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Promoting post-conventional consciousness in leaders: Australian community leadership programs

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ABSTRACT

This study explored the impact on consciousness development of participating in either standard or enhanced community leadership programs (CLPs) in Australia. Aligned with Manners' and Durkin's (2000) conceptual framework, CLPs offer experiences that are interpersonal, emotionally engaging, personally salient and structurally disequilibriating for later conventional consciousness stages. Enhanced CLPs include additional psychosocial challenges. Participants were 335 adults who took part in one of 4 standard CLPs, 7 enhanced CLPs and 2 (control) management programs. Modal program length was 10 months. Standard and enhanced CLPs were successful in facilitating consciousness development (as measured by the Washington University Sentence Completion Test—WUSCT) within the conventional stages. However, enhanced CLPs were significantly more successful in triggering post-conventional development, and specifically in those participants who had a preference for Sensing (as measured by the Myers–Briggs Type Indicator—MBTI). Enhanced CLPs could provide a model for other development programs aimed at promoting post-conventional consciousness.

Introduction

Humanity clearly needs to come to terms with the complexity and urgency of our adaptive global and local challenges. These challenges involve multiple systems and threats in which the solution to one part of the problem may unintentionally exacerbate another (Heifetz, Grashow, & Linsky, 2009). Adaptive issues cannot be solved with technical expertise—no matter how 'state-of-the-art'. Nor can they be solved with charismatic or single minded leadership—no matter how alluring these qualities may seem in times of uncertainty. As Kegan (1994) noted "The expectations upon us [in modern life]…demand something more than mere behaviour, the acquisition of specific skills, or the mastery of particular knowledge. They make demands on our minds, on *how* we know, on the complexity of our consciousness" (p. 5). We are, as he asserted, 'in over our heads' with the kinds of adaptive challenges we are facing today; our 'conventional' consciousness is not geared to respond effectively.

Once the purview of education and counselling programs, adult constructive development theory and research has recently begun to impact the field of management and leadership (Laske, 2003; McCauley, Drath, Palus, O'Connor, & Baker, 2006). Constructive developmental theory focusses on how individuals construct their understanding of self (consciousness)—the principles by which they make meaning. As meaning-making capacity expands, so does the capacity to cope with complexity and ambiguity, to self-reflect, to collaborate more effectively with diverse others, view problems holistically and engage with them courageously and creatively (Cook-Greuter, 1999, 2004). Increasingly, these capacities are seen as the drivers of success in leadership (Australian Workforce and Productivity Agency, 2013).

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Constructive developmental theorists argue that resolution of the 21st-century adaptive challenges we are facing in our organisations, communities and at a global level, require a fundamental mind shift in leadership; not just an alternative set of views about the world, but an alternative way of arriving at such views (Donovan, 1997). This new way of thinking and comprehending must transcend the interests of any one individual, group or country (Hewlett, 2004). It must recognise the ways in which our realities are constructed and integrate multiple perspectives and multiple systems to challenge existing ways of thinking (Palus & Drath, 1995). It must take a long-range perspective, be willing to experiment, and have the high tolerance for ambiguity and uncertainty that will be required for generating alternative futures. These are the capacities that have been found to evolve at postconventional levels of development (Cook-Greuter, 1999; Hewlett, 2004; Kegan, 1994; Miller & Cook-Greuter, 1994). Now more than ever, the world needs leaders who operate from post-conventional consciousness because of their transformational capacity, agility, creativity, flexibility and mature insight (Barker & Torbert, 2011; Cook-Greuter, 2004; Joiner & Josephs, 2007; Kegan & Lahey, 2009; Rooke & Torbert, 2005).

This research explored whether development to post-conventional consciousness could be facilitated within Australian community leadership programs. Such programs are similar to those run by the American Leadership Forum and the UK's Common Purpose. There are currently around 18 such programs operating out of capital cities and regional centres around Australia with a combined total of more than 6000 graduates. Attracting diverse groups of emerging and established leaders, such programs may be an important way in which to assist a broad range of individuals to develop their consciousness and to create a 'snowball' effect of higher level thinking that, as Donovan (1997) suggested, is dispersed throughout the institutions, systems and structures of our societies and eventually lifts everyone's capacity. They may also provide a model for the development of other programs aimed at supporting people to transform their current way of making sense of the world.

Table 1
Stages of consciousness development.

Tier	Stage	Typical manifestations
Preconventional	(impulsive)	Dependent on others for control. Physical needs and impulses. Others understood in simple dichotomies (good and bad, clean and dirty etc.). Rules poorly understood.
	Opportunist (self-protective)	Fragile self-control. Short time horizon (hours to days). Focus on concrete things. Deceptive, manipulative, exploitive. Preoccupied with staying out of trouble, not getting caught; externalising blame. Lacking long term goals and ideals. See life as a 'zero sum game'. Views luck as central. Rejects critical feedback. 4.3% found to be at this stage by Cook-Greuter (2004).
Conventional	Diplomat (conformist)	Group-centred and imitates behaviour of high status group members/authority. Rules and norms accepted without question. What is conventional and socially approved is 'right' (although may also rigidly conform to some unconventional norms to fit in with a particular group). Preoccupation with reputation, social acceptance, appearance and material things. People (including the self) perceived in terms of stereotypes. Conceptually simple, 'black and white' thinking. Feelings understood at banal level. Use of clichés, favourite phrases and pre-fabricated jokes. One week to 3-month time horizon. 11.3% at this stage (Cook-Greuter, 2004).
	Expert (self-aware)	Distinction between self and group. Allows some modification of absolute rules, but stage is basically a later version of Diplomat. Concentrates on mastery of one or more particular crafts or disciplines. Desire to stand out, be unique. Perfectionist. Increased, though still limited, self-awareness and appreciation of multiple possibilities in situations. Relationships described in terms of feelings (not just actions). Self-critical but accepts external feedback only from acknowledged craft masters. Values decisions based on technical merit. Humour tends to practical jokes. Six month to 1-year time horizon. 36.5% at this stage (Cook-Greuter, 2004).
	Achiever (conscientious)	Self-evaluated standards. Achievement is highly valued. Reflective, responsible and empathic. Strives to improve the self. Thinking beyond personal concerns to those of society. Displays and perceives true conceptual complexity. Can see the broader perspective and can discern patterns. Principled morality. Mutuality in relationships. Self-critical. Welcomes behavioural feedback. One to 3-year time horizon. 29.7% at this stage (Cook-Greuter, 2004).
Postconventional	Individualist (individualistic)	Heightened sense of individuality. Takes a relativistic perspective. Interested in own and others unique self-expression. Tolerant of self and others. May become a maverick. Awareness of inner conflicts and personal paradoxes, without a sense of resolution or integration. Values relationships over achievement. May provide less certainty and less firm leadership to followers as aware of the layers of assumptions and interpretations at work in current situation. Possible paralysis in decision-making. 11.3% found at this stage (Cook-Greuter, 2004).
	Strategist (autonomous)	Self-awareness in action. Intuitively recognises other and own stages and accesses all of these creatively to achieve desired outcomes. Reframes issues and seeks transformational solutions. Deepened respect for other people—their individuality and uniqueness and their need to find their own way/make their own mistakes. Relationships seen as interdependent rather than as dependent/independent. Tolerance for ambiguity and the recognition of paradoxes (including inner conflicts). Search for self-fulfilment/self-actualisation. Vivid expression of feelings. Witty existential humour. 4.9% found at this stage (Cook-Greuter, 2004).
	Alchemist (construct aware/integrated)	Self-actualising. Starts to see own thought and language habits and become aware of profound splits and paradoxes inherent in rational thought. Aware of ego defences for self-preservation. 'Peak experiences' or 'flow states' may be experienced. Often play key roles in many organisations at once. Intentional participation in the work of historical/spiritual transformation. 2.0% found at this stage (Cook-Greuter, 2004).

Adapted from Hy and Loevinger (1996), Manners and Durkin (2001), Cook-Greuter (1999, 2004), Marko (2006) and Torbert et al. (2004). Brackets indicate Loevinger's original stage names.

Background to the research

Loevinger's theory of ego development

As we have discussed in more detail previously (Vincent, Ward, & Denson, 2013), Loevinger's constructive developmental theory of ego development (now often referred to as 'consciousness development') has been described as one of the most comprehensive constructs in the field of developmental psychology (Westenberg & Block, 1993). It provides a framework for understanding the growth in an individual's way of constructing meaning through the lifespan which is comprised of an invariant sequence of stages (Loevinger, 1976). Each shift in stage offers greater cognitive complexity, a more integrated perspective, greater self and interpersonal awareness, responsibility and personal autonomy, decreasing defensiveness and increasing flexibility, reflection and skill in interacting with the environment (Cook-Greuter, 1999, 2004). Identity expands from egocentric to 'sociocentric' to 'worldcentric' and beyond (Wilber, 2000). As is shown in Table 1, the stages of consciousness development are divided into pre-conventional, conventional and post-conventional tiers. The pre-conventional tier represents the period in a person's life when cognitive and affective development have not yet reached levels at which the individual can fully function in conventional society. Based on their research, Miller and Cook-Greuter (1994) estimated that around 10% of the adult population in Western societies function within this tier. The three stages within the 'conventional' tier are where about 80% of adolescents and adults operate (Cook-Greuter, 2004; Miller & Cook-Greuter, 1994). This tier is characterised by the individual's adherence to conventional values, norms, beliefs and practises. In contrast, once an individual enters the stages of the third 'post-conventional' tier (around 10–20% of the population) he or she is able to recognise the constructed nature of reality and to critically examine, and intellectually step outside, conventional norms, practises, values, beliefs and existing institutional structures. Adults operating from this tier have been found to have greater tolerance of paradox and ambiguity, to be able to think multi-systemically, and to anticipate and creatively adapt to changing contingencies and life circumstances (Cook-Greuter, 2004).

Torbert et al. (2004) adapted the work of Loevinger, producing a model of development that was intended to facilitate wider application of the theory. Called the 'Leadership Development Profile', its stages align with those of Loevinger, but have been given different labels. The descriptions of the stages relate to how they would manifest in individuals within an organisational context. Table 1 shows the features of the stages.

Several critical reviews of Loevinger's theory and its measurement tool, the Washington University Sentence Completion Test (WUSCT), have concluded that there is substantial empirical support for the conceptual soundness of consciousness development theory and the WUSCT (Cohn & Westenberg, 2004; Hauser, 1976; Loevinger, 1979; Manners & Durkin, 2001). Research into discriminant validity has found it to be sufficiently distinct from intelligence and from socioeconomic status (as indicated by demographic factors and level of education) (Manners & Durkin, 2001).

The relationship between consciousness development and age and education

Cohn (1998) conducted a meta-analysis of 92 studies involving over 12,000 participants from a wide range of samples that had used the Washington University Sentence Completion Test (WUSCT)—the tool Loevinger developed to measure consciousness development. He was interested in understanding when most people cease to mature. He found correlations of .40 between age and consciousness level in adolescent samples from cross-sectional and longitudinal studies, .13 in college-age adults in longitudinal studies and .04 in cross-sectional studies of adults. These findings, and more recent research reported by Truluck and Courtenay (2002) and Cook-Greuter (2004), support the hypothesis of Loevinger et al. (1985) that consciousness level stabilises for most individuals by early adulthood.

According to a review by Cohn (1998) there is typically a high correlation between education and stage of consciousness in school samples, but only a low to moderate correlation in adult samples. Miller (1994) reported on a study of 40 highly educated males (almost 2/3 had advanced academic or professional degrees and the remainder had attended college) between the ages of 28–57. He found only 5 scored at a post-conventional level of consciousness development and noted that this result provided evidence that higher levels of education and professional training do not guarantee movement into the post-conventional tier. At a ten-year follow up, he reported that WUSCT scores had remained relatively stable. More recently however, Truluck and Courtenay (2002) found a significant positive relationship between educational level and consciousness development in a sample of older adults aged 55 and over, with a higher percentage of college graduates and postgraduates having reached the Individualist (first postconventional) stage of consciousness. They concluded that educational attainment may influence consciousness development well into older adulthood.

The limitations of conventional consciousness

The findings of Cohn (1998) and Cook-Greuter (2004) that that the vast majority of adults stabilise at or below the Achiever level of consciousness, provide support for Kegan's (1994) assertion that human consciousness is often not geared to respond effectively to the adaptive challenges of today. The Achiever stage is well below the maximum potential for development identified by Loevinger's theory, and is consistent with the findings of stabilisation below the maximum potential identified in other areas of adult development, such as cognitive and moral development (Manners & Durkin, 2000).

People operating from Achiever consciousness are unlikely to be able to deal with complex adaptive challenges. Although as Cook-Greuter (1999) argued, this currently predominant conventional world view has "…produced the industrial revolution and evolved

into the current global technology, which has solved many dire problems of humanity and created technological wonders unimaginable fifty years ago" (p. 13), Donovan (1997) has noted that it is also responsible for the major problems currently facing the planet because it is a limited and relatively short-term empirical–analytic mode of thinking "…well suited to calculating the means to attain predetermined ends, but deficient when it comes to more fundamental matters—such as determining what ends are to be pursued, and challenging the premises on which calculations proceed." (p. 26).

Consciousness development and its relationship to leadership capacity

Laske (2003), Eigel and Kuhnert (2005) and Strang and Kuhnert (2009) have equated consciousness development with the capacity to lead others. Similarly, the primary message of the work of Torbert et al. (2004) and of Kegan and Lahey (2009) is that a person's stage of consciousness influences his or her approach to the tasks of management and leadership, and that people who operate from later stages tend to be more effective managers and transformational leaders.

Research exploring the relationship between consciousness development and leadership performance is increasing, although the field is still in its infancy and many studies to date have suffered from small sample sizes and other problems (McCauley et al., 2006). Nevertheless, a growing body of recent research in this area is showing associations between increasing consciousness development and better leadership performance and organisational outcomes (Barker & Torbert, 2011; Bartone, Snook, Forsythe, Lewis, & Bullis, 2007; Brown, 2011; Bushe & Gibbs, 1990; Guerette, 1986; Helsing & Howell, 2013; Joiner & Josephs, 2007; King & Roberts, 1992; Marrewijk & Were, 2003; McCauley et al., 2006; Merron, 1985; Merron, Fisher, & Torbert, 1987; Rooke & Torbert, 1998; Torbert et al., 2004). Furthermore, although there is a vast body of literature associating leadership performance with personality (Zaccaro, Kemp, & Bader, 2004), Strang and Kuhnert (2009) found that stage of consciousness development accounted for a unique component of the variance in 360-degree leadership performance ratings by peers and subordinates, beyond that which was accounted for by the Big Five personality dimensions.

Recently, Kegan and Lahey (2009) argued that efforts to develop leadership capacity should shift their focus from what Cook-Greuter (2004) has described as horizontal or lateral development—focusing on knowledge and competencies that expand and enrich a person's current way of meaning-making—to much more powerful 'vertical development' which supports people to transform their current way of making sense of the world (shift their consciousness) so that they can take a broader perspective. Unfortunately however, it has only been in relatively recent times that researchers have begun to place attention on the factors that might facilitate progress to advanced stages of consciousness development (Manners & Durkin, 2000; Manners, Durkin, & Nesdale, 2004; Marko, 2011; Pfaffenberger, 2005).

Promoting post-conventional consciousness development

Manners and Durkin (2000) developed a conceptual framework that identified the factors likely to be involved in the consciousness stage transition process in adulthood. This was based on Loevinger's theoretical reflections and associated research—including studies of intervention programs that have been designed to promote consciousness development in adults (mostly within the conventional stages)—as well as theory and research into moral stage development and the processes involved in adult personality development. The framework represents consciousness stage transition as an accommodative restructuring of schemas in response to life experiences that are personally salient, interpersonal in nature, emotionally engaging and challenging (but amenable to positive interpretation) and that are disequilibriating for the person's existing ways of seeing the world. In their model, development is influenced by the degree of exposure to such life experiences, along with dispositional personality traits that interact in complex ways to influence the likelihood of such exposure, and how the experiences are perceived and responded to (Vincent et al., 2013).

Manners and Durkin tested their conceptual framework using an intervention that targeted people at the Expert stage. It was specifically designed to be interpersonal in nature, structurally disequilibriating for people at that level, personally salient and emotionally engaging (Manners et al., 2004). Their research utilised an experimental design and found a significant increase in consciousness in participants who had taken part in the intervention, compared to no effect for those in a matched wait list control group.

Joiner and Josephs (2007), Rooke and Torbert (2005), and Torbert et al. (2004) have described various reflective and attentional practises that have the potential to foster growth throughout the developmental process, regardless of the current level of consciousness, but we still know very little about what specific factors might foster growth at each of the different developmental stages (Bartone et al., 2007; McCauley et al., 2006). In particular, there is an absence of research into how movement to post-conventional levels of consciousness development might be facilitated by training, developmental programs or coaching. As McCauley et al. (2006) have noted, post-conventional growth is not part of normal development and so there are few social supports for it. Moreover, interventions designed to trigger growth at the conventional levels cannot be assumed to have the same effect at post-conventional levels. In order to promote the transition from conventional to post-conventional consciousness, developmental programs would presumably need to include experiences that expose participants to the fundamental paradoxes in human nature, confront them with ambiguous challenges and invite them to face their discomfort with this, as well as focusing their attention on their own mental habits and biases—all concerns that as Cook-Greuter (1999) noted, are prominent in the post-conventional stages.

Another gap in the research into facilitating consciousness development is the lack of consideration of the role of trait, state, environmental and sociocultural 'readiness factors' for such development (Palus & Drath, 1995). Although it was beyond the scope of this paper to investigate them, a better understanding of how such factors may mediate the effect of interventions designed to trigger consciousness development could facilitate a more tailored approach (as opposed to 'one-size-fits-all') that could address the likely barriers to higher stage development. As an example, we previously reported on a study in which we explored whether

particular personality preferences and combinations thereof, as measured by the Myers–Briggs Type Indicator (MBTI), were associated with higher consciousness levels and whether particular personality preferences (and combinations of preferences) might act as inhibiting or facilitating factors in consciousness development (Vincent et al., 2013). We found that Intuition alone was associated with higher development on entry into community leadership development programs, as well as greater development throughout the course of the programs. As we have previously noted (Vincent et al., 2013) MBTI Intuition has also been found to be highly correlated with Openness on the NEO-PI (Furnham 1996; Furnham, Moutafi, & Crump, 2003, MacDonald, Anderson, Tsagarakis, & Holland, 1994; McCrae & Costa, 1989) which, in turn, has been found to be correlated with ego level (Einstein & Lanning, 1998; Hogansen & Lanning, 2001; Kurtz & Tiegreen, 2005; Morros, Pushkar, & Reis, 1998; Wright & Reise, 1997). That Intuition should be associated with higher consciousness development seems reasonable, because compared to people with a preference for Sensing, those with a preference for Intuition have been found to have higher levels of autonomy, personal growth and positive relations; to be more open to the positive potential in people and situations; and to invest themselves enthusiastically in that potential (Bushe & Gibbs, 1990; Cranton, 2006; Harrington & Loffredo, 2001). These qualities may positively influence both the types of potentially consciousness development-triggering life experiences a person is exposed to, and the ways in which such experiences are perceived and responded to. MBTI Intuition, may thus serve as an internal 'readiness' factor for consciousness development (Palus & Drath, 1995) and has also been associated with advancement to top executive ranks and career achievement (McCaulley, 1990, Zaccaro, 2001). We made some recommendations about how the relative disadvantage for those with a preference for Sensing might be mitigated in leadership programs that aim to promote consciousness development (Vincent et al., 2013). In the current study, we investigated the distribution and impact of Intuition and Sensing preferences across the program groups, primarily to address their potential confounding influences on the between-groups comparison.

Community leadership development programs

As we have noted previously (Vincent et al., 2013) at the time of this study, Australian Community Leadership Programs (CLPs) did not incorporate constructive developmental theory as an organising framework or deliberately set out to promote consciousness development. However, close observation revealed that most actually fit Manners and Durkin's (2000) framework for promoting conscious development quite well in that they offer potentially disequilibriating experiences that are interpersonal in nature, emotionally engaging and challenging, as well as being personally salient for participants. The current research was designed to find out whether CLPs do, in fact, promote consciousness development without specifically intending to do so.

Australian CLPs are typically run over 10 months from February to November with most including the equivalent of 2 to 3 full day sessions per month as well as multi-day retreats and field trips. All are currently run out of not-for-profit organisations established for this purpose, or through local chambers of commerce or 'committees for cities'. They recruit established and emerging leaders from very diverse business, government and not-for-profit organisations. Selection of participants is similar across all Australian CLPs. It is a competitive process involving completion of a written application and participation in an interview to assess suitability for inclusion. Candidates must have demonstrated above-average leadership capacity and a commitment to their community. They must also be supported by their employers to undertake the program and be open to learning and committed to increasing their involvement in their community. Each program has a limit of between 24 and 40 participants (depending on the size of the region in which the program operates and available program resources).

Unlike other more mainstream leadership development programs in Australia, CLPs are uniquely focussed on facilitating their participants' exposure to major economic, environmental, social and cultural issues affecting their communities—and (under the Chatham House Rule) to the leaders at the forefront of these issues from a diversity of perspectives, sectors and industries. CLPs generally involve highly interactive and experiential sessions, some in environments that participants might otherwise never encounter. For example, participants may find themselves serving meals in a homeless centre, working with people with a disability to help place them in suitable work, talking to prisoners about their lives in a prison environment, sitting around a campfire with indigenous elders discussing the challenges facing such communities, walking the fields with a farmer, or sitting in on a murder, rape or drug trial in a law court. In addition, participants attend artistic performances, visit various businesses and public infrastructure projects, and meet with state and federal politicians and visiting dignitaries. Group debriefs generally follow such sessions. These may be facilitated by the program leaders, guest facilitators or the program participants themselves.

Experiential learning opportunities of this kind are likely to be disequilibriating for those at the conventional stages of consciousness development because the collaborative examination of complex and often ill-defined community issues from diverse perspectives (including the diversity of perspectives of the participants themselves) will raise awareness that problems can be viewed through different lenses, that such issues cannot be considered in isolation—they must be viewed within the context of the larger multiplicity of systems with which they interact, that authority cannot be relied upon to provide answers, there are no simple solutions and there can be different but equally valid ways to intervene (Heifetz et al., 2009; Taylor, 2006; Valcea, Hamdani, Buckley, & Novicevic, 2011). Ambiguous experiential challenges such as these also begin to expose participants to the fundamental paradoxes in human nature whilst highlighting their own mental habits and biases. In the program environment, away from their regular routines, roles and familiar circumstances, participants are more able to participate deeply in the reflective process. The programs may thus operate as 'holding environments'—providing a psychologically safe place in which to reflect on the limitations of the current level of meaning-making, as well as a source of social support through the disturbance that this entails (Day, Harrison, & Halpin, 2009; Kegan & Lahey, 2009; Merriam & Clark, 2006; Petriglieri & Petriglieri, 2010).

However, some programs provide one or more extra psychosocial components and challenges with the potential to further assist in the promotion of consciousness development by providing additional opportunities and support to self-reflect, learn from

Table 2
Summary of additional psychosocial challenges included in enhanced CLPs.

Program component	Description
Community-focussed group projects	This component is a 'stretch assignment' that requires thinking and acting in complex ways (Day & Lance, 2004). Participants are required to select an economic, environmental or social issue in the community and, with a group of other participants, design and implement an intervention to tackle this issue. Generally there are 4–6 projects per program cohort. Although some time is set aside for this work during the program, participants also need to work on the project in their own time. Some programs utilise an action learning approach for the projects, but all vary in the amount of support they provide for project teams. In some programs project groups are required to have implemented their project before completion of the program, whereas other programs require completion of a comprehensive project plan (after scoping and stakeholder engagement) with implementation of the project in the year following the program. The exposure to diverse participant and stakeholder perspectives on the project issues, as well as a lack of 'authority' to impose an intervention or decision, means that project groups must develop an intervention that responds to a variety of perspectives and concerns. This requires adaptability, skilful collaboration, conflict negotiation and flexibility about means and goals (Valcea et al., 2011)
Professional individual coaching	These sessions focus on the development of self-reflection and awareness as well as social complexity. The coach may focus on particular areas in which the participant may need to develop in order to address current leadership and other interpersonal challenges. Time is also taken to explore the impacts of the program journey on the participant's ability to exercise leadership in both their personal and professional lives. In all programs, the professional coaches are part of the facilitation team and are available to participants on an ad hoc basis. Two programs also specify that a minimum number of individual coaching sessions are provided (2–4 sessions).
Psychological testing with associated feedback and development, integrated through the program	Various tools such as the Myers Briggs Type Indicator (MBTI), Dominance, Influence, Steadiness, Conscientiousness test (DiSC), Strengths Deployment Inventory (SDI) and Enneagram are used to provide a form of self-assessment and enhance participants self-awareness and interpersonal awareness. The tools are introduced during the opening program retreat and are utilised in various ways by the facilitators throughout the program to help participants integrate the learnings more deeply—particularly in group exercises and project work
Peer assessment and feedback	The programs utilise a variety of peer assessment and feedback processes designed to enhance self-reflection and awareness, as well as awareness of diverse perspectives. These include the following: • Small groups of participants (4–6) are invited to tell each group member something them that triggers a positive reaction and then something that triggers a negative reaction in them (time is provided for each person to reflect on these and write them down before the feedback begins). When discussing both the positive and negative triggers, the person providing the feedback is also required to reflect on (and 'own') how these positive and negative characteristics are also a part of themselves. • A 'feed forward' process in which participants are asked to 1. Pick a behaviour that they would like to change and that would make a significant, positive difference in their lives; 2. Describe this behaviour to a randomly selected fellow participant; 3. Ask for two suggestions for the future that might help them achieve a positive change in their selected behaviour; 4. Listen to the suggestions and take notes (not comment on the suggestions in any way); 5. Thank the other participant for their suggestion; 6. Ask the other person what they would like to change and repeat steps 1–4 above then; 6. Find another participant and keep repeating the process until the exercise is stopped. • A 360 degree process in which participants are invited to reflect in confidence on the strengths and weaknesses of their fellow participants and this information is summarised in the form of a typical individual 360 degree feedback report.
Case-in-point learning to develop adaptive leadership	Based on the adaptive leadership development program 'The Art and Practice of Leadership Development' taught at Harvard's Kennedy School of Government by Professors Ron Heifetz and Marty Linsky, in case-in-point learning the facilitator takes situations that arise in the group as they happen and utilises them to illustrate something they want the group to learn about adaptive leadership. Participants are asked to get 'on the balcony' to see the larger patterns at play in the group and to help them intervene in more effective ways. At the same time, the facilitator reinforces the concepts and frameworks of adaptive leadership in order to assist participants in recognising and naming what they are learning to see and do. In using case-in-point learning, the facilitator tries to skilfully provide a fine balance between maintaining equilibrium and allowing enough disequilibrium (confusion, frustration conflict etc.) to arise so that the group can examine their assumptions about leadership and begin to appreciate what it may actually require (Daloz Parks, 2005, p7).
Personal case study work	The case study work is designed to offer diverse perspectives on issues and to enhance self-reflection and awareness. Participants work in groups of 6–7 to analyse group members' own case studies of leadership failure (round 1 in the first half of the program) and a current leadership challenge (round 2 in the second half of the program) using the adaptive leadership concepts explained by Heifetz et al. (2009). A structured format for the analysis is provided in

(*continued on nextpage*)

Table 2 (*continued*)

Program component	Description
	which the case presenter is given time to explain the issue, questions of clarification are then asked by other members of the group and the group then discusses the issue whilst the case presenter listens and take notes (but is not allowed to comment). Finally, the group makes some recommendations and presents these to the case presenter who then has a chance to speak about what he or she has learned from the process. The process is then repeated with another group member presenting their case. Each case session takes 75 min.
Extended wilderness-based outward-bound experience	These experiences include challenge-based team and solo activities that last several days and push participants out of their comfort zones. They are focussed on team-building and increasing self-awareness, problem-solving and communication capacity, as well as an understanding of cultural differences and of different leadership styles.

experience, work with diverse perspectives, experiment and take risks. These components can include psychological testing of participants (with associated feedback and development, integrated through the program: see Table 2 for test details), professional individual coaching, peer assessment and feedback, extended wilderness-based outward-bound experiences, case-in-point learning, personal case study work and/or community-focussed group projects. All can be described as aligning with Manners and Durkin's (2000) framework for promoting conscious development in that they are interpersonal in nature, emotionally engaging and challenging, as well as being personally salient for participants. Table 2 provides a summary of the additional program components.

For the purposes of this research, we grouped together CLPs including any one, or more, of these additional psychosocial components and labelled those programs as 'enhanced programs', for comparison with CLP programs that mainly focussed on providing the standard experiential issues-based program without these additional components (labelled 'standard programs').

Aims of the research

This study was part of a broader research program, the first part of which was reported in Vincent et al. (2013). The aims of the current study were two-fold. Firstly, to investigate the efficacy of community leadership programs (CLPs) compared to controls (non-academic management training programs) in promoting consciousness development. Secondly, to compare standard CLPs to enhanced CLPs in promoting consciousness development—particularly to post-conventional levels. Note that in including a control group we were attempting to establish a 'baseline' measure for consciousness development during the course of an adult education program by which to compare the CLP groups—rather than to compare CLPs with management training per se.

Although this study should be regarded as exploratory, given that no other studies have investigated the efficacy of community leadership programs in promoting consciousness development, the following specific hypotheses were developed:

- Standard and enhanced community leadership program groups will be superior to the control group in promoting consciousness development overall;
- Standard and enhanced community leadership program groups will be superior to the control group in promoting post-conventional consciousness development (i.e. from Achiever to Individualist and above);
- The enhanced community leadership program group will be superior to the standard community leadership program group in promoting post-conventional consciousness development (i.e. from Achiever to Individualist and above).

In addition, because our previous study found that a preference for Intuition on the MBTI was associated with significantly greater consciousness development during the programs when compared to a preference for Sensing (Vincent et al., 2013) we wanted to eliminate the possibility that any differences in the promotion of consciousness development found between the program groups might be confounded by these personality preferences.

Materials and methods

Participants

Eleven community leadership programs (with a total of 337 participants) and two management programs (with a total of 37 participants) were initially recruited for this study. The latter participants, who acted as controls, completed a non-academic (non-award) management program which is run by the executive education unit of a university and offered in two Australian States. Completed over 12 months, content in this program is delivered in six 2-day modules with a break of six weeks between modules. Assignments are designed to link classroom knowledge to workplace implementation. Content is delivered in lectures and video presentations and interactive tutorials, using case-study analyses, and problem-solving exercises and is focussed on teaching participants how to build and lead cohesive teams and develop problem-solving and analysis abilities. Participants are assessed on the presentation and report of a work-based project (such as developing a risk management or performance management plan for their workplace), completion of assignments and a case study exam. The program targets middle and senior managers with relevant experience, but there are no other selection criteria. Once completed, it can be used as credit for two MBA subjects.

Of the 11 CLPs included in the study, four programs comprised the standard group and 7 comprised the enhanced group. Sample size was restricted by the number of programs prepared to participate in the research and the number of people within the programs

who agreed to participate. Overall, 96% of participants in the 13 programs (N = 390) were tested at the commencement of their programs and 89.6% of these (n = 335) participated in the final testing session at the end of their program. However, attrition was not evenly spread, with participants in the control group having a much greater drop-out rate (48.6%) than participants recruited from CLPs (6.2%). A possible reason for the difference in attrition is that all CLPs scheduled the final testing session as part of a retreat at the end of the program, whereas there was no retreat for the control programs and these participants were asked to complete the final testing in their own time at the end of their last program seminar. No programs dropped out of the research. The composition of the final sample was as follows: Standard CLP group, $n = 80$; Enhanced CLP group, $n = 237$; control group, $n = 19$. All parametric and non-parametric statistical tests were undertaken using SPSS, which automatically corrects for uneven groups sizes where necessary. Furthermore, the parametric statistical techniques utilised are robust for uneven group sizes in samples where, as in this case, test assumptions are not violated—see Missing data and assumption checks section (Pallant, 2007).

Consciousness levels for participants at program entry ranged from Diplomat to Strategist. The distribution of consciousness levels in the sample was similar to that reported in recent research with adults in management (Cook-Greuter, 2004). A summary of the sample characteristics by group is shown in Table 3.

One-way analyses of variance in age and mean stage of consciousness (at program entry), found no significant difference between the three groups. Chi-square analyses revealed no significant differences between the groups on gender, first language or Aboriginality. However, a one-way analysis of variance found a statistically significant difference in education level for the three groups: $F(2, 360) = 19.16$, $p < .0001$. The effect size, calculated using eta squared was .09 (medium). Post hoc comparisons using the Tukey HSD test ($p < .05$) indicated that the mean education level was significantly higher for the enhanced CLP group compared to the standard CLP and the control groups. The latter did not differ significantly from each other.

Chi-square tests showed no significant differences in gender, Aboriginality or English as a second language between the research groups and the participants that dropped out. One-way analyses of variance showed no significant difference in age or ego stage on program entry, but did reveal a significant difference in education: $F(3, 359) = 10.24$, $p < .0001$. Eta squared was .08 (a medium effect size). Post hoc comparisons using the Tukey HSD test ($p < .05$) indicated that the mean education level for people that dropped out ($M = 5.70$, $SD = 1.59$) was significantly lower than the enhanced CLP group. However, the people that dropped out did not differ significantly in terms of education from the standard CLP or control groups (means and standard deviations are shown in Table 3).

Measures

The Washington University Sentence Completion Test (WUSCT)

As we noted in Vincent et al. (2013), the WUSCT was first published in 1970 (Loevinger & Wessler, 1970; Loevinger & Wessler, 1970) and revised in 1985 (Loevinger, 1985) and in 1996 (Hy & Loevinger, 1996). It has been described as the most extensively validated projective technique for assessing personality (Lilienfeld, Wood, & Garb, 2000, p. 56) and has been used in hundreds of studies and administered to thousands of people (Cohn & Westenberg, 2004). The premise of the test is that a person's choice of sentence content and structure models the way they see the world (Cook-Greuter, 1999). Respondents complete a series of 36 sentence stems selected for eliciting various aspects of ego development. Responses are scored using a detailed manual (Hy & Loevinger, 1996) and combined using ogive rules to place the respondent in one of the eight stages of development. We utilised the ogive rules modified by Cook-Greuter (1999); they have higher cut-off numbers for assigning scores in the post-conventional stages (Vincent et al., 2013).

High inter-rater reliability has consistently been found for the WUSCT in studies involving a range of populations. Using the item sum score, Loevinger and Wessler (1970) reported a Cronbach's alpha of .91 and this has been supported in several subsequent studies (Manners & Durkin, 2001). High and significant correlations between the two split halves of the forms have been found, with a similar correlation between each half and the full version (Novy, Blumentritt, Nelson, & Gaa, 1997; Novy & Francis, 1992). Manners and Durkin (2001) noted that the WUCST has compared favourably with other measures of personality development (Vincent et al., 2013).

We used the two alternate short forms of the WUSCT (Loevinger, 1985) to prevent the measurement error effects found in repeated use of the full test (Redmore & Waldman, 1975). We also followed the recommendation of Hy and Loevinger (1996) for the use of overall ego stage, rather than the item sum in research utilising the WUSCT (Vincent et al., 2013).

The Myers–Briggs Type Indicator (MBTI)

The MBTI is a very popular inventory used to measure personality constructs (see Vincent et al., 2013 for a brief review). It is viewed as a valuable tool to develop understanding of self and others and for enhancing effective teamwork (Lloyd, 2012). Although it is often treated with distain by academic researchers who prefer the use of the Big Five, remarkable convergence in the two

Table 3
Sample characteristics by group.

				Ego stage on entry							
Group	*n*	Female	Mean age	Education	ATSI	ESL	4	5	6	7	8
Enhanced CLP	236	46.4%	40.54 (7.28)	6.63 (1.49)	4.6%	6.3%	4	32	157	40	4
Standard CLP	80	52.5%	39.45 (8.73)	5.72 (1.67)	0%	5.0%	2	14	55	7	2
Control	19	63.2%	39.50 (8.05)	5.53 (1.07)	5.6%	5.3%	0	1	16	2	0

Note: Numbers in parentheses are standard deviations.

approaches has been found (Furnham, Dissou, Sloan, & Chamorro-Premuzic, 2007; Lloyd, 2012) and Lloyd (2012) suggested that they could readily be harmonised. We selected the MBTI in preference to the Big Five because of its focus on the positive qualities of all preferences, because it is easy to use and comprehend (from a program participant perspective) and was already in standard use in some of the programs. In addition, as the first author is an accredited MBTI trainer, she was able to offer to administer the instrument as part of an engaging 4-hour team-building workshop built around understanding the preferences. As most CLPs operate on very limited budgets and the workshop was offered free of charge, this was an additional incentive for some of them to participate in the research. One of the control programs also took up the workshop option.

The MBTI Self-Scorable Form M was utilised. This is a self-report instrument on which respondents select one of two options for each of 93 items to identify their preferences (and preference clarity scores) on four pairs of dichotomous constructs that were specified or implied in Jung's theory of personality and describe opposite, but equally valid, ways in which we use our minds (Myers, McCaulley, Quenk, & Hammer, 2003). The only preferences of interest in the current study were Sensing and Intuition. This dichotomy indicates differences in the way people take in information, and the kind of information they like and trust. People preferring to take in information using their senses and focus on the present and what is real and tangible are labelled as having a Sensing preference. Those preferring to focus on the future—patterns, possibilities, meanings and connections are labelled as having a preference for Intuition. We restricted our analyses to the preferences for Sensing and Intuition because, as noted above, we had previously found that Intuition is associated with higher consciousness development when compared to the Sensing preference, and we had found no other associations between consciousness development and other MBTI preferences or combinations thereof (Vincent et al., 2013).

An extensive review of the psychometric properties of the MBTI and its reliability and validity found it to be generally satisfactory (Gardner & Martinko, 1996). A more recent meta-analytic reliability study by Capraro and Capraro (2002) reported strong internal consistency and test–retest reliability, with a Cronbach's Alpha of .84 for the Sensing-Intuition dichotomy (computed from over 10,000 tests) and test–retest coefficients stable over time (ranging from 1 week to 2.5 year intervals). Distribution tables which reveal differing proportions of types across occupations that are consistent with type theory, provide extensive evidence of criterion-related validity. In addition, numerous studies have reported correlations between the scales of the MBTI and various personality, academic and interest variables (Gardner & Martinko, 1996; Myers et al., 2003).

Procedure

Participants gave informed consent to take part in the study. They completed the MBTI and the WUSCT (first 18 stems) on program entry and the WUSCT (second 18 stems) on program exit (this was at 9 months for 2 programs, 10 months for 4 programs, 11 months for 2 programs, 12 months for 2 programs and 17 months and 24 months for one program each). All WUSCT protocols were scored by a single trained scorer. Scoring of 67 of the protocols was checked by a second expert scorer, yielding a proportionate agreement on overall protocol consciousness stage of 93%, with a difference of one stage between scorers in only 7% of the protocols (Kappa = 0.79, $p < .0005$).

Missing data and assumption checks

Missing data for education level (3.07%) and age (1.68%) were treated with pairwise deletion in the analyses, resulting in different sample sizes for analyses with these variables included. Preliminary checks were conducted to ensure there were no violations of any of the assumptions of the statistical tests undertaken (Vincent et al., 2013).

Results and discussion

Preliminary analyses—the effect of age, education and program length

Correlations between consciousness stage and age and education were investigated in preliminary analyses because research has found modest correlations between these variables in some adult samples (Cohn, 1998; Manners & Durkin, 2001). A significant difference was evident in our sample, between the mean education level of the enhanced CLP group (see Table 2) and the other two groups—standard CLP and control. Education level was coded as an ordinal scale. Although a small correlation between education and stage of development on program entry was found ($r = .20$, $n = 363$, $p < .01$), there was no significant correlation between age or education level and the amount of consciousness development that occurred between program entry and program exit. It was therefore not deemed necessary to control for these variables in subsequent analyses. Likewise, there was no significant correlation between program length and the difference between the consciousness stage of participants at program entry and exit.

Table 4
Participants' mean consciousness stage at entry and exit and mean difference between the latter by group.

Group	Mean stage on entry	Mean stage on exit	Difference in stage T2 − T1
Enhanced CLP	6.03 (.66)	6.35 (.70)	.32 (.61)
Standard CLP	5.91 (.68)	5.86 (.65)	−.05 (.61)
Control	6.05 (.40)	5.89 (.57)	−.16 (.60)

The effectiveness of community leadership programs in promoting consciousness development

Table 4 shows the mean consciousness stage of participants for the two CLP groups and the control group at program entry and program exit, as well as the difference between these two scores. In order to test the hypothesis that standard and enhanced community leadership program groups would be superior to the control group in promoting consciousness development overall, a one-way between-groups analysis of variance was conducted to explore impact of group on the exit–entry consciousness level. There was a statistically significant difference in scores for the three groups: $F(2, 332) = 14.66$, $p < .0001$. The effect size calculated using eta squared was .08 (medium). Post hoc comparisons using the Tukey HSD test ($p < .05$) indicated that the mean difference score for the enhanced CLP was significantly greater than the standard CLP and control groups. The latter did not differ significantly from each other, providing partial support for the hypothesis that CLPs are superior to the control group in promoting consciousness development. The mean increase in consciousness stage from program entry to program exit represented just over a third of a stage for the enhanced CLP group. In contrast, the standard CLP and control groups showed no overall increase at program exit.

The percentages of participants from each consciousness stage at program entry that had developed by one or more consciousness stage at program exit is presented in Table 5. An independent samples *t*-test found no significant difference between the exit–entry consciousness stage level differences for the enhanced CLP ($M = .75$, $SD = 62$) and standard CLP ($M = .43$, $SD = .65$) groups for those participants who tested at the Expert stage on program entry. However, the effect size was approaching moderate (eta squared = .055).

Of most interest however, are the results from participants at the Achiever stage on program entry (n = 226) that had advanced a consciousness stage by program exit (n = 52), because this shift is from the last conventional to the first post-conventional stage. A one-way between-groups analysis of variance with the exit–entry consciousness level as the dependent variable and group as the independent variable was conducted to test the two final hypotheses. There was a statistically significant difference in exit–entry consciousness level for the three groups: $F(2, 225) = 14.33$, $p < .0001$. Eta squared was .11 (a medium effect). Post hoc comparisons using the Tukey HSD test indicated that the mean score for the enhanced CLP group (M = .29, SD = .53) was significantly higher than the standard CLP (M = −.13, SD = .51) and control (M = −.06, SD = .57) groups, thus supporting our hypothesis that the enhanced community leadership program group would be superior to the standard community leadership program group in promoting post-conventional consciousness development. However, the standard CLP group did not differ significantly from the control group, and thus the hypothesis that standard and enhanced community leadership program groups would be superior to the control group in promoting post-conventional consciousness development was only partially supported.

As can be seen from Table 5, 22.5% of participants in the enhanced CLP group at the first post-conventional stage of consciousness (Individualist) on program entry had transitioned to the next stage of post-conventional consciousness (Strategist) on program exit. This can be contrasted with the results for the standard CLP and control groups in which no participants transitioned beyond the Individualist stage. This indicates that enhanced community leadership programs are not only superior in promoting conventional to post-conventional consciousness development; they are also superior in promoting increased development within the post-conventional tier.

The influence of preferences for Sensing and Intuition on the differential group outcomes

As noted in the Aims of the research section, as our previous study found that a preference for Intuition on the MBTI was associated with significantly greater consciousness development during the programs when compared to a preference for Sensing (Vincent et al., 2013) so we wanted to explore the distribution of these preferences across our three program groups to eliminate the possibility that a higher proportion of Intuitive types in the enhanced CLP group or a higher proportion of Sensing types in the standard CLP group, could be confounding the differences found between these groups in the promotion of consciousness development. A Chi-square test for independence indicated a significant association between the groups and the distribution of Sensing and Intuition preferences, $\chi^2(2, n = 374) = 27.27$, $p = .0005$. The effect size was medium (Cramers V = .27). Table 6 displays the counts and percentages of those with a preference for Sensing and those with a preference for Intuition in each group. It can be seen that the enhanced CLP group was comprised of 40% of participants with a preference for Sensing, whereas in the standard CLP and control groups 68% and 70% of participants (respectively) had a preference for Sensing.

In order to assess the impact that this uneven distribution of preferences for Sensing and Intuition may have had within the study groups, only participants with a Sensing preference were selected and a Chi-square test for independence was conducted to see if there was any difference between the groups in the number of Sensing types who advanced a stage of consciousness. This analysis

Table 5
Percentage of participants advancing at least one consciousness stage on program exit.

	Program exit		
Consciousness stage on entry	Enhanced CLP	Standard CLP	Control
Diplomat	100% (4/4)	100% (2/2)	N/A
Expert	68.7% (22/32)	50% (7/14)	0% (0/1)
Achiever	29.3% (46/157)	7.3% (4/55)	12.5% (2/16)
Individualist	22.5% (9/40)	0% (0/7)	0% (0/2)

Note: Numbers in parenthesis represent the actual number of participants who shifted a consciousness stage over the total number of participants at that stage in that group.

Table 6
Distribution of MBTI Sensing and Intuition preferences by group.

			MBTI Preference		Total
			Sensing	Intuition	
Groups	Enhanced CLP	Count	101	151	252
		% within group	40.1%	59.9%	100.0%
		% of Total	27.0%	40.4%	67.4%
	Standard CLP	Count	58	27	85
		% within group	68.2%	31.8%	100.0%
		% of Total	15.5%	7.2%	22.7%
	Control	Count	26	11	37
		% within group	70.3%	29.7%	100.0%
		% of Total	7.0%	2.9%	9.9%
Total		Count	185	189	374
		% within groups	49.5%	50.5%	100.0%
		% of Total	49.5%	50.5%	100.0%

indicated a significant difference between the groups in whether or not their participants advanced a stage of consciousness, χ^2 (2, $n = 160$) = 11.63, $p = .003$, Cramers V = .27. Table 7 displays the counts and percentages for the groups. It can be seen that in the enhanced CLP group, 33% of those with a preference for Sensing advanced a stage of consciousness, whereas in the standard CLP and control groups the percentage was 13% and 0% respectively. A further Chi-square test for independence was conducted, selecting only those with a preference for Intuition. This analysis did not indicate any significant differences between the groups. Table 7 also displays the counts and percentages for this analysis, and it can be seen that the percentage of participants with a preference for Intuition that advanced a stage of consciousness is very similar for the enhanced CLP (35%), standard CLP (23%) and control (29%) groups. Analyses of variance tests produced similar results.

In order to probe further into these unexpected results, a Fishers Exact Probability Test was conducted, selecting only those with a sensing preference who were also assessed at the Achiever stage on program entry in either of the two CLP groups. This indicated that significantly more Sensing participants at Achiever level shifted to the first post-conventional stage of consciousness (Individualist) in the enhanced CLP group ($p = .001$). There were no differences found between the two CLP groups using Fishers Exact Probability Tests when examining those with a Sensing preference who shifted from the Expert to the Achiever level of consciousness, or when examining those with a preference for Intuition who shifted from the Expert to Achiever or from the Achiever to Individualist level. This indicates that the enhanced CLP group was superior only in facilitating the development of those with a preference for Sensing to the first post-conventional stage of consciousness, although, as we have reported previously with this same sample, a preference for Intuition on the MBTI was associated with significantly higher ego development on entry into community leadership development programs and with greater ego development during the programs when compared to a preference for Sensing overall (Vincent et al., 2013). Table 8 displays the numbers and percentages for the comparisons using Fishers Exact Probability Test.

Summary of the research outcomes

This research provides further support for the finding by Manners et al. (2004) that programs designed in accordance with the conceptual framework developed by Manners and Durkin (2000) can successfully trigger consciousness development. In the current study, the group of CLPs that offered challenge to consciousness primarily through the exploration of community issues (standard CLPs) was equally successful in facilitating development within the conventional tier (from Expert to Achiever) to the program

Table 7
Consciousness stage increases by Sensing and Intuition preferences and group.

			Consciousness stage increase					
			Participants with preference for Sensing			Participants with preference for Intuition		
			No stage increase	Stage increase	Total	No stage increase	Stage increase	Total
Groups	Enhanced CLP	Count	63	31	94	92	50	142
		% within group	67.0%	33.0%	100.0%	64.8%	35.2%	100%
		% of Total	39.4%	19.4%	58.8%	52.6%	28.6%	81.1%
	Standard CLP	Count	47	7	54	20	6	26
		% within group	87.0%	13.0%	100.0%	76.9%	23.1%	100%
		% of Total	29.4%	4.4%	33.8%	11.4%	3.4%	14.9%
	Control	Count	12	0	12	5	2	7
		% within group	100.0%	.0%	100.0%	71.4%	28.6%	100%
		% of Total	7.5%	.0%	7.5%	2.9%	1.1%	4.0%
Total		Count	122	38	160	117	58	175
		% within groups	76.3%	23.8%	100.0%	66.9%	33.1%	100%
		% of Total	76.3%	23.8%	100.0%	66.9%	33.1%	100%

Table 8
Consciousness stage increases by level on entry, Sensing and Intuition preferences and group.

			Consciousness stage increase					
			Sensing/Expert (and below) on entry			Sensing/Achiever on entry		
			No stage increase	Stage increase	Total	No stage increase	Stage increase	Total
Groups	Enhanced CLP	Count	9	15	24	45	16	61
		% within group	37.5%	62.5%	100.0%	73.8%	26.2%	100%
		% of Total	25.7%	42.9%	68.6%	43.7%	15.5%	59.2%
	Standard CLP	Count	5	6	11	41	1	42
		% within group	45.5%	54.5%	100.0%	97.6%	2.4%	100%
		% of Total	14.3%	17.1%	31.4%	39.8%	1.0%	40.8%
Total		Count	14	21	35	86	17	103
		% within groups	40%	60%	100.0%	83.5%	16.5%	100%
		% of Total	40%	60%	100.0%	83.5%	16.5%	100%
			Intuition/Expert (and below) on entry			Intuition/Achiever on entry		
			No stage increase	Stage increase	Total	No stage increase	Stage increase	Total
Groups	Enhanced CLP	Count	1	11	12	66	30	96
		% within group	8.3%	91.7%	100.0%	68.8%	31.3%	100%
		% of Total	5.9%	67.4%	70.6%	60.6%	27.5%	88.1%
	Standard CLP	Count	2	3	5	10	3	13
		% within group	40.0%	60.0%	100.0%	76.9%	23.1%	100%
		% of Total	11.8%	17.6%	29.4%	9.2%	2.8%	11.9%
Total		Count	3	14	17	76	33	109
		% within groups	17.6%	82.4%	100.0%	69.7%	30.3%	100%
		% of Total	17.6%	82.4%	100.0%	69.7%	30.3%	100%

group that offered this in addition to other psychosocial components (enhanced CLPs). However, to trigger development beyond the last conventional stage (Achiever) to the first post-conventional stage (Individualist) and from the latter to the level above (Strategist) our results indicated that more extensive and challenging psychosocial development components are necessary, as only the enhanced CLP group was successful in doing so.

The results found in this study with respect to the MBTI Sensing and Intuition preferences have added greater nuance to those outlined above, as well as to our earlier findings (with the same sample) that a preference for Intuition was associated with significantly higher consciousness development on entry into leadership development programs and with greater consciousness development during the programs when compared to a preference for Sensing overall (Vincent et al., 2013). Differences in the distribution of Sensing and Intuition preferences between the groups in this study were examined to explore the possibility that any such differences might be confounding the results.

What we found, however, was complex. Although the standard CLP and control groups did, in fact, have a significantly greater proportion of Sensing participants, and were inferior (when compared to the enhanced CLP group) in facilitating shifts in those participants from the last conventional stage of consciousness (Achiever) to the first post-conventional stage (Individualist) and beyond, they were not significantly different to the enhanced CLP group in shifting those with a preference for Sensing within the conventional stages of development (i.e. from Expert to Achiever) or in shifting those with a preference for Intuition from Expert to Achiever or Achiever to Individualist. The results therefore indicate that the additional psychosocial challenges offered by the programs in the enhanced CLP group were of significance in terms of promoting post-conventional consciousness development only in those with a preference for Sensing.

Given our earlier findings with the same sample in relation to the greater consciousness development of those with a preference for Intuition (Vincent et al., 2013), the results from this study suggest that the latter have a greater propensity for consciousness development when participating in CLPs regardless of whether these include additional psychosocial challenges. This supports the idea of Intuition as a 'readiness factor' for consciousness development (Palus & Drath, 1995). The finding that the differences between the types of CLP groups in their capacity to promote post-conventional consciousness only related to the Sensing types reinforces our earlier recommendations that the latter require particular consideration in the design of programs to promote such development. Whereas provocative issues-based sessions may provide enough of a challenge to current meaning-making to trigger post-conventional development for Intuitives, additional psychosocial components of the types included in enhanced CLPs appear to be required to provide the extra impetus that Sensing types need in order to make such a shift. Given that Sensing types are in the majority world-wide (Schaubhut & Thompson, 2009) this consideration is particularly pertinent if we aim to develop the consciousness required to tackle our global adaptive challenges.

For those with a Sensing preference at the Achiever level of consciousness, it may of course also be the case that being in a group with a majority of people with a preference for Intuition (which is unusual) presents an additional psychosocial challenge that in itself (or in combination with other such challenges) provides a trigger for post-conventional growth. Why this would not also be the case for Sensing types at the Expert stage of consciousness is unclear—and something that could be investigated in future research.

Limitations and additional suggestions for future research

This study has several limitations. These include the small size of the control group, and the lack of participant follow-up, to ascertain whether consciousness development was maintained—as Manners et al. (2004) did with their small group of participants. Given the size of our sample and its geographic dispersion around Australia, undertaking the latter would have required substantial additional resources. However, since it is possible for consciousness development to regress (Manners & Durkin, 2001; Manners et al., 2004) then future research should aim to understand whether there are particular trait, state, environmental and sociocultural factors that impact the sustainability of newly-acquired consciousness levels post a developmental intervention (as well as those that influence development during such an intervention). It should also explore whether particular interventions are more able to facilitate a sustainable consciousness transition and why. Follow-up research could also usefully examine whether those who experience such maturation actually become better leaders in their communities.

Another important limitation of this research is our grouping together of the diverse additional psychosocial development components incorporated in enhanced CLP programs. Thus it is uncertain whether some of these may have been more effective in facilitating consciousness development than others. Moreover, programs were placed in the enhanced CLP group if they included just one of the specified additional psychosocial components—whereas some programs included several. Unfortunately, it was not possible to compare individual programs to ascertain whether any particular types of psychosocial enhancements (or combinations of these) were more effective than others for two reasons. The first is the small size of the samples at the program level—particularly when comparing participants at different levels of consciousness development within these programs. More importantly however, the community leadership sector is small in Australia and the programs are well-connected with each other. Any comparison of individual programs by psychosocial components would likely identify them and would thus breach ethical standards for the research. Future research could overcome this limitation by designing specific interventions to test particular psychosocial elements rather than utilising pre-existing programs. In addition, as Bartone et al. (2007) have argued, much more work needs to be done, both to establish whether, as suggested by some researchers, there are generalised processes (such as meditation) which may foster or speed growth throughout the developmental process, and to clarify the specific factors that influence development at each consciousness level. Consideration should also be given to whether such processes and factors are different for those with preferences for Sensing and Intuition.

Another possible limitation is the difference in education level found in the enhanced CLP group when compared to the standard CLP and control groups. Although the correlation between education level and stage of consciousness on program entry was small and there was no significant relationship found between program exit and entry consciousness levels and education, we did not control for the former. As outlined previously, Miller (1994) found that high levels of education did not guarantee high levels of consciousness development but Truluck and Courtenay (2002) found a positive relationship between the two in older adults. Research investigating the impact of education on post-conventional consciousness development is virtually non-existent and should be a consideration in future studies.

Finally, the differences in recruitment of participants into the CLPs and the control programs could be considered a possible limitation. However, given that no differences were found in our analyses between the standard CLP and control groups it seems unlikely that differential recruiting procedures introduced a bias. Similar recruiting criteria and procedures are utilised across all CLPs and so whatever bias they might have introduced should be applicable to both CLP groups—not just the enhanced group. That said, it is possible that programs with enhanced psychosocial challenges are more attractive to certain people—perhaps those with particular 'readiness for development' factors (Palus & Drath, 1995). We found a greater proportion of Intuitives in the enhanced CLP group and it is possible that there may be other self-selection biases that we have not accounted for that may have influenced the outcomes of this research. Again, a research design that did not utilise pre-existing programs could minimise such potential sources of bias.

Practise implications and conclusions

The results of this research suggest that when aiming to develop consciousness to post-conventional levels, designers of leadership development programs should be guided by the conceptual framework formulated by Manners and Durkin (2000). Programs need to be personally salient for participants, interpersonal in nature, emotionally engaging and challenging, but amenable to positive interpretation. They should include psychosocial challenges that offer ambiguous challenges and exposure to diverse perspectives and support deep self-reflection, learning from experience, experimentation and risk-taking The study results indicate that this is particularly important when attempting to assist those with a preference for Sensing to develop post-conventional consciousness. As noted above, it may be that greater-than-usual exposure to the alternative perspectives and values of people with a preference for Intuition may provide additional challenges that assist in shifting Sensing people's habits of mind. However, the converse does not appear to apply to those with a preference for Intuition.

It follows that traditional management and leadership development programs are not likely to develop the consciousness shifts needed to tackle the kinds of adaptive problems faced by organisations, communities, and globally. Akrivou and Bradbury-Huang (2014), Donovan (1997) and Rooke and Torbert (2005) have argued for example, that MBA programs tend not to offer disequilibriating psychosocial challenges for levels of consciousness development beyond the Expert level; rather, they offer horizontal development for those beyond this stage. Thus, as Akrivou and Bradbury-Huang (2014) noted, they may reproduce managers as 'ostensibly morally neutral technicians engaged in a world of purely rational problem solving' (p. 13). In order to reach a tipping point for a shift in our global capacity to tackle our adaptive challenges, numbers are critical. Business schools and other organisations that offer development for future leaders need to recognise what is at stake and transform themselves from socialising graduates to reproduce the status quo to helping them expand humanity's horizons for the betterment of societies (Akrivou & Bradbury-Huang, 2014).

In order to challenge the predominant world views and develop leaders with the necessary creative, innovative and analytical abilities, long-range perspectives, and tolerance for ambiguity and uncertainty, trainers must move beyond horizontal development and incorporate vertical (psychosocial) development processes into leadership programs, taking account of the levels of consciousness development at which program entrants are currently functioning (Bartone et al., 2007; Forsythe, Snook, Lewis, & Bartone, 2002; Kuhnert & Lewis, 1987) as well as their Sensing-Intuition preferences. Their success will, of course, require program professionals who have the capacity to effectively facilitate these vertical processes (Petriglieri, 2011). Recent suggestions have also been made for promoting vertical development within the workplace environment through feedback, participation and delegation that is tailored to the limitations of each developmental stage in leader–follower dyads (Valcea et al., 2011), through developmental mentoring networks (Ghosh, Haynes, & Kram, 2013) and through the cultivation of a developmental organisational culture (Drath, Palus, & McGuire, 2010).

Meanwhile, it is clear that Australian community leadership programs that focus on interpersonally-based, issue-centred awareness-raising and other psychosocial challenges can be successful in facilitating shifts in consciousness to post-conventional levels in their participants. The emphasis on recruiting people in positions of formal leadership into CLPs helps to mitigate the problem highlighted in the adage that sending a changed person back to an unchanged system is an exercise in futility. As Day et al. (2009) have noted, a formal leader is more likely to be in a position to influence such a system in positive ways. With over 6000 graduates of such programs in Australia, and their continued expansion into other regions of the country and throughout the Asia Pacific region, we believe enhanced CLPs have the potential to do as Donovan (1997) suggested—create a 'snowball' effect of higher level thinking that rolls throughout communities, organisations and institutions, and eventually lifts consciousness capacity more generally. They also offer a potential practise model for the development of leadership and other programs to support the transformation from conventional to post-conventional consciousness.

References

Akrivou, K., & Bradbury-Huang, H. (2014). Educating integrated catalysts: Transforming business schools toward ethics and sustainability. *Academy of Management Learning & Education*. http://dx.doi.org/10.5465/amle.2012.0343 (Advance online publication).

Australian Workforce and Productivity Agency (2013). *Future Focus: 2013 National Workforce Development Strategy*. Commonwealth of Australia Retrieved from Australian Workforce and Productivity Agency website: http://www.awpa.gov.au/our-work/Workforce%20development/national-workforce-development-strategy/2013-workforce-development-strategy/Documents/FutureFocus2013NWDS.pdf.

Barker, E.H., & Torbert, W.R. (2011). Generating and measuring practical differences in leadership performance at postconventional action-logics. In A.H. Pfaffenberger, P.W. Marko, & A. Combs (Eds.), *The postconventional personality: Assessing, researching, and theorizing* (pp. 39–56). New York: State University of New York Press.

Bartone, P., Snook, S., Forsythe, G., Lewis, P., & Bullis, C. (2007). Psychosocial development and leader performance of military officer cadets. *The Leadership Quarterly*, *18*, 490–504. http://dx.doi.org/10.1016/j.leaqua.2007.07.008.

Brown, B. (2011). Conscious leadership for sustainability: How leaders with late-stage action logic design and engage in sustainability initiatives. (Doctoral dissertation). Retrieved from http://integralthinkers.com/wp-content/uploads/Brown_2011_Conscious-leadership-for-sustainability_Full-dissertation_v491.pdf

Bushe, G.R., & Gibbs, B.W. (1990). Predicting organisation development consulting competence from the Myers Briggs Type Indicator and stage of ego development. *The Journal of Applied Behavioural Science*, *26*, 337–357. http://dx.doi.org/10.1177/0021886390263008.

Capraro, R.M., & Capraro, M.M. (2002). Myers–Briggs Type Indicator score reliability across: Studies a meta-analytic reliability generalization study. *Educational and Psychological Measurement*, *62*, 590–602. http://dx.doi.org/10.1177/0013164402062004004.

Cohn, L.D. (1998). Age trends in personality development: A quantitative review. In P.M. Westenberg, A. Blasi, & L.D. Cohn (Eds.), *Personality development: Theoretical, empirical and clinical investigations of Loevinger's conception of ego development* (pp. 133–143). Hillsdale, NJ: Erlbaum.

Cohn, L.D., & Westenberg, P.M. (2004). Intelligence and maturity: Meta-analytic evidence for the incremental and discriminant validity of Loevinger's measure of ego development. *Journal of Personality and Social Psychology*, *86*(5), 760–772. http://dx.doi.org/10.1037/0022-3514.86.5.760.

Cook-Greuter, S. (1999). Postautonomous ego development: A study of its nature and measurement. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses, database http://search.proquest.com/docview/304503009?accountid=8203

Cook-Greuter, S.R. (2004). Making the case for a developmental perspective. *Industrial and Commercial Training*, *36*(7), 275–281. http://dx.doi.org/10.1108/00197850410563902.

Cranton, P. (2006). *Understanding and promoting transformative learning: A guide for educators of adults*. San Francisco, CA: Jossey-Bass.

Daloz Parks, S. (2005). *Leadership can be taught: A bold approach for a complex world*. Boston: Harvard Business School Publishing.

Day, D.V., Harrison, M.M., & Halpin, S.M. (2009). *An integrative approach to leader development: Connecting adult development, identity, and expertise*. New York: Psychology Press.

Day, D.V., & Lance, C.E. (2004). Understanding the development of leadership complexity through latent growth modeling. In D.V. Day, S.J. Zaccaro, & S.M. Halpin (Eds.), *Leader development for transforming organizations: Growing leaders for tomorrow* (pp. 41–69). USA: Psychology Press.

Donovan, T. (1997). *The edge of the possible: Intelligence of a new era*. New South Wales: Business and Professional Publishing.

Drath, W.H., Palus, C.J., & McGuire, J.B. (2010). Developing interdependent leadership. In E. Van Velsor, C.D. McCauley, & M.N. Ruderman (Eds.), *Handbook of leadership development* (3rd ed.). San Francisco: Jossey-Bass.

Eigel, K.M., & Kuhnert, K.W. (2005). Authentic development: Leadership development level and executive effectiveness. *Monographs in Leadership and Management*, *3*, 357–385.

Einstein, D., & Lanning, K. (1998). Shame, guilt, ego development and the five-factor model of personality. *Journal of Personality*, *66*(4), 555–582.

Forsythe, G.B., Snook, S.A., Lewis, P., & Bartone, P.T. (2002). Making sense of officership: Developing a professional identity for 21st century army officers. In D.M. Snider, G. L. Watkins, & L.J. Matthews (Eds.), *The future of the army profession* (pp. 357–378). New York: McGraw-Hill Primus Publishing.

Furnham, A. (1996). The big five versus the big four. *Personality and Individual Differences*, *21*, 303–307. http://dx.doi.org/10.1016/0191-8869(96)00033-5.

Furnham, A., Dissou, G., Sloan, P., & Chamorro-Premuzic, T. (2007). Personality and intelligence in business people: A study of two personality and two intelligence measures. *Journal of Business and Psychology*, *22*(1), 99–109. http://dx.doi.org/10.1007/s10869-007-9051-z.

Furnham, A., Moutafi, J., & Crump, J. (2003). The relationship between the revised NEO-personality inventory and the Myers–Briggs Type Indicator. *Social Behaviour and Personality*, *31*, 577–584. http://dx.doi.org/10.2224/sbp.2003.31.6.577.

Gardner, W.L., & Martinko, M.J. (1996). Using the Myers–Briggs Type Indicator to study managers: A literature review and research agenda. *Journal of Management*, *22*(1), 45–83 (Retrieved from http://www.sagepub.com.proxy.library.adelaide.edu.au/journal.aspx?pid=10604).

Ghosh, R., Haynes, R.K., & Kram, K.E. (2013). Developmental networks at work: Holding environments for leader development. *Career Development International*, *18*(3), 232–256. http://dx.doi.org/10.1108/CDI-09-2012-0084.

Guerette, R.H. (1986). Environmental integrity and corporate responsibility. *Journal of Business Ethics*, *5*, 409–415 (Retrieved from http://www.springerlink.com.proxy.library.adelaide.edu.au/home/main.mpx).

Harrington, R., & Loffredo, D.A. (2001). The relationship between life satisfaction, self-consciousness, and the Myers–Briggs Type Inventory dimensions. *The Journal of Psychology*, *135*(4), 439–450 (Retrieved from http://www.taylorandfrancisgroup.com/).
Hauser, S.T. (1976). Loevinger's model and measure of ego development: A critical review. *Psychological Bulletin*, *83*, 928–955. http://dx.doi.org/10.1037/0033-2909.83.5.928.
Heifetz, R., Grashow, A., & Linsky, M. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organisation and the world.* Boston: Harvard Business School Publishing.
Helsing, D., & Howell, A. (2013). Understanding leadership from the inside out: Assessing leadership potential using constructive developmental theory. *The Journal of Management Inquiry*. http://dx.doi.org/10.1177/1056492613500717 (Retrieved from http://jmi.sagepub.com/content/early/2013/09/05/1056492613500717).
Hewlett, D. C. (2004). *A qualitative study of Postautonomous ego development: The bridge between postconventional and transcendent ways of being* (Unpublished doctoral dissertation). USA: Fielding Graduate institute, Retrieved from Proquest UMI database (pp. 3120900).
Hogansen, J., & Lanning, K. (2001). Five Factors in Sentence Completion Test Categories: Toward Rapprochement between Trait and Maturational Approaches to Personality. *Journal of Research in Personality*, *35*, 449–462. http://dx.doi.org/10.1006/jrpe.2001.2331.
Hy, L.X., & Loevinger, J. (1996). *Measuring ego development* (2nd ed.). New Jersey: Lawrence Erlbaum Associates.
Joiner, B., & Josephs, S. (2007). Developing agile leaders. *Industrial and Commercial Training*, *39*(1), 35–42. http://dx.doi.org/10.1108/00197850710721381.
Kegan, R. (1994). *In over our heads: The mental demands of modern life.* Cambridge: Harvard University Press.
Kegan, R., & Lahey, L.L. (2009). *Immunity to change.* Boston: Harvard Business Press.
King, P.J., & Roberts, N.C. (1992). An investigation into the personality profile of policy entrepreneurs. *Public Productivity & Management Review*, *XVI*(2), 173–190 (Retrieved from http://www.jstor.org.proxy.library.adelaide.edu.au/stable/10.2307/3380990).
Kuhnert, K.W., & Lewis, P. (1987). Transactional and transformational leadership: A constructive developmental analysis. *Academy of Management Review*, *12*(4), 648–657 (Retrieved from http://www.jstor.org/stable/258070).
Kurtz, J.E., & Tiegreen, S.B. (2005). Matters of conscience and conscientiousness: The place of ego development in the five factor model. *Journal of Personality Assessment*, *85*(3), 312–317. http://dx.doi.org/10.1207/s15327752jpa8503_07.
Laske, O.E. (2003). Executive development as adult development. In J. Demick, & C. Andreoletti (Eds.), *Handbook of adult development* (pp. 565–584). US: Springer.
Lilienfeld, S.O., Wood, J.M., & Garb, H.N. (2000). The scientific status of projective techniques. *Psychological science in the public interest*, *1*(2), 27. http://dx.doi.org/10.1111/1529-1006.002.
Lloyd, J.B. (2012). The Myers–Briggs Type Indicator® and mainstream psychology: Analysis and evaluation of an unresolved hostility. *Journal of Beliefs & Values*, *33*(1), 23–34. http://dx.doi.org/10.1080/13617672.2012.650028.
Loevinger, J. (1976). *Ego development.* San Francisco: Jossey-Bass.
Loevinger, J. (1979). Construct validity of the Sentence Completion test of ego development. *Applied Psychological Measurement*, *3*, 281–311. http://dx.doi.org/10.1177/014662167900300301.
Loevinger, J. (1985). A revision of the sentence completion test for ego development. *Journal of Personality and Social Psychology*, *48*, 420–427. http://dx.doi.org/10.1037/0022-3514.48.2.420.
Loevinger, J., Cohn, L.D., Bonneville, L.P., Redmore, C.D., Surcich, D.D., & 8: Sargent, M. (1985). Ego development in college. *Journal of Personality and Social Psychology*, *48*, 947–962.
Loevinger, J., & Wessler, R. (1970). *Measuring ego development*, *vol. 1*, San Francisco: Jossey-Bass.
MacDonald, D.A., Anderson, P.E., Tsagarakis, C.I., & Holland, C.J. (1994). Examination of the Myers–Briggs Type Indicator and the NEO personality Inventory. *Psychological Reports*, *74*, 339–344. http://dx.doi.org/10.2466/pr0.1994.74.1.339.
Manners, J., & Durkin, K. (2000). Processes involved in adult ego development: A conceptual framework. *Developmental Review*, *20*, 475–513. http://dx.doi.org/10.1006/drev.2000.0508.
Manners, J., & Durkin, K. (2001). A critical review of the validity of ego development theory and its measurement. *Journal of Personality Assessment*, *77*(3), 541–567. http://dx.doi.org/10.1207/S15327752JPA7703_12.
Manners, J., Durkin, K., & Nesdale, A. (2004). Promoting advanced ego development among adults. *Journal of Adult Development*, *11*(1), 20–27. http://dx.doi.org/10.1023/B:JADE.0000012524.32002.8d.
Marko, P. (2006). Exploring facilitative agents that allow ego development to occur. *Dissertation Abstracts International*, *67*(4), 2260B.
Marko, P. (2011). Exploring facilitative agents that allow ego development to occur. In A.H. Pfaffenberger, P.W. Marko, & A. Combs (Eds.), *The postconventional personality: Assessing, researching, and theorizing* (pp. 87–100). New York: State University of New York Press.
Marrewijk, M.V., & Were, M. (2003). Multiple levels of corporate sustainability. *Journal of Business Ethics*, *44*(2/3), 107–119 (Retrieved from http://www.springerlink.com.proxy.library.adelaide.edu.au/home/main.mpx).
McCauley, C.D., Drath, W.H., Palus, C.J., O'Connor, P.M.G., & Baker, B.A. (2006). The use of constructive developmental theory to advance the understanding of leadership. *The Leadership Quarterly*, *17*, 634–653. http://dx.doi.org/10.1016/j.leaqua.2006.10.006.
McCaulley, M.H. (1990). The Myers Briggs Type Indicator and leadership. In K.E. Clark, & M.B. Clark (Eds.), *Measures of leadership* (pp. 381–418). West Orange, NJ: Leadership Library of America.
McCrae, R.R., & Costa, P.T. (1989). Reinterpreting the Myers–Briggs Type Indicator from the perspective of the Five-Factor Model of personality. *Journal of Personality*, *57*(1), 17–39. http://dx.doi.org/10.1111/j.1467-6494.1989.tb00759.x.
Merriam, S.B., & Clark, M.C. (2006). Learning and development: The connection in adulthood. In C. Hoare (Ed.), *Handbook of adult development and learning* (pp. 27–51). New York: Oxford University Press.
Merron, K.A. (1985). The relationship between ego development and managerial effectiveness under conditions of high uncertainty. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database http://search.proquest.com/docview/303377696?accountid=8203
Merron, K.A., Fisher, D., & Torbert, W. (1987). Meaning making and management action. *Group and Organization Studies*, *12*(3), 274–286. http://dx.doi.org/10.1177/105960118701200304.
Miller, M. (1994). World views, ego development, and epistemological changes from the conventional to the postformal: A longitudinal perspective. In M.E. Miller, & S.R. Cook-Greuter (Eds.), *Transcendence and mature thought in adulthood: Further reaches of adult development*. Maryland: Rowman & Littlefield Publishers.
Miller, M.E., & Cook-Greuter, S.R. (1994). From postconventional development to transcendence: Visions and theories. In M.E. Miller, & S.R. Cook-Greuter (Eds.), *Transcendence and mature thought in adulthood: Further reaches of adult development*. Maryland: Rowman & Littlefield Publishers.
Morros, M., Pushkar, D., & Reis, M. (1998). A study of current, former, and new elderly volunteers: A comparison of developmental and trait models of personality. *Journal of Adult Development*, *5*(4), 219–230. http://dx.doi.org/10.1023/A:1021402325477.
Myers, I. Briggs, McCaulley, M.H., Quenk, N.L., & Hammer, A.L. (2003). *MBTI manual: A guide to the development and use of the Myers–Briggs Type indicator* (3rd ed.). California: CPP Inc.
Novy, D.M., Blumentritt, T.L., Nelson, D.V., & Gaa, A. (1997). The Washington University Sentence Complete Test: Are the two halves alternate forms? Are the female and male forms comparable? *Journal of Personality Assessment*, *68*(3), 616–627. http://dx.doi.org/10.1207/s15327752jpa6803_9.
Novy, D.M., & Francis, D.J. (1992). Psychometric properties of the Washington University Sentence Completion Test. *Educational and Psychological Measurement*, *52*, 1029–1039. http://dx.doi.org/10.1177/0013164492052004027.
Pallant, J. (2007). *SPSS survival manual.* New South Wales: Allen & Unwin.
Palus, C.J., & Drath, W.H. (1995). *Evolving leaders: A model for promoting leadership development in programs.* USA: Centre for Creative Leadership.
Petriglieri, G. (2011). Identity workspaces for leadership development. In S. Snook, N. Nohria, & R. Khurana (Eds.), *The handbook for teaching leadership* (pp. 295–312). Thousand Oaks, CA: Sage.
Petriglieri, G., & Petriglieri, J.L. (2010). Identity workspaces: The case of business schools. *Academy of Management Learning & Education*, *9*(1), 44–60.
Pfaffenberger, A. (2005). Optimal adult development: An inquiry into the dynamics of growth. *Journal of Humanistic Psychology*, *45*(3), 279–301. http://dx.doi.org/10.1177/0022167804274359.

Redmore, C., & Waldman, K. (1975). Reliability of a sentence completion measure of ego development. *Journal of Personality Assessment*, *39*, 236–242. http://dx.doi.org/10.1207/s15327752jpa3903_4.
Rooke, D., & Torbert, W.R. (1998). Organisational transformations as a function of CEO's developmental stage. *Organization Development Journal*, *16*(1), 11–28 (Retrieved from http://www.odinstitute.org).
Rooke, D., & Torbert, W.R. (2005, April). Seven transformations of leadership. *Harvard Business Review*, *1–12* (Retrieved from http://www.newperspectives.com.au/downloads/seven%20transformations%20of%20leadership.pdf).
Schaubhut, N.A., & Thompson, R.C. (2009). *MBTI Type Tables International.* California: CPP Inc.
Strang, S.E., & Kuhnert, K.W. (2009). Personality and leadership developmental levels as predictors of leader performance. *The Leadership Quarterly*, *20*, 421–433. http://dx.doi.org/10.1016/j.leaqua.2009.03.009.
Taylor, K. (2006). Autonomy and self-directed learning: A developmental journey. In C. Hoare (Ed.), *Handbook of adult development and learning* (pp. 196–218). New York: Oxford University Press.
Torbert, B., Cook-Greuter, S., Fisher, D., Foldy, E., Gauthier, A., Keeley, J., et al. (2004). *Action inquiry: The secret of timely and transforming leadership.* San Francisco: Berrett-Koehler Publishers Inc.
Truluck, J.E., & Courtenay, B.C. (2002). Ego development and the influence of gender, age, and educational levels among older adults. *Educational Gerontology*, *28*(4), 325–336. http://dx.doi.org/10.1080/036012702753590433.
Valcea, S., Hamdani, M.R., Buckley, M.R., & Novicevic, M.M. (2011). Exploring the developmental potential of leader–follower interactions: A constructive-developmental approach. *The Leadership Quarterly*, *22*(4), 604–615. http://dx.doi.org/10.1016/j.leaqua.2011.05.003.
Vincent, N., Ward, L., & Denson, L. (2013). Personality preferences and their relationship to ego development in Australian leadership program participants. *Journal of Adult Development*, *20*(4), 197–211. http://dx.doi.org/10.1007/s10804-013-9171-9.
Westenberg, P.M., & Block, J. (1993). Ego development and individual differences in personality. *Journal of Personality and Social Psychology*, *65*(4), 792–800. http://dx.doi.org/10.1037/0022-3514.65.4.792.
Wilber, K. (2000). *Integral psychology.* Boston: Shambhala Publications.
Wright, T.M., & Reise, S.P. (1997). Personality and unrestricted sexual behaviour: Correlations of sociosexuality in Caucasian and Asian college students. *Journal of Research in Personality*, *31*(2), 166–192. http://dx.doi.org/10.1006/jrpe.1997.2177.
Zaccaro, S.J. (2001). *The nature of executive leadership: A conceptual and empirical analysis of success.* Washington DC: American Psychological Association.
Zaccaro, S.J., Kemp, C., & Bader, P. (2004). Leader traits and attributes. In J. Antonakis, A.T. Cianciolo, & R.J. Sternberg (Eds.), *The nature of leadership* (pp. 101–124). Thousand Oaks, CA: Sage.