

Responding to the Challenge of Climate Change: Using the Lever of Leadership¹

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ABSTRACT

This paper has four objectives. First, it highlights why leadership is an important phenomenon when faced with complex environmental challenges like the challenge of delivering sustainable forms of solid waste management in a changing climate. Second, it describes some of the key factors associated with effective environmental leaders and leadership processes. Third, it explains two leadership theories that can be used to build appropriate forms of environmental leadership capacity. Finally, it outlines some strategies that could be used to strategically build leadership capacity to overcome some of the barriers to more sustainable solid waste management in Tasmania.

The paper's content is primarily derived from an international literature review conducted as part of a three-year research project involving emergent environmental leaders ('champions') who trigger and drive processes of change in government agencies to promote more sustainable practices. Its key message is that strategically building certain forms of leadership capacity is a leverage point that can be used to overcome complex environmental challenges over the medium to long term. To do this, practitioners need to arm themselves with knowledge on how this can be done. This paper helps this process.

The target audience for this paper is practitioners who are seeking to promote more sustainable forms of solid waste management in Tasmania, wish to overcome complex challenges, and have the ability to implement leadership development initiatives whether it be in their organisations, professional associations or simply as part of their own professional development.

INTRODUCTION

This chapter introduces the concept of leadership and provides a contemporary definition that highlights the importance of groups of leaders (both formal and emergent) who collaborate to develop shared visions, align resources to that vision, and motivate and inspire others to deliver the vision. The chapter also explains why leadership is a process and a skill set that is particularly important for environmental leaders, including leaders tackling the challenge of managing solid waste in a more sustainable manner. It concludes by briefly describing the extent to which leadership can be managed, and how this can be done.

What is Leadership?

Confusion surrounding the definition of leadership is a feature of the leadership literature (Barker, 1997; Lowe & Gardner, 2000). Grint (2000) provided a typology of four common perspectives of leadership. The first view defines leadership as the activities of a specific type of *person*, based on the personality traits and behaviours traditionally associated with leaders in a given culture. The second view defines leadership in terms of *results*, meaning that the designation of leadership follows demonstrated achievement. The third view defines leadership in terms of a person's *position*, such as an executive position in an organisation. The final view is more contemporary (Doh, 2002) and sees leadership as a *process of influence*.

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This paper supports the more contemporary view. Drawing from Rost (1993) and Kotter (1998), leadership is defined as:

A *process of influence* that occurs within the context of relationships between leaders and their collaborators, and involves:

- establishing direction (i.e. a shared vision);
 - aligning resources; and
 - generating motivation and providing inspiration
- to achieve mutual interests.

This definition can accommodate leaders and collaborators swapping roles during the process, strong individual leadership, as well as distributed leadership (e.g. within a team, where some or all members contribute to the leadership process at some time).

Using this definition, an example of “leadership” could be groups of formal and emergent leaders working across the institution of solid waste management in Tasmania to collectively develop a shared vision with stakeholders, align resources to this vision (e.g. on-ground projects, funding mechanisms, research, policy, strategies, plans, etc.), and motivate and inspire others to deliver this vision. Such an example is consistent with Australian research that has examined the factors that lead to successful transformations toward more sustainable resource management. This research has highlighted the importance of inter-organisational networks of emergent, environmental leaders (‘champions’) who act as agents of change in this process (see Brown & Clarke, 2007).

Why is leadership an important factor to consider?

Three reasons are provided as to why leadership should be viewed as an important factor in the transition towards more sustainable solid waste management in Tasmania. First, the *context* in which most sustainability-focused organisations currently operate places a premium on leadership. Leadership is highly sensitive to context (Bryman *et al.*, 1996; Pettigrew & Whipp, 1991). Where such contexts are characterised by crises, change, uncertainty, complexity and instability, the need for, and value of, leadership within organisations substantially increases (Conger, 1993).

In addition, the environmental sector commonly hosts complex challenges which are also known as ‘wicked problems’ (Rittel & Webber, 1973). Such problems are characterised by the following features:

- Difficult to clearly define “the problem”.
- Many interdependencies and are often multi-causal.
- Attempt to address them often leads to unforeseen circumstances.
- Unstable / dynamic.
- No obvious / agreed solution.
- Socially complex.
- Cross jurisdictional boundaries.
- Require behavioural change.
- History of chronic policy failure (Commonwealth of Australia, 2007).

The Commonwealth of Australia (2007), in their paper titled ‘Tackling Wicked Problems’, stressed that these problems require new approaches to policy development (e.g. a more adaptive, ‘learning by doing’ approach). Leadership researchers also suggest that these problems are best suited to leaders with particular attributes (e.g. systems thinking ability and ‘transformational’ leadership behaviours [see Bass, 1985 & 1999]), and certain forms of leadership (e.g. coordinated distributed leadership across organisational boundaries and managerial levels, and ‘enabling’ leadership by senior leaders [see Uhl-Bien *et al.*, 2007]). These leadership attributes and forms of leadership are not traditional or common. Thus, there is a need to actively develop certain forms of leadership capacity to more effectively respond to these problems.

Second, leadership as a process of influence and skill set is critical in driving major processes of change. As Emeritus Professor John Kotter from Harvard University stated:

“Producing change is about 80% leadership ... and 20% management... In most change efforts, those percentages are reversed. We continue to produce great managers; we need to develop great leaders.” (Kotter, 2006, p. 14)

The key point here is that organisations and institutions that are embarking on a major process of change need high levels of leadership capacity across managerial levels and organisational boundaries, but often, this capacity is in short supply. This is particularly the case where the change process marks the transition from a period of relative stability where 'management' behaviours like planning, budgeting, staffing and directing flourished. The mismatch between the levels of leadership capacity that are needed and the levels that are typically available is one explanation for why so many major organisational change programs fail. The literature indicates that such failure rates typically range from 50 to 85% (see Beer & Nohria, 2000; Kotter, 1998; Pascale *et al.*, 1997; Stebel, 1996).

Third, there is compelling evidence within the literature that leadership is a factor that is associated with successful transitions and improved organisational performance. For example, Australian research involving emergent environmental leaders (champions) who promote more sustainable practices in the urban water sector has demonstrated their importance as catalysts of change (see Brown & Clarke, 2007; Taylor, 2008; White, 2006). At the broader level of organisational leadership research, indicators of leadership quality have been positively correlated with team and organisational performance (see Burke *et al.*, 2006; Hogan & Kaiser, 2005; Kaiser *et al.*, 2008; Ruvolo *et al.*, 2004). Improving the quality of leadership therefore represents a source of organisational improvement and/or competitive advantage (McCall, 1998; Parry & Sinha, 2005). Growing awareness of this is one of the reasons why interest in leadership and improved approaches to leadership development has been very strong over the last decade (see Day, 2000; Jackson, 2005; Ruvolo *et al.*, 2004).

Can leadership capacity be built?

There are many factors that contribute to effective leaders and leadership processes, such as personal values, personality characteristics, behaviours and skills, types of power, social network characteristics, and a broad range of contextual factors (see Yukl, 1989). The majority, but not all, of these factors can be directly or indirectly managed over the medium to long term, if knowledge is available on desirable forms of leadership, individual leadership attributes and leadership development methods.

Factors that can be *directly* managed include critical leadership skills and behaviours. Evidence-based, theoretically grounded, leadership development programs are typically used for this purpose. Factors that can be *indirectly* managed include innate personal values, personality characteristics and the leadership context. For example, during recruitment processes, savvy organisations can actively seek people with personal attributes that are associated with effective leaders. Another example is senior, enabling leaders who focus on managing their organisation's dominant organisational culture to promote certain forms of leadership (e.g. coordinated forms of distributed leadership that involves collaboration, innovation, experimentation and learning).

A good example of how leadership capacity can be built in practice relates to transformational leadership (see Bass, 1985 & 1999). As illustrated later in this paper, transformational leadership behaviours such as articulating shared visions, questioning the status quo, and expressing enthusiasm and confidence are frequently used by environmental leaders. In addition, there is strong evidence that transformational leadership is positively correlated with leadership effectiveness in a variety of organisational contexts and cultures (see Lowe *et al.*, 1996). While some aspects of transformational leadership relate to innate characteristics, such as charisma, the majority of these aspects can be consciously developed. Experiments reported in the literature indicate that transformational leadership can be taught (Dvir *et al.*, 2002). Thus, demonstrated methods exist to improve an aspect of leadership that is positively correlated with effective environmental leaders and leadership processes. This is just one example of the potential that exists to build appropriate forms of leadership capacity as a lever to accelerate change towards more sustainable practices.

WHAT DO WE KNOW ABOUT EFFECTIVE ENVIRONMENTAL LEADERS?

This chapter highlights some of what we know about factors that contribute to effective environmental leaders and also effective processes of environmental leadership. This information contributes to a body of knowledge that can be used to design initiatives to build appropriate forms of leadership capacity in the environmental management sector.

The information presented in this chapter primarily originates from an international literature review that was part of a PhD project at Monash University (2006-09). This project investigated emergent environmental

leaders ('champions'), and used this knowledge to identify and trial strategies to enhance the emergence and effectiveness of these leaders. While the literature review examined the attributes of environmental leaders and champions per se, subsequent field-based research focussed on champions who worked in the urban water sector to promote 'water sensitive cities'. For more details of the project's methodology, see Taylor (2008).

The following sub-headings reflect the main components of Yukl's (1989) "Integrating conceptual framework" for leadership effectiveness (see Figure 1). These components contribute to the effectiveness of environmental leaders. The chapter concludes with a brief discussion of effective processes of champion-driven environmental leadership.

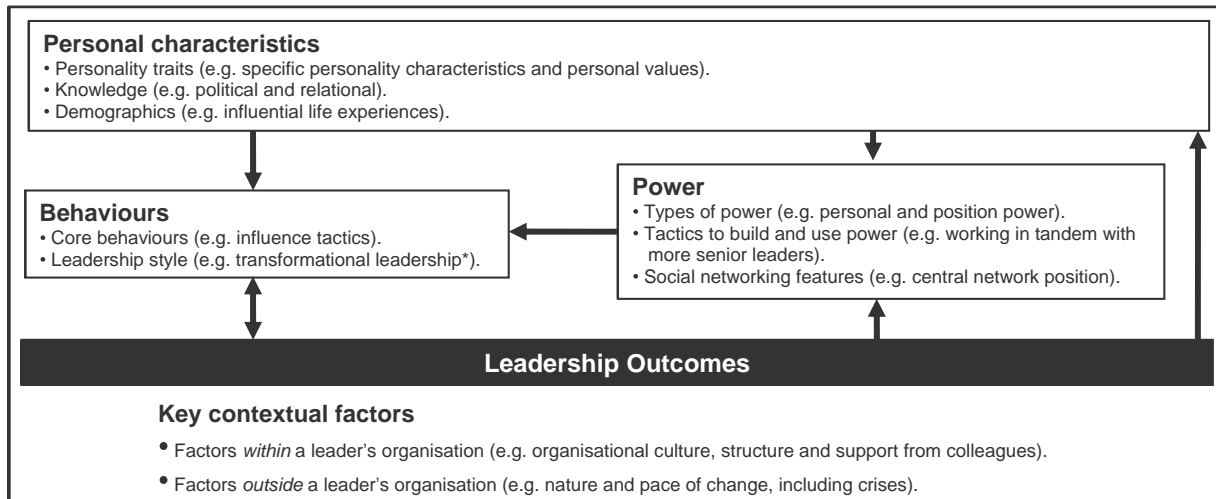


Figure 1 - A conceptual model of individual leadership effectiveness that has been used to study emergent environmental leaders (adapted from Yukl, 1989).

Note: * = A style of leadership that involves moving collaborators "beyond immediate self-interests through idealized influence (charisma), inspiration, intellectual stimulation, or individualized consideration" (Bass, 1999, p. 11).

Personal characteristics

Personality traits

Personality traits include personality characteristics (e.g. persistence) and personal values (e.g. commitment to environmental sustainability). These traits provide the potential for leadership emergence and effective leadership, but do not guarantee such outcomes (Kirkpatrick & Locke, 1991; Yukl, 1981). Personality characteristics potentially affect the types of behaviour a leader exhibits in a given situation, the types of power available to leaders, and the acquisition of skills needed for specific leadership behaviours (Hogan & Kaiser, 2005; Yukl, 1989). Personal values are thought to play a particularly significant role in the emergence of environmental leaders (Dunphy *et al.*, 2003; Egri & Frost, 1994).

Personality traits are thought to play a more important role in the process of leadership in environments where there are high levels of complexity, uncertainty and change, but few rules, procedures and well-defined roles (House *et al.*, 1996; Judge *et al.*, 2002). Environments that contain 'wicked problems' (see Commonwealth of Australia, 2007) fit this description.

Table 1 summarises important personality traits that have been highlighted in the environmental leadership literature. This body of literature stresses the importance of deep-seated personal values, in particular, ecocentric, openness to change and self-transcendence values². In addition, the degree of congruence between personal values and the issue requiring leadership is an important factor for leader emergence.

² See the footnotes to Table 1 for definitions of 'ecocentric' and 'self-transcendence' values.

Table 1 - Important personality traits highlighted in the environmental leadership literature

PERSONALITY TRAITS OF ENVIRONMENTAL LEADERS	SOURCES
<ul style="list-style-type: none"> ▪ Deep-seated personal values and commitment relating to environmental sustainability.* ▪ Congruence between the issue being promoted and personal values.* ▪ Ecocentric¹, openness to change and self-transcendence² personal values.* ▪ Personal resilience and persistence.* ▪ Realistic self-esteem. ▪ Self-direction and initiative. ▪ Tolerance for ambiguity. ▪ Flexibility and adaptability. ▪ Clear focus. ▪ Enthusiasm. ▪ High levels of motivation. ▪ A propensity to inspire others. ▪ Political awareness and sensitivity. ▪ Empathy. ▪ A propensity to see the 'big picture' / systems thinking ability. ▪ Commitment to continuous learning. 	<p>Bansal (2003), Dunphy (2001), Dunphy <i>et al.</i> (2003), Egri & Frost, (1994), Egri & Herman (2000), Flannery & May (1994), Frost & Egri (1991), Gladwin <i>et al.</i> (1995), Johnson (1998), Portugal & Yukl (1994) and Shrivastava (1994 & 1995).</p>

Notes: * = Traits most strongly emphasised within the literature. 1. Placing ecological issues at the centre of one's organisational and management concerns (Harding, 1998). 2. A desire to move beyond one's current limitations.

The author's field research on emergent environmental leaders has emphasised the importance of congruence between a leader's personal values, the sustainability issue requiring leadership, the personal values of their colleagues, and the values embedded within the organisation's culture. However, very few of the studied leaders had "deep green" (Harding, 1998) environmental values. One of these leaders provided an explanation for this finding, saying "I think if you are completely driven by the environment, then your ability to engage other people is probably going to be affected". For this type of environmental leader, several personality traits were often strongly developed and distinguishing compared to leaders in control groups. These included the 'openness to experience' trait, self confidence, motivation and determination (see Taylor, 2008).

Demographics

Research findings relating to the demographics of transformational leaders are likely to be relevant given the association between the transformational leadership style and environmental leaders (see Danter *et al.*, 2000; Egri & Herman, 2000; Smith & Sarros, 2004). One finding is that, on average, females tend to exhibit transformational leadership behaviours to a greater extent than their male counterparts (Bass, 1999; Bass & Avolio, 1994; Sarros *et al.*, 2001). Another research finding is that specific types of childhood and adult life experiences are thought to be significant to the maturation of transformational leaders (Avolio & Gibbons, 1988; Bass, 1999; Gronn, 1995). These experiences include challenging leadership roles during childhood, as well as leadership development programs and opportunities for self reflection during adulthood.

For the type of emergent environmental leaders studied by the author, the most notable demographic attributes included their diverse work experience, high level of professional mobility, extensive travel experience (particularly during the early adult years) and existence of influential mentors.

Behaviours

Table 2 summarises the leadership behaviours that have been highlighted as being important in the environmental leadership literature. The choice whether to use such behaviours will depend heavily on contextual factors, such as the leader's available power, the nature of their influence target, as well as the

organisation's strategic goals, norms and internal relationships (Andersson & Bateman, 2000; Dutton *et al.*, 2001; Hughes *et al.*, 1995).

Table 2 indicates that behaviours frequently associated with environmental leaders include: transformational leadership behaviours; scanning behaviours to gather information and ideas (e.g. from outside their organisation); framing behaviours, such as highlighting an issue's urgency; selling behaviours, such as using rational persuasion; brokering information; managing conflict; clarifying roles and agreements between stakeholders; networking; helping to establish a new organisational culture; and running pilot projects.

Table 2 - Important behaviours highlighted in the environmental leadership literature

BEHAVIOURS OF ENVIRONMENTAL LEADERS	SOURCES
<ul style="list-style-type: none"> ▪ Using transformational leadership behaviours (see Bass, 1985 & 1999).* ▪ Scanning behaviours (e.g. networking to gather information).* ▪ Framing behaviours (e.g. highlighting the issue's urgency).* ▪ Selling behaviours / influence tactics (e.g. rational persuasion, coalition building, inspirational appeals, exchange and pressure tactics).* ▪ Brokering information.* ▪ Negotiating disputes and overcoming resistance.* ▪ Counselling.* ▪ Clarifying roles and establishing agreements between stakeholders.* ▪ Networking.* ▪ Working with executives to inculcate sustainability-related values in the organisation's culture.* ▪ Running pilot projects.* ▪ Choosing the right time to sell an issue. ▪ Selling issues up, down and across the organisation. ▪ Facilitating training to support change processes. 	<p>Andersson & Bateman (2000), Ashford <i>et al.</i> (1991), Bansal (2003), Bansal & Penner (2002), Doppelt (2003), Dunphy <i>et al.</i> (2003), Dutton <i>et al.</i> (2001), Egri (1995) and Sharma <i>et al.</i> (1999).</p>

Note: * = Behaviours most strongly emphasised within the literature.

For the type of emergent environmental leaders studied by the author, a number of behaviours were highly relevant and often distinguishing compared to leaders in control groups (see Taylor, 2008). These included several behaviours relating to transformational leadership (e.g. frequently articulating an inspiring vision, questioning the status quo, and expressing enthusiasm and confidence) and distributed leadership (e.g. gathering political and managerial support). Executive champions also engaged in enabling leadership to create environments for groups of their senior leaders to collaborate, innovate, experiment and learn (see Taylor, 2008).

Power

Power is the potential to influence others (Hughes *et al.*, 1995). Effective leaders tend to use personal power more often than position power (Hughes *et al.*, 1995; Yukl, 1989), even where they have access to high levels of position power.

The environmental leadership literature emphasises the importance of networking as a core leadership skill and an effective way to build personal power (Dunphy *et al.*, 2003; Frost & Egri, 1991; Portugal & Yukl, 1994). The social networks of these leaders appear to play a critical role in gathering information, accessing diverse skills and expertise, building coalitions of support, building contextual knowledge to help formulate influence tactics, and helping the leader to create a shared understanding among collaborators of the need for change and a vision of the future (Dunphy *et al.*, 2003; Portugal & Yukl, 1994).

All of the emergent environmental leaders studied by the author showed a preference for using personal rather than position power. In addition, high levels of personal power were common and often distinguishing compared to leaders in control groups. The most effective leaders also had moderate to high levels of *both* personal and position power. This helped them to exercise influence in vertical and lateral directions in their organisations and broader institutions. The most effective of these leaders also excelled at strategic

networking. This involves creating relationships to help deliver strategic organisational goals and is the most challenging form of leadership networking (see Ibarra & Hunter, 2007).

Context

Leadership is strongly affected by context (Bryman *et al.*, 1996; Pettigrew & Whipp, 1991). This relationship has, however, been understudied (Lowe & Gardner, 2000; Yukl, 1999).

The transformational leadership literature gives an indication of supportive contexts for environmental leaders given the transformational leadership style is commonly used by these leaders. This literature suggests transformational leaders are likely to emerge and be effective where: conditions are characterised by crises, rapid change and ambiguity; organisational task systems are dominated by 'boundary spanning units' (e.g. policy and strategic planning units with a focus that is external to the organisation); there is congruence between the prevailing social values and the organisation's goals; organisational structures are 'organic' (e.g. network, simple or adhocracy structures); and the organisational culture has an 'adaptive orientation' (i.e. characterised by innovation and support) (Bass, 1990; Burns, 1978; Egri & Herman, 2000; Pawar & Eastman, 1997; Shamir & Howell, 1999).

The author's research involving emergent environmental leaders in publicly-managed agencies found that several contextual factors strongly influenced their emergence and effectiveness (see Taylor, 2008). Important *internal* factors in these agencies included the nature of the organisational culture, the presence of complimentary programs to build a supportive organisational culture and leadership capacity, the nature of the organisational task system, support from colleagues, the organisational size, the nature of core tasks, resources and the supporting policy framework. Important *external* factors included the existence of environmental crises (with associated political and community concern), the pace and extent of change, the value and state of natural assets in the region, the history of environmental degradation concerning these assets, and the nature of the relationship between the community and these assets.

Processes of effective champion-driven environmental leadership

So far, this chapter has examined the factors that contribute to effective environmental leadership using the environmental leader as the 'unit of analysis'. Another perspective is to use the environmental leadership *process* as the unit of analysis, and examine the factors that contribute to its effectiveness. Figure 2 provides an overview of a typical champion-driven environmental leadership process in Australian, publicly-managed water agencies that involves the promotion of more sustainable practices. This emergent leadership process is unlikely to be unique to water agencies or even sustainability-focused organisations. It is likely to be relevant to other leaders who work in similar contexts, such as environmental leaders who are seeking to promote a transformation towards more sustainable practices but face a 'wicked problem'.

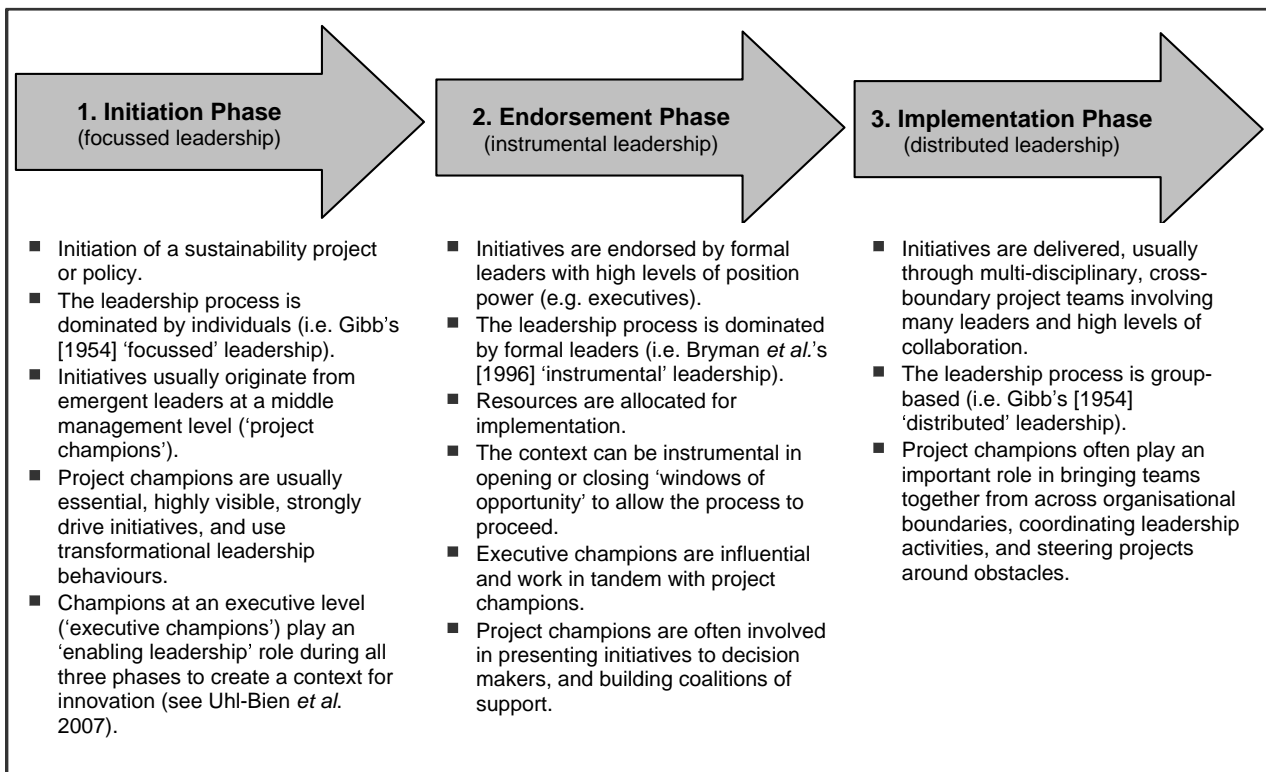


Figure 2 - A three-phase process model of champion-driven environmental leadership from research in Australian, publicly-managed water agencies (Taylor, 2008)

When environmental leadership is conceptualised as a process, such as the one shown in Figure 2, five features become apparent which have significant management implications. First, the leadership process relies on the personality characteristics and skills of many leaders, who typically work in different organisational units. In short, the process is a group-based phenomenon that spans intra and inter-organisational boundaries. Second, some leaders are instrumental in initiating leadership processes. In the model shown in Figure 2, project champions act as 'key change agents' (Ottaway 1983) to trigger and drive the bulk of the initiatives. Third, the leadership process is strongly affected by context (see Bryman *et al.* 1996). In the model shown in Figure 2, 'windows of opportunity' that open and close during the *Endorsement* phase are critical to the leadership process. Fourth, the relationship between senior and less senior leaders is important. For example, in the process shown in Figure 2, the Tandem Model of Championship (Witte, 1977) is in operation where 'executive champions' engage in enabling leadership (Uhl-Bien *et al.*, 2007) to support less senior 'project champions'. Finally, the process is highly dynamic. For example, leaders need to use different types of knowledge, relationships, behaviours, leadership styles and sources of power as the process evolves.

RELEVANT LEADERSHIP THEORIES

There are many leadership theories (see Horner, 1997; Northouse, 2004; Yukl, 1989), but none are universally accepted. This section includes a description of two theories that are relevant to environmental leaders. These theories have been helpful in understanding and explaining the behaviours of emergent environmental leaders (champions) who have been studied by the author.

Transformational leadership

Transformational leadership has featured strongly in studies of environmental leaders (see Danter *et al.*, 2000; Egri & Herman, 2000; Smith & Sarros, 2004). Transformational leaders are able to use transformational *and* transactional leadership styles to generate extra effort amongst colleagues and

improved leadership outcomes (Bass, 1999; Bass *et al.*, 2003). The transformational style involves the leader moving their colleagues “beyond immediate self-interests through idealized influence (charisma), inspiration, intellectual stimulation, or individualized consideration” (Bass, 1999, p. 11). Typical transformational leadership behaviours include developing a shared and compelling vision of the future, clearly communicating this vision, and displaying enthusiasm, confidence, persistence and optimism. In contrast, the transactional style involves an “exchange relationship between leader and follower to meet their own self-interests” (Bass, 1999, p. 10). Typical transactional leadership behaviours include providing assistance to colleagues in return for their assistance, and clarifying responsibilities for meeting specific targets.

Transformational Leadership Theory (Bass, 1985) has been the dominant theory in the leadership literature since the late 1980s. Reasons for its popularity include: strong empirical evidence that this leadership style is associated with desired performance outcomes across a wide range of organisational contexts (DeGroot *et al.*, 2000; Dumdum *et al.*, 2002; Lowe *et al.*, 1996); strong evidence that people can be trained to enhance some transformational leadership behaviours (Dvir *et al.*, 2002; Parry & Sinha, 2005); and its suitability for processes involving deep-seated cultural change within organisations (Avolio & Bass, 1995). This theory does, however, have its critics. For example, Gronn (1995) argued that it places too much emphasis on the role of individuals in the process of leadership, and is appealing because it “fulfils the promise of the hero” (p. 14).

Research by the author (see Taylor, 2008) has found that the most effective environmental champions were the strongest transformational leaders, as predicted by the theory. In addition, all of the studied champions frequently used behaviours associated with the ‘inspirational motivation’ element of the theory. That is, they frequently displayed enthusiasm, confidence, persistence and optimism about the future. They also clearly communicated a compelling vision for the issue they championed.

Complexity leadership

‘Complexity Leadership Theory’ (Uhl-Bien *et al.*, 2007) is a relatively new view of leadership that draws on complexity theory (see Marion, 2008) and builds on the distributed / shared models of leadership (see Carson *et al.*, 2007; Gibb, 1954). It suggests that particular leadership behaviours are needed for complex challenges, like those commonly faced by environmental practitioners (Commonwealth of Australia, 2007), as well as contexts where events are not predictable and traditional forms of focused, top-down leadership have not been highly effective (Schneider & Somers, 2006).

Proponents of complexity leadership believe that three entangled forms of leadership are needed in organisations to address complex challenges. ‘Administrative’ leadership refers to the traditional activities of executive staff, such as strategic and corporate planning (i.e. what Kotter, 2001 would call ‘management’ behaviours). ‘Enabling’ leadership refers to the activities of senior staff who foster environments where high levels of interaction can occur. This interaction is labelled ‘adaptive’ leadership. During adaptive leadership, many leaders from across organisational boundaries come together to innovate, learn, resolve task-related conflict, and collaborate to solve elements of complex challenges. It is therefore a type of coordinated, distributed leadership (see Gibb, 1954; Gronn, 2004).

Complexity Leadership Theory focuses on the role of *enabling* leaders. Effective enabling leaders focus on creating the “structures, rules, interactions, interdependencies, tension and culture” (Marion, 2008, p. 11) to allow unanticipated outcomes to emerge from processes of adaptive leadership. They also encourage destabilisation of the status quo, task-related conflict, discussion forums, innovation, cross-boundary social networks, systems thinking and information sharing, as well as coordinate leadership activities, provide resources for adaptive leadership and help to interpret change (Plowman *et al.*, 2007; Marion & Uhl-Bien, 2001; Snowden & Boon, 2007; Uhl-Bien *et al.*, 2007; Van Velsor, 2008). These leaders also manage the tension that typically occurs between the new ideas that flow from adaptive leadership processes and the established practices that are reinforced by administrative leadership (Uhl-Bien *et al.*, 2007). Enabling leadership suits senior leaders who are patient, comfortable with uncertainty, open to new ideas and have a propensity to enable rather than control change (Plowman *et al.*, 2007; Snowden & Boon, 2007).

Research by the author (see Taylor, 2008) has found the concept of enabling leadership to be particularly relevant to the activities of environmental champions at an executive level who work in tandem with champions at a project level to drive leadership processes such as the one shown in Figure 2. Enabling leadership behaviours that are undertaken by executive champions include actively managing the dominant organisational culture and establishing mechanisms (e.g. strategic forums) to foster cross-boundary

collaboration, experimentation and learning. These leaders expect that they do not know the solution to complex challenges, are comfortable with uncertainty, and recognise that they must create environments for groups of leaders from across organisational boundaries and managerial levels to collectively address complex, dynamic environmental challenges. The most effective executive champions used advanced transformational leadership abilities to drive corporate programs to change the organisation's dominant culture so that it encouraged adaptive leadership.

MANAGEMENT IMPLICATIONS

This section broadly describes four strategies to build environmental leadership capacity within and across sustainability-focused organisations. Such strategies are based on the premise that leadership can be taught and learnt (Doh, 2002; Zimmerman-Oster & Burkhardt, 1999), although some people have greater potential for leadership than others due to their innate personality traits (Doh, 2002; Yukl, 1981).

Be proactive

This paper has described some of what we know about the factors that contribute to effective environmental leaders and leadership processes. Analysis of these factors quickly reveals that the majority can be managed either directly or indirectly over the medium to long-term to build relevant forms of leadership capacity as one lever to drive change. The introduction to this paper gave examples of indirect and direct ways to do this. The alternative to a proactive, interventionist strategy is to simply wait and hope that a group of leaders will emerge across managerial levels and organisational boundaries; each of these leaders has a suite of advanced leadership skills that happens to match their leadership context; and they then instinctively form well-designed social networks to participate in highly coordinated forms of distributed leadership. Taking this approach is at best, optimistic.

Attract and recruit potential leaders

Attraction and recruitment strategies aim to identify people with the greatest leadership potential (e.g. those with the personality traits listed in Table 1). In general, informal strategies to attract potential leaders are preferable to formal recruitment strategies (Strelecky, 2004). An example of an attraction strategy is using senior leaders (especially those with transformational leadership abilities) to publicly demonstrate that leadership excellence is part of the organisation's culture.

Another strategy is to ensure standard recruitment processes for professional roles routinely look for leadership potential, as well as job-specific competencies. This helps to build 'distributed leadership' (Gibb, 1954) throughout the organisation, not just at executive levels. Such leadership is needed to address complex challenges (see Drath, 2003a & 2003b).

For critical positions in the organisation that require exemplary leadership, the use of psychometric instruments within assessment centres is recommended. Leadership researchers strongly promote such an approach to identify the presence and absence of specific personality characteristics during the recruitment of potential leaders (see Hogan & Kaiser, 2005).

Finally, recruitment processes should look for congruence between the leader's personal values, values within the organisational culture, the personal values of team members, and the environmental issue requiring leadership.

Strategically build the leadership skills of professionals when they are ready

Leadership development is a challenging, life-long process that relies upon individuals taking personal responsibility, and has many pre-requisites such as self-awareness and developmental readiness (see Avolio, 2005). When professionals are ready to build their leadership capacity, there are many interventions that can be used. For example, organisations committed to building leadership capacity would typically have an *ongoing* leadership development program that includes a suite of leadership development short courses for different types of leaders (e.g. executive, line management, team leader and champion / change agent leaders), as well as complimentary mentoring programs and succession planning mechanisms. Interventions would focus on building the leadership capacity of individuals and teams. Even where environmental

champions are needed to act as catalysts of change, leadership development interventions should not focus solely on these leaders, as they do not operate in isolation (see Figure 2).

Leadership development short courses should be aligned with organisational strategies, grounded in relevant theory and local research, and integrated with the organisation's human resource management processes (see McCauley & Van Velsor, 2004). Typically, these courses begin with leaders attending a three to six month feedback-intensive course with a 360 degree feedback component (Chappelow, 2004) to identify their strengths and weaknesses as leaders, and training modules. At the end of this phase, leaders usually prepare ongoing, individual leadership development plans that incorporate elements of assessment, challenge and support. Such plans typically include further development activities, such as specific behavioural modifications, mentoring arrangements, actions relating to different forms of networking, and challenging job assignments.

Create an enabling context

As leadership is strongly affected by context, astute senior leaders can change aspects of their organisations to encourage leaders to be attracted to the organisation, emerge, be more effective and stay. For example, executive leaders can play a critical role in creating organisational cultures that nurture desired forms of leadership at all levels. The author's research involving emergent environmental leaders found that the most effective leaders worked in agencies with executive-driven programs to manage the organisation's dominant culture. These agencies also had complimentary leadership development programs to promote desired forms of behaviour. Highly supportive cultures were characterised by a commitment to continuous learning, innovation, adaptive management, responsible risk-taking and sustainability.

Another strategy is to be aware of environments within the organisation where transformational environmental leaders are likely to emerge or be attracted to (e.g. 'boundary spanning units', such as policy units, experiencing rapid change), so that the development of these leaders can be accelerated. Senior leader-managers can also seek to match the developmental needs of emerging leaders to organisational environments that will assist their development. For example, a leader-manager could use a challenging job assignment (with the elements of assessment, challenge and support) as a strategy to help a nascent leader build new skills, knowledge and networks while achieving organisational goals.

Finally, senior leaders who are faced with 'complex challenges' / 'wicked problems' should seek to engage in enabling leadership (Uhl-Bien *et al.*, 2007) as described earlier in this paper. Such leadership aims to create environments for groups of leaders across managerial levels and organisational boundaries to frequently interact, collaborate, resolve conflict, experiment and learn. This style of leadership is the antithesis of traditional 'management' behaviours that involve directing and controlling (see Kotter, 2001), and requires leaders with particular attributes such as being comfortable with uncertainty, the ability to undertake systems thinking (see Senge, 1990), and transformational leadership skills (see Bass, 1985 & 1999).

CONCLUSIONS

This paper has highlighted that the context typically faced by environmental practitioners is one that places increased importance on certain forms of environmental leadership and leaders with particular attributes. This is particularly the case for environmental practitioners facing 'wicked problems', like those commonly associated with climate change. In these contexts, certain forms of leadership can be a leverage point (Senge, 1990) to help make the transition to more sustainable practices. If practitioners wish to use this lever, they require knowledge of the factors that contribute to effective environmental leaders and leadership processes, and evidence-based strategies to build appropriate forms of leadership capacity. They also need to take a proactive, medium to long-term view and gradually build leadership capacity across institutions to enable change. Such an approach complements more traditional strategies such as developing new technology, technical skills, policy instruments, legislation and incentives.

This paper concludes by communicating three key messages. First, it is important to invest in building leadership capacity throughout and across sustainability-focused organisations, particularly where such organisations operate in contexts characterised by change, turbulence, crises and 'wicked problems'. Such contexts require high levels of particular forms of leadership (e.g. enabling and distributed leadership), and leaders with particular attributes (e.g. the ability to frequently use transformational leadership behaviours).

Second, leadership paradigms are changing in response to the way organisations are evolving. In particular, this paper highlights how environmental leadership can be viewed as a *process of influence* that typically involves many leaders. From this perspective, leadership development strategies should seek to develop leadership capacity *throughout* organisations as well as across institutions. This ensures that environmental leadership processes benefit from the input of many capable leaders.

Finally, this paper presents some key research findings and relevant theory from the 'environmental leadership' and 'leadership development' literatures. This knowledge base is intended to help leader-managers to improve their understanding of the factors associated with effective environmental leaders and environmental leadership processes, as well as the practical strategies that can be employed to build leadership capacity. These strategies include: being proactive; attracting, recruiting and developing the leadership abilities of environmental leaders; and creating enabling environments for these leaders to emerge and thrive.

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