traditional culture model for transformational leaders

(Krippner, 1989; Reeves-Ellington, 1998) and thus the metaphor of the shaman as leader is a powerful one that can be used to develop a conception of a modern day, sustainability focussed, inspirational and interconnected management professional.

Following the path to service something bigger in their desire and being true to self constitutes the basis of success for the shamanic leader, in other words they are able to living out their purpose in life and following their 'calling' (Waddock, 2014). In order to achieve this, leaders must be mindful of their purpose, authentic in their approach and possess the willingness and ability to look within. One characteristic of the shaman is their willingness and ability to 'journey' as a means to visualise multiple pathways to assist in making a decision as to which way to turn, which decision to make and assess the implications of this decision. Frequently this journey involves crossing boundaries and putting ideas on the line (Waddock, 2014). Indeed entrepreneurs have been portrayed as 'spiritual visionaries' who create and utilize powerful 'visions' that they can convey with authority and eloquence so to provide meaning and inspiration (Karakas, 2009). However it is hard for leaders to do work of significance if they are afraid to really understand and be themselves.

Philosophies such as biomimicry, permaculture and traditional or shamanic leadership already provide some ways in which an awareness of natural and biological cycles can be incorporated into leadership models. However in order to develop a truly integrative natural cycle of leadership, these philosophies need to be considered alongside leadership models and the practice of self-sustainability.

The Natural cycle of leadership

A natural cycle of leadership model would seek to align leadership for sustainability competencies with the seasons and cycles of the natural world and biological rhythms. This approach borrows from ecological models and practices such as Biomimicry and Permaculture, and the

philosophies practiced by traditional shamanic or indigenous leaders that recognise the interconnectedness of natural systems and work alongside them, in tune with them and inspired by them, and combines this with what we already know about the role of emotions and hormonal cycles on decision making in business and organisational fields. Here we can take common leadership competencies and activities such as ‘setting vision’ ‘innovating’ and ‘risk taking’’ and map them to a time in our natural cycle where we are more creative and persuasive, there are times when we can be more courageous when we are in a better place to make courageous decisions.

Research has shown us that individuals are more creative at certain times of the day, the week, the month even the year, dictated by a combination of hormonal and environmental drivers (Conner & Silvia, 2015). If we are in tune with ourselves - our natural cycles and the Earth's natural cycles we can plan for these activities to take place at the optimum time. Likewise there is a time when we are better placed to take on complex, analytical tasks, recognizing our peak time when we are most alert and able to concentrate (Simon, 1987). For example, if cognition in men is related to higher testosterone levels which are seen in the morning, this may be the better time to tackle such tasks. With regard to creative tasks such as visioning or brainstorming, women tend to perform better towards the end of their menstrual cycle (Krug et al., 1994) and so such tasks could be planned to coincide with this event.

In some respects the natural cycle of leadership recognises that there is a time to step back to let the land, or decision making activities lie fallow. There is also a time to plant different seeds (or ideas) so that fruit (or projects) bloom at different times. As studies of permaculture and ecology show us, there is strength and resilience in diversification. For individual leaders there is a need to practice mindfulness, self-sustainability and inner leadership alongside cultivating gratitude, balance, ‘inner resilience’, and practices to root and ground our leadership in the heart, in nature, and in collaboration with a community of other leaders.

Conclusion and future directions

The purpose of this paper is to encourage discussion and debate around the idea that in order for deep organisational and societal change to occur, leaders need to change and heal themselves by practicing sustainability of the self and paying attention to natural cycles. It has sought to achieve this by to argue that effective leadership is key to achieving successful sustainable development and sustainability goals and that there is increasing acknowledgement of the need for leaders who lead with purpose, values and integrity. It has reviewed models of leadership such as ‘authentic leadership’ and ‘mindful leadership’ which seek to help business leaders connect with their inner self to result in more adaptable and compassionate decision making. A key contribution of the paper has been to combine lessons from contemporary leadership models and paradigms with philosophies such as biomimicry, permaculture and shamanic leadership as a means to demonstrate how leaders can develop self-sustainability. It has described the natural cycle of leadership as an attempt to align leadership traits with the seasons and cycles of the natural world, acknowledging the influence this has on feelings, mood, emotions and motivation. It argues that leaders should recognise that there is a time for visioning, a time for action and a time for reflection. Such a model is proposed to produce leaders who are more in tune with both their own emotions, feelings and those of others, but also in tune with the wider social systems in which we live and work as well as the natural environment which supports us.

There are a couple of key practical implications that may be drawn from this work. Firstly it appears that leaders that are able to incorporate lessons from natural cycles and that are mindful and in tune with their biological cycles can seek to better understand, respond and align their practices with the reality of human and natural systems. What's more, by incorporating self awareness, inner resilience and practicing ‘self-sustainability’ leaders are better able to maintain their own inner balance and be better prepared to engage with the complex problems facing the world. This realisation suggests that we require a transformation in the way in which we work, we lead, we think and we act. This component of personal transformation can be viewed as a critical

success factor for organisations seeking to align their practices with the principles of sustainability. Second, development models such as the natural cycle of leadership recognise human interaction with the natural environment is highly complex, and it is known that feelings, emotions and motivation effects complex problem solving. This points to the need for leaders to practice ‘self-sustainability’, to develop their own inner resilience before tackling complex societal and business problems. Organisations seeking to equip leaders with the necessary skills to address sustainability issues should consider implementing training programmes and initiatives that assist leaders in developing self-awareness and an understanding of the relationships between natural and biological cycles and their decision making abilities. Without health and maintenance of leaders themselves, how can organisations and business to be healthy, productive and contribute to the wider good?

Whilst the conceptual work presented here attempts to provide a critical perspective on leadership development and practice, there are some limitations that should be acknowledged and as a result a number of areas where further research is necessary. The purpose of the paper was to attempt to align contemporary leadership styles with theories on natural and biological cycles and rhythms in order to advance the argument that leaders should mindful of their influence on their behaviours. In order to do so the paper puts on hold important questions of the legitimacy of current leadership models and their influence, positive and negative, on societal responses to sustainability issues. The result is that a more instrumental approach to leadership is inherent in the work presented here. It is suggested that researchers consider whether past and current leadership development and leadership styles are in some way complicit in creating many of the sustainability issues we now find ourselves attempting to address. Further research is also required to address the lack of literature that examines the linkages between leadership and its role in promoting sustainability and sustainable development.

Finally, whilst three appears to be a conceptual link between lunar, seasonal, biological and hormonal cycles and the ability of leaders to make effective decisions, the empirical evidence in

this area needs to be strengthened. There are a number of ways in which this may be achieved such as studies that examine linkages between company performance and seasonal activity similar to the research mentioned above undertaken in the financial industry (Bassi et al., 2013; see for example: Kramer & Weber, 2012). Longitudinal and ethnographic studies of business leaders decision making processes may be used to examine the influence of external environmental factors on their performance. Similarly studies that utilise reflective practice, reflexivity and first person inquiry may be useful in examining the paradigms, assumptions, frameworks and patterns of thought and behaviour that shape leaders and managers practice including the influence of biological and hormonal cycles. Such research would perhaps have implications for improving business decision making processes, particularly those that are linked to sustainability outcomes.

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