Ten attributes of emergent leaders who promote sustainable urban water management in Australia

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ABSTRACT

This paper highlights and discusses ten attributes of emergent leaders (also known as 'champions') who worked as influential change agents within publicly-managed, Australian water agencies to help promote more sustainable forms of urban water management. These attributes relate to: the 'openness to experience' personality characteristic; career mobility and work history demographics; personal and position power; strategic social networks; the culture of their organisations; and five distinguishing leadership behaviours (e.g. persisting under adversity).

Guided by the findings of an international literature review, the author conducted a multiple case study involving six Australian water agencies. This research identified attributes of these leaders that were typically strong and/or distinguishing compared to relevant control groups, as well as influential contextual factors.

While it is widely acknowledged that these leaders play a critical role in the delivery of sustainable urban water management, there has been a paucity of context-sensitive research on them. The research project highlighted in this paper is a response to this situation and has led to the development of a suite of practical, evidence-based strategies to build leadership capacity throughout water agencies. Such capacity is one of the elements needed to drive the transition to more 'water sensitive cities'.

KEYWORDS

Emergent leaders; leadership; champions; sustainable urban water management; attributes.

INTRODUCTION

The move towards more water sensitive cities

There is growing awareness that traditional approaches to urban water management[1] are no longer sustainable due to impacts such as waterway degradation (Butler & Maksimovic, 1999; Wong, 2006). These approaches are now seen as being inconsistent with the contemporary values of many Western countries (see Ashley *et al.*, 2004; Brown *et al.*, 2006; Niemczynowicz, 1999).

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[1] Centralised water supply, wastewater management and stormwater management systems that place little emphasis on water efficiency, recycling, energy efficiency and protection of environmental values.

A new paradigm of 'sustainable urban water management' (SUWM) has emerged (see Wong, 2006) building on early contributions from Mouritz (1997) and Newman & Kenworthy (1999). Adopting this paradigm at a city-wide scale and thereby making the transition to 'water sensitive cities' (Monash University, 2007) is, however, problematic. As highlighted by Brown & Farrelly's (2007) meta-analysis of the literature, numerous impediments exist to the adoption of this paradigm; the bulk of which are socio-institutional rather than technical. These socio-institutional barriers result in a phenomenon called 'institutional inertia' (Brown, 2005b; Brown et al., 2006) where the "agreed vision for sustainable water management is not realised in the delivery of such outcomes in the current institutional system" (Brown et al., 2006, p. 5-2). It is within an environment of institutional inertia that emergent leaders known as 'champions' sometimes emerge to act as change agents (White, 2006) and promote the SUWM paradigm.

Sustainable urban water management champions
There is no consistent definition of champions within the literature (see Andersson & Bateman, 2000; Howell et al., 2005; Markham et al., 1991; Schon, 1969; White, 2006). The author's research has, however, found that practitioners within Australian urban water agencies typically define 'SUWM champions' as being emergent leaders who have specific attributes and are adept at influencing others to adopt SUWM principles and practices. These attributes include: the personality characteristics of innovation, creativity, persistence, resilience and passion for SUWM; a strong personal commitment to SUWM and environmental sustainability; a good general knowledge of the water industry and associated technology; advanced skills at exercising influence (e.g. via strong communication skills); power through their social networks, expert knowledge and credibility amongst colleagues; and key leadership behaviours, such as identifying influence opportunities, choosing the right influence tactics for the right target and time, executing a variety of such tactics, developing and encouraging colleagues, and undertaking advanced forms of social networking.

The literature on 'champions of innovation' highlights the existence of two types of champion that may exist within an organisation. These are 'project / product champions' and 'executive champions' (see Howell & Higgins, 1990a; Howell et al., 2005; Maidique, 1980). This literature suggests project champions act as change agents on a daily basis within organisations or broader institutions, and primarily rely on personal forms of power. In contrast, executive champions are more senior leaders with high levels of position power who allocate resources to innovations and who share some of the associated risks (see Maidique, 1980). Executive champions rarely promote innovations on a daily basis and may work in tandem with less senior project champions (Witte, 1977). The author's research within Australian water agencies has found this typology to be relevant to SUWM champions.

The importance of champions
It is now widely accepted in Australia that SUWM champions play a critical role in the transition to water sensitive cities. This conclusion is supported by academics (see Brown, 2003; Brown et al., 2006; Lloyd, 2000; Mitchell, 2004), industry practitioners (see Edwards et al., 2006; Keath & White, 2006; Newton et al., 2006; White, 2006) and politicians (see Commonwealth of Australia, 2002). To illustrate, Brown & Clarke (2007) examined the evolution of sustainable forms of urban stormwater management in Melbourne and concluded that "an important driver of Melbourne's transition [to a more water sensitive city] was the legacy of a committed and innovative group of associated champions working across multiple sectors to advance change" (p. iv).

Despite the importance of these leaders, little is known about them. Previous research by Brown (2003), Brown & Clarke (2007) and White (2006) has highlighted some of their attributes. Taylor (2007) brought findings of this and other related bodies of research together to build a preliminary conceptual model of SUWM champions. There has been, however, a paucity of focused, in-depth, context-sensitive research on these leaders that has been grounded in leadership theory and that has used established leadership research methods. Such research must be done in order to design *evidence-based* strategies to attract, recruit, supervise and build the leadership capacity of SUWM champions in water agencies, as well as improve the overall SUWM leadership process that typically involves many different types of leaders[2].

Overview of this paper
This paper describes a PhD research project (2006-2009) that is investigating the attributes of SUWM project champions within publicly-managed Australian urban water agencies and shares some of the project's findings in relation to key champion attributes. This project has used this knowledge to develop evidence-based strategies to promote emergent leadership in the water industry and accelerate the transition to more water sensitive cities (see Taylor, 2008). In the following sections, the author describes the project's methodology, and highlights ten attributes of SUWM project champions that are commonly strong and distinguishing. The paper also describes how knowledge of such attributes can be used in practice to encourage emergent leadership in water agencies to drive SUWM policies and projects. Finally, the author acknowledges some limitations to the research and discusses three salient lessons that can be learnt from the project.

METHOD
The research presented in this paper involved two phases. Phase 1 (2006) was an international literature review (see Taylor, 2007) involving five bodies of literature. These were the SUWM champion, environmental leadership, 'champions of innovation', organisational leadership, and leadership development literatures. This review helped to develop *preliminary* conceptual models of leadership by SUWM champions (Taylor, 2007) and strategies to enhance emergent leadership in water agencies.

Phase 2 (2007-08) involved a multiple case study (see Yin, 2003). The author gathered data from six publicly-managed urban water agencies in four Australian States. These agencies hosted SUWM project champions who were well-known within the local water industry. Within each case study agency the author conducted group interviews with staff who played different roles in promoting SUWM. As part of each interview, the author facilitated an anonymous peer nomination process to identify six staff members who were performing specific leadership roles, including the role of 'SUWM project champion'. The descriptions of these roles were initially derived from the literature (see Esteves & Pastor, 2002; Howell & Higgins, 1990a; Maidique, 1980) and then refined through consultation with practitioners in the SUWM industry. Individual interviews were then conducted with the people most strongly nominated by their peers for the six leadership roles, and a two-part '360 degree questionnaire' (see Chappelow, 2004) was used to gather data from these leaders, their supervisors and five of their peers. The individual interview protocol and the questionnaire were designed to test the validity of the preliminary conceptual model of leadership by

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[2] See Taylor (2008) for a three-phase model of typical SUWM leadership processes in publicly-managed, Australian water agencies.

SUWM champions (see Taylor, 2007). The author also conducted an interview in each case study agency and analysed relevant documents (e.g. strategic plans) to gather additional information on the context in which champions worked, as leadership is acutely sensitive to context (Bryman *et al*., 1996; Pettigrew & Whipp, 1991). Finally, principal findings of the research emerged from a cross-case analysis (see Yin, 2003).

RESULTS AND DISCUSSION

This section highlights and discusses ten attributes of SUWM project champions that have emerged from this research project. For an overview of the large number of attributes that were investigated, see the preliminary conceptual model of leadership by SUWM champions in Taylor (2007). The *framework* of this model is presented in Figure 1. The ten attributes included in this paper have been chosen as examples of strong findings from each major element of the model.
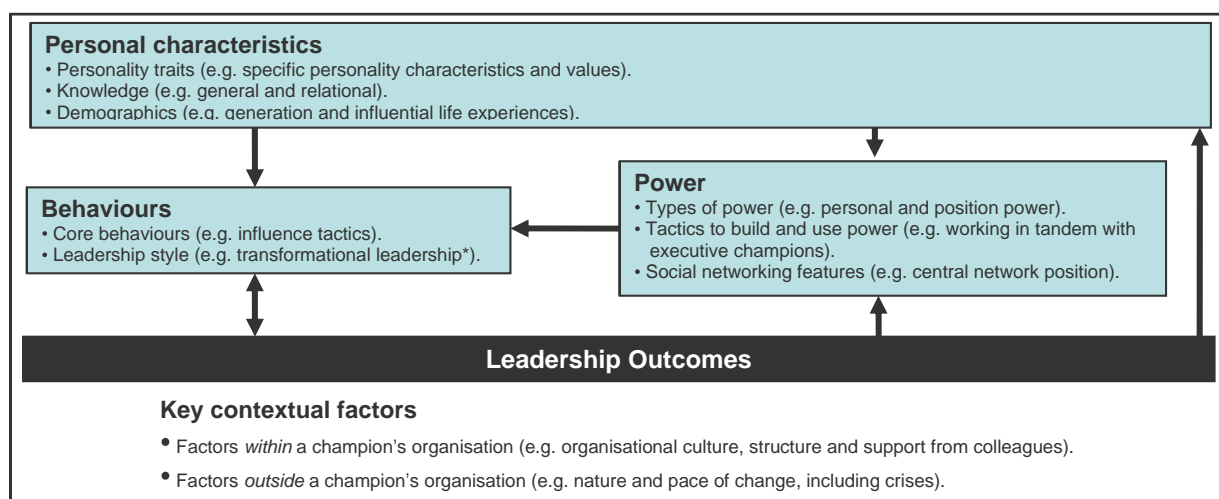

Personal characteristics
• Personality traits (e.g. specific personality characteristics and values).
• Knowledge (e.g. general and relational).
• Demographics (e.g. generation and influential life experiences).

Behaviours
• Core behaviours (e.g. influence tactics).
• Leadership style (e.g. transformational leadership*).

Power
• Types of power (e.g. personal and position power).
• Tactics to build and use power (e.g. working in tandem with executive champions).
• Social networking features (e.g. central network position).

Leadership Outcomes

Key contextual factors
• Factors *within* a champion's organisation (e.g. organisational culture, structure and support from colleagues).
• Factors *outside* a champion's organisation (e.g. nature and pace of change, including crises).

Figure 1. Framework of the preliminary conceptual model of leadership by SUWM project champions (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).

1. Personality characteristics: openness to experience

Openness to experience is one of the dimensions of the Five Factor Model of Personality (Tupes & Christal, 1961) and relates to a person's propensity to be innovative, creative and open to new approaches. The strength of this personality characteristic was assessed through individual interviews and the 360 degree questionnaire (using self and peer ratings). Figure 2 presents self-assessed data from the 360 degree questionnaire for illustrative purposes.

Analysis of all the available data indicated this characteristic was usually strongly developed amongst the champions, and often stronger[3] than their peers in the same organisation who occupied 'non-champion' SUWM leadership roles. This result is consistent with the preliminary conceptual model.

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[3] As this research was primarily qualitative and involved only six case studies, a leadership attribute was considered to be substantially different from a control dataset and "distinguishing" if it was at least 10% different on the relevant scale. The 10% figure was derived from visual assessment of plotted data.
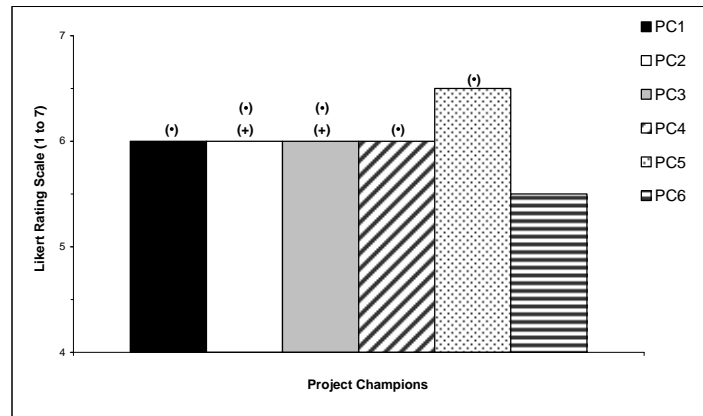
Figure 2. Data on the strength of the openness to experience personality characteristic (self-assessed). Derived from using the Ten-item Personality Inventory (TIPI; Gosling *et al*., 2003) within the 360 degree questionnaire.

Notes:

- PC = project champion. (+) = at least 10% higher on the scale than averaged equivalent data from a control group consisting of peers in 'non-champion' SUWM leadership roles. (•) = at least 10% higher on the scale than average data from an international data set (N = 1,813) reported by Gosling *et al*. (2003).

- The TIPI asked leaders to rate their extent of agreement with a set of ten items (e.g. "I see myself as open to new experiences"). Key for the scale: 1 = disagree strongly; 2 = disagree moderately; 3 = disagree a little; 4 = neither agree nor disagree; 5 = agree a little; 6 = agree moderately; and 7 = agree strongly.

Management strategies that follow from this finding include looking for this personality characteristic to be strongly developed during recruitment activities as well as selection processes for leadership development programs within water agencies. This can be done through psychometric testing (with the assistance of suitably trained psychologists) or simply through informed analysis of people's work and life history during interviews and when reviewing resumes. The key point here is that this personality characteristic is one of the indicators that can be used to identify *potential* champions who can become highly valuable assets to the organisation.

2. Demographics: career mobility and work history

The author gathered data on the number of roles and jobs the champions had held in the last five years via the 360 degree questionnaire, and data on their work history via individual interviews. The majority of these champions had a higher degree of career mobility than typical 'non-champion' leaders in their organisations, as predicted by the preliminary conceptual model. Despite showing a tendency for career mobility, some of the studied champions had long tenures with their organisations (i.e. up to 16 years), highlighting that these leaders can be assets to their organisations over long periods.

A multiple criteria analysis, involving eight criteria, peer and supervisor ratings from the 360 degree questionnaire and a sensitivity analysis was used to determine the *relative* effectiveness of the six champions. This allowed the author to examine the attributes associated with the most effective champions. For the attribute of career mobility, the more effective champions generally had a higher level of career mobility than the least effective champions. This finding is consistent with research that emphasises the value of 'job assignments' in leadership development. For example, job assignments are used to develop skills relating to team leadership, strategic thinking and influence tactics (Day, 2000; McCall *et al*., 1988). In addition, research has found that such assignments have assisted 'champions of innovation' to build self-confidence, gain contextual knowledge and create valuable social networks (Howell & Higgins, 1990b & 1990c).

The relatively diverse work history and high career mobility of the champions are attributes that are probably related to their relatively strong openness to experience personality characteristics. This potential relationship is apparent from the following quote from one of the champions who was asked about the strength of their openness to experience personality characteristic:

> That's almost my actual existence, and that expands right across my professional and personal life, always – [I] can't stand still for very long. *[Interviewer: So your resume would be varied?]* It is varied, yes. … I'm not frightened to step out of - in fact, I don't like being very comfortable and in order to get up the ladder I sort of stepped into roles that … give me the experience I need ...

Management strategies that flow from these findings include proactively seeking to accommodate the tendency of champions to want to take on new roles. Water agencies could seek opportunities to place emerging leaders in roles that benefit the organisation but are also structured 'job assignments' within individual leadership development plans (see McCauley & Van Velsor, 2004). Greater benefits are likely to accrue if such assignments are provided early in a leader's career (Adair, 2005; Conner, 2000).

3. Power: personal and position power

Power is the potential to influence others (Hughes *et al.*, 1995). Personal power is derived from the personality characteristics and skills of the leader, as well as the outcomes from previous episodes of leadership (Yukl, 1981). Position power is derived from a person's formal role within the organisation (Yukl, 1981).

As shown in Figure 3, all of the champions had a preference for using more personal than position power. This preference was a distinguishing attribute for half of the champions. These findings are consistent with the preliminary conceptual model, given the role these leaders play in influencing people across organisational boundaries.
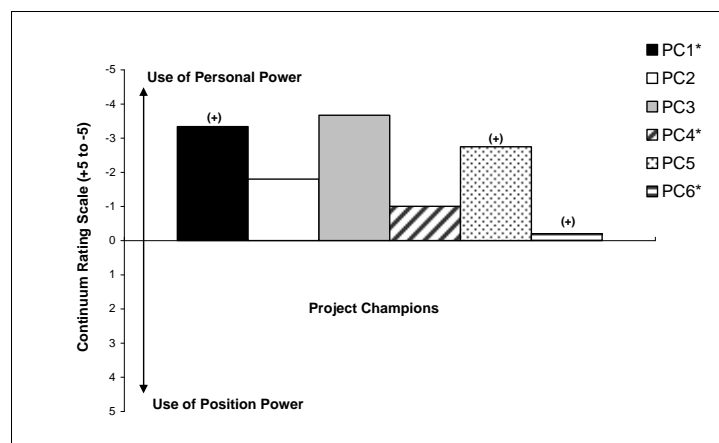

Figure 3. Data on the relative use of personal and position power (average peer ratings).

Notes:
- PC = project champion. (+) = at least 10% higher on the scale than averaged equivalent data from a control group consisting of peers in 'non-champion' SUWM leadership roles.
- The 360 degree questionnaire asked peers to rate the relative extent to which the leader being rated used personal and position power on the continuum rating scale shown above. Definitions of these types of power from Yukl (1981) were also provided.

The research found that five of the six champions possessed 'moderate' to 'strong' levels of personal power. A high level of personal power was also a distinguishing attribute for most of these leaders. Levels of position power were, however, generally lower. The most effective champions had at least 'moderate' levels of *both* personal and position power.

Management strategies that build on these findings include ensuring leadership development programs for emergent SUWM leaders focus on the tactics and skills that are needed to build personal power. Examples include social networking strategies and 'interpersonal' skills (e.g. advanced communication and active listening skills).

4. Social networks: strategic networks

Research by Ibarra & Hunter (2007) examined three forms of social networking: operational, personal and strategic. They found that strategic networking is the most challenging type of networking, is typically underdeveloped, but is commonly a characteristic behaviour of the most effective organisational leaders. This type of networking focuses on building relationships to achieve medium to long-term, strategic organisational goals.

The author examined aspects of social networking through individual interviews with the champions and the 360 degree questionnaire. Strategic networking was found to be a major point of difference between the surveyed leaders. Generally, this form of networking was uncommon amongst the leaders in 'non-champion' leadership roles, common amongst the executive champions, and ranged from being a very strong to very weak attribute amongst the project champions. Four of the six project champions engaged in some strategic networking, with three of these leaders being exceptionally focused on building relationships with powerful people (e.g. local government politicians and executives) who could help them to meet both organisational and personal goals. Of the three most effective project champions, two were very strong strategic networkers, while amongst the three least effective champions, two were very weak at this competency. The following quote gives an insight to some of the tactics used by one champion to build strategic networks with local government politicians:

> … I've tried … getting to know those political players a little bit better, on a personal level, and working out how they operate, how to win them over, how to actually influence them more. *[Interviewer: Is getting access to Councillors difficult?]* Usually, yes. *[Interviewer: What's the trick from a middle management level?]* Usually it's defining what their interests are, if they have particular passions, whether it be a certain place or whether it be a certain issue, finding out what that is and then maybe going out of your way a little bit to actually help them on that or give them information on it.

Management strategies that can draw on these findings include the need to teach emerging SUWM leaders about the different types of networking, key social network theories and research findings, and tactics for all three forms of networking (with an emphasis on the strategic form). Such an approach contrasts with traditional networking education which normally focuses on operational networking (Ibarra & Hunter, 2007). Organisations could also create networking opportunities for emergent leaders. For example, in one of the case study agencies, informal, regular, subject-based discussion forums provided a valuable opportunity for staff throughout the organisation to interact with executives and local government politicians to build strategic knowledge and networks.

5 - 9. Behaviours: five highly relevant and often distinguishing leadership behaviours

Figure 4 shows the extent to which five behaviours from the preliminary conceptual model were relevant to the champions, as assessed by their peers (i.e. 'articulating an inspiring vision', 'questioning the status quo', 'gathering political and managerial support', 'expressing enthusiasm and confidence', and 'persisting under adversity'). These behaviours were usually highly relevant and often distinguishing compared to local control groups. In addition, 'questioning the status quo' and 'gathering political and managerial support' were leadership

behaviours that were generally more relevant to, and more commonly distinguishing behaviours of, the three most effective champions.
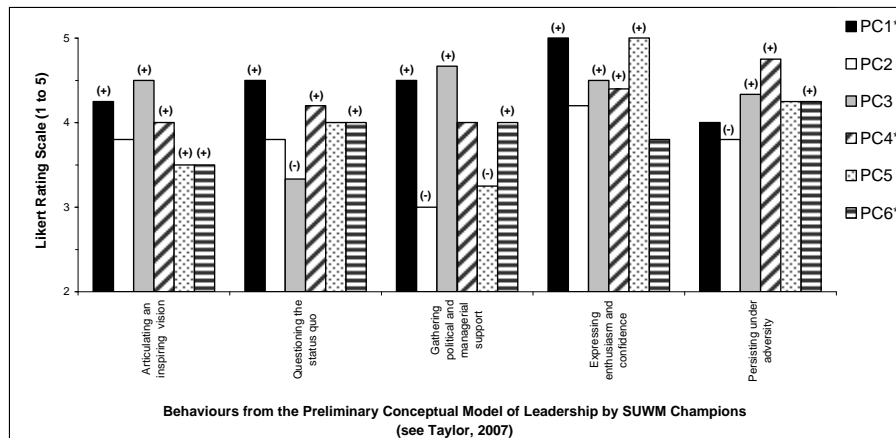

Figure 4. Ratings for the relevance of five leadership behaviours (average peer ratings).

Notes:

- PC = project champion. (+) = at least 10% higher on the scale than averaged equivalent data from a control group consisting of peers in 'non-champion' SUWM leadership roles. (-) = at least 10% lower on the scale than averaged equivalent data from a control group consisting of peers in 'non-champion' SUWM leadership roles. * = the three most effective champions.

- The 360 degree questionnaire asked peers to rate the extent to which specific behaviours were relevant to the leader being rated. Key for the scale: 1 = none; 2 = low; 3 = moderate; 4 = high; and 5 = very high.

Management strategies that follow from these findings include the need to build the necessary skills, confidence and support mechanisms so that emergent SUWM leaders can effectively use these five behaviours. Ideally, attempts to do this would begin with a customised, 'feedback-intensive' leadership development program (see Guthrie & King, 2004). Executives can also play a key role in actively managing the organisation's culture to support the use of such behaviours throughout the organisation.

10. Context: organisational culture

The research found that organisational culture was a highly influential contextual factor that affected the emergence and effectiveness of champions. In all six case study agencies, the sub-culture at the 'branch' level (i.e. the third structural tier) had an 'adaptive orientation', as predicted by the preliminary conceptual model. That is, the cultures were innovative and supportive rather than rule and goal-orientated (see Pawar & Eastman, 1997; Shamir & Howell, 1999).

The most effective champions generally emerged in agencies that had complimentary organisational culture and leadership development programs that were driven by the most senior executives. These programs strongly encouraged collaboration and group-based (distributed) forms of leadership (see Gibb, 1954). In addition, these champions generally worked for agencies that had unusually strong, corporate cultures that encouraged continual learning, adaptive management, responsible risk-taking, innovation and environmental sustainability. These findings are consistent with the preliminary conceptual model.

Management strategies that can draw on these findings include the need for executive leaders to actively foster organisational cultures that support the SUWM paradigm and develop complementary styles of leadership throughout the organisation. Leadership theory and this research project suggest that executive leaders with strong transformational leadership

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attributes are best suited to this task (see Avolio & Bass, 1995; Bass, 1985; Bass & Avolio, 1993 & 1994).

CONCLUSIONS

This paper has highlighted ten attributes of emergent leaders (project champions) that worked within publicly-managed Australian water agencies to promote SUWM. While this list of attributes is not exhaustive, it gives an indication of the findings that are flowing from a three-year (2006-2009) PhD research project that is investigating the 'champion phenomenon' (see Commonwealth of Australia, 2002) in the context of SUWM. Final research findings will be made available at: www.urbanwatergovernance.com in late 2008.

This research is significant for two reasons. First, it is the first time that *leadership* theory, research findings and research tools have been used to study leaders who play a critical role in promoting SUWM and making the transition to more water sensitive cities. Second, it provides a platform of knowledge on which management strategies, such as those highlighted in this paper, can be constructed within water agencies. Such strategies aim to harness the potential of the 'champion phenomenon' as well as enhance leadership capacity throughout water agencies, given that many leaders contribute to typical SUWM leadership processes (Taylor, 2008).

The research does, however, have its limitations. As leadership is highly sensitive to context (Bryman *et al*., 1996), the author used a multiple case study research design (Yin, 2003). This resulted in the project being primarily qualitative and focusing on project champions from six publicly-managed Australian urban water agencies. A consequence of this research design is that my findings can only be generalised to other contexts (e.g. other water agencies) through relevant theory and conceptual models, rather than through statistical techniques.

This research has generated three main lessons. First, it has highlighted the value of undertaking cross-disciplinary research. In particular, the project benefited greatly from being able to use theories and research methods from the leadership literature in the context of urban water governance research. Second, while research designs and methods that are needed for *context-sensitive* leadership research are time consuming and require significant cooperation from industry partners, they are also productive. Finally, as illustrated in this paper, there are attributes of SUWM champions and their leadership context that are commonly strong and/or distinguishing compared to relevant control groups. This knowledge can be used to design practical, evidence-based strategies (see Taylor, 2008) to attract them, recruit them, and realise their leadership potential within water agencies that are seeking to promote SUWM.

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