

chapter eight

Inspirational Chaos: Executive Coaching and Tolerance of Complexity

Peter J. Webb

The End of Normal

The historical events of 9/11, the subsequent wars, and the coincidental collapse of corporations and economies have heightened the perception of complexity and uncertainty in the business environment. Executive managers face unprecedented challenges, solutions for which are often beyond the reach of current practice (Wood, 2000). That we live in turbulent times is an understatement. “There is no more normal”, declares business commentator Seth Godin (2002). “We need a different way of organising work”.

Adapting to such an environment requires a high degree of tolerance of complexity, according to Garvey and Alred (2001). They refer to the root meaning of the word *tolerate* (from the Latin *tolerare tolerat* — “endure”) meaning to “allow the existence or occurrence of without authoritative interference”. Tolerance as “enduring” or “sustaining” is by no means passive. It requires a perception of the constantly changing organisational landscape as a field of bounded instability through which optimal performance is an emergent property.

Learning and development has been a crucial tool in developing tolerance in executive managers, yet the traditional training model does not seem to have resulted in sustained behavioural change. Over the past 15 years, coaching models based on the principles of psychology and education have evolved to provide more flexible and tailored learning solutions (Peltier, 2001; Zeus & Skiffington, 2000).

Martin (2002, p. 10) points out that coaching may be in vogue now because the time is ripe for a different approach to leadership. Up until recently, concerns about performance were addressed from the perspective of behaviour modification, with control as the underlying assumption. Current models of coaching, in contrast, are based on reflection and insight.

Kilburg (2000) suggests that coaching, at the highest level, not only develops reflection and insight, but also facilitates the emergence of wisdom.

Is wisdom a necessary attribute for executive managers to successfully tolerate complexity and uncertainty? And if so, is executive coaching a valid intervention for promoting tolerance of complexity?

The Inspiration of Chaos

Management and organisation science literature has focused on the objective control of agents and the assumption that interactions can be described in linear terms (Levy, 2000). A contrasting view evolves from chaos and complexity theory (also known as dynamic systems theory). As Lissack and Gunz (1999) assert, “complexity theory challenges the traditional management assumptions by noting that human activity allows for the possibility of emergent behaviour”.

Chaos and complexity theory offers a different way of viewing the field of management and leadership — a mental shift from the Newtonian cause-effect universe to a quantum field where uncertainty is the natural order (Stacey, 1996; Waldrop, 1992; Wheatley, 1992; Wheatley & Kellner-Rogers, 1999). Rather than trying to hold back the dark forces of chaos, organisations need to maintain a state of nonequilibrium, a kind of exquisite awareness at the edge of catastrophic change. This is the phase transition between stability and instability, where creativity and innovation occur. Here, the links between cause and effect give way to spontaneous self-organisation, and a maximisation of flexibility and responsiveness.

Despite the fact that chaos and complexity theory arises from observations in mathematics, physics and the natural world (Coveney & Highfield, 1991; Gleick, 1987), there is ample evidence of applications to the social sciences, particularly as a dialectical influence (Ayers, 1997; Bütz, 1997; Gilgen, 2000; Loye & Eisler, 1987; Mac Cormac & Stamenov, 1996; Warren, Franklin, & Streeter, 1998), and an incorporation into psychoanalysis (Pestana, 2001; Scharff & Procci, 2002). For example, nonlinear modelling has been used to describe group problem-solving productivity over multiple time intervals (Guastello, 1998), team coordination in the performance of simple games (Guastello & Guastello, 1998), and the self-organisation of a therapeutic alliance in long-term psychotherapy sessions (Tschacher & Scheier, 1997).

In a similar vein, Lewis and Junyk (1997) show how easily chaos and complexity theory can be incorporated into the dynamics of social systems through their narrative on the development bifurcations of the self-organisation of personality, and the core attractors of psychological defensive behaviours.

Kilburg (2000) uses the Cusp Catastrophe Model developed by Guastello (1987) to simulate the behavioural dynamics of frustration, aggression and tension in team decision-making. He also uses terms such as “virtuous

attractors” and “vicious attractors” to describe either creative or regressive patterns of behaviour that individuals or groups use readily in corporate environments.

The terminology of chaos applied to social systems has an immediate appeal in helping to explain the real world of organisational behaviours. Both Wheatley (1992) and Stacey (1995, 1996) have been particularly influential in using the conceptual framework of chaos and complexity theory to understand the creative possibilities inherent in a dynamic, self-organising enterprise.

Levy (1994, 2000) summarises the applications and limitations of this framework in organisations:

1. Chaotic systems never reach a stable equilibrium. Organisations might reach some temporary, relatively stable pattern, but this is likely to be short-lived.
2. Large fluctuations can be generated internally by deterministic chaotic systems, and small perturbations to networks, even when in an ordered state, can sometimes have major effects (suggesting that executive managers might underestimate the potential for large changes in industry conditions or competitors’ behaviour).
3. Short-term forecasting is possible in a chaotic deterministic system, given a reasonable specification of conditions in one time period (e.g., sophisticated computer modelling of weather is useful for a few days).
4. Complexity theory suggests that organic networks poised on the edge of chaos might give rise to self-organisation and emergent order that enable firms to prosper in an era of rapid change.

An extension of this framework is “Chaordic Systems Thinking”, coined by Fitzgerald and Eijnatten (2002a, 2002b) as a new way of viewing dynamic complexity in organisations — separate to systems thinking — and incorporating the fundamental principles of chaos and complexity theory as applied to human enterprise. “A chaordic system is one in which nothing ever happens the same way twice, and yet everything happens in an orderly enough way to preclude complete and utter mess” (Fitzgerald & Eijnatten, 2002a, p. 406). The five properties of a chaordic system are:

1. Consciousness: The presence of both a personal consciousness and an organisational consciousness (suggesting that executive managers need an appreciation for the intangible “within” of a system in order to create sustainable organisations).
2. Connectivity: Everything is connected at some point, even though the connection may be infinitesimally small, and this connectivity is strengthened through interaction.
3. Indeterminacy: The non-linearity of cause and effect, suggesting that every event is the result of the accumulation of all prior events, not just one.

4. Emergence: The sudden appearance of higher-order qualities, which originate from the dynamic interaction of the system's components, although they are neither found in nor are directly deducible from them.
5. Dissipation: The capacity of a chaotic system in "far-from-equilibrium" conditions to fall apart structurally while simultaneously maintaining the integrity of its core identity (e.g., an organisation may dissipate intentionally, choosing to leap through a window of opportunity rather than risk the ultimate catastrophe of maximum fatal chaos).

As Perna and Masterpasqua (1997) point out, the framework of chaos and complexity theory is based on two fundamental assumptions: that apparently random and disordered behaviour may very often have meaning, and "that this meaning is acquired because of the vital role chaos plays in the self-organizing processes of human change and development" (Perna & Masterpasqua, 1997, p. 17).

So, how does this help executive managers in their tolerance of complexity and uncertainty? Utilising the chaos framework, Ball (2000) interviewed managers and found common themes emerging from those who could best carry out their managerial responsibilities under complex and uncertain conditions:

1. accepting complexity and uncertainty as the way of the world
2. establishing guiding principles for setting priorities and making decisions
3. making timely decisions
4. managing the information flow
5. nurturing and sustaining relationships
6. acknowledging and processing emotions
7. being a continuous learner.

These themes provide a useful working framework that may allow managers to "operate at the edge where long-term outcomes are unknowable" (Stacey, 1995, p. 488). In particular, the emergent quality of learning in a complex environment (Argyris, 1993; Barrett, 1999) provides an opportunity for managers to improve their tolerance of complexity.

Wisdom as a Strategy for Tolerance of Complexity

What is the best form of decision-making process in uncertainty? Researchers have generally found that vigilant decision-making processes are superior to hypervigilant decision-making processes under experimental conditions (Keinan, 1987; Baradell & Klein, 1993). Vigilant processes are the familiar sensible, logical and rational approach to problems characterised by: a systematic, organised information search; thorough consideration of all available alternatives; devotion of sufficient time to evaluate each alternative; and the re-examination and review of data before making a decision.

However, decisions are not always made in the controlled, unhurried and simple conditions of many experiments. In more naturalistic tasks, Johnston, Driskell, and Salas (1997) found that a hypervigilant strategy was significantly more effective than a vigilant strategy under both normal and high-stress conditions. The selective focus, filtering of information and accelerated processing of information characteristic of hypervigilant decision making may be a highly adaptive and effective response in the face of increased task demands.

In complex systems, the output of decision making is also a source of input to the system. This means that the emotional and personal elements of decision-making processes need to be carefully considered. Higgins (2000) proposes that when people experience a “good fit” between a personal goal and their own self-regulatory style they are more likely to value activities in pursuit of the goal, and to report feeling alert, energised and good about what they have done. “Feeling good” is a normative assessment, which forms the basis of a positive psychology where happiness and wellbeing are the desired outcomes. Happiness can be thought of as an outcome of life: “the overall appreciation of one’s life as a whole” (Veenhoven, 2003, p.128). This dimension takes a whole-of-life perspective on decision-making: How does a particular choice contribute to a meaningful life? Seligman (2003) suggests that it depends on what kind of life you wish to lead: A “pleasant life” is one that “successfully pursues the positive emotions about the present, past, and future”; the “good life” is “using your strengths and virtues to obtain abundant gratification in the main realms of life”, and; a “meaningful life” is “the use of your strengths and virtues in the service of something much bigger than you are” (Seligman, 2003, p. 127).

Making decisions “in the service of something much bigger than you are” is a fundamental characteristic of human wisdom and, it is suggested here, an essential characteristic of executive decision making in enterprises facing turbulent and uncertain times.

Various conceptualisations of wisdom have been proposed. Arlin (1990) defines the features of wisdom in terms of questions rather than answers. Wisdom involves an approach or attitude to phenomena which is characterised by six features:

1. the search for complementarity: discovery of overlap and agreement in what appear to be unrelated or contradictory phenomena
2. the detection of asymmetry: ability to notice relevant and often subtle features
3. openness to change: willingness to remain open to receive new information, and on the basis of that information to be willing to change one’s world-view
4. pushing the limits: formulation of problems in ways that will give direction and meaning to the choices made, rather than close conformity to an acknowledged standard of right or wrong

5. a taste for problems of fundamental importance: strong conviction about what matters most
6. preference for certain conceptual moves: such as “active experimentation”, or “discovery-oriented behaviour”.

Kitchener and Brenner (1990) discuss wisdom from the reflective judgement model of adult cognitive development, suggesting four aspects or conditions for wisdom:

1. the presence of unavoidably difficult, “thorny” problems inherent in the lives of adults
2. a comprehensive grasp of knowledge characterised by both breadth and depth
3. a recognition that knowledge is uncertain and that it is not possible for truth to be absolutely knowable at any given time
4. a willingness and exceptional ability to formulate sound, executable judgements in the face of this uncertainty.

Wisdom, according to Chandler and Holliday (1990), is a well-defined, multi-dimensional competency, the key elements of which are exceptional understanding, judgement and communication skills, and general competence. Wisdom arises in the face of difficult, real-life problems — often ones that involve pragmatic decisions under conditions of paradox and contradiction.

The notion of wisdom-as-knowledge is used by Sternberg (1990) to distinguish between intelligence, creativity and wisdom. His “balance theory of wisdom” emphasises the role of tacit knowledge, which he sees as a kind of action-oriented knowledge — a form of “knowing how” rather than “knowing that” — which is indirectly acquired and not domain-specific (Sternberg, 1998).

Baltes and Kunzmann (2003, p.131) define wisdom as “expert knowledge and judgment about important, difficult and uncertain questions associated with the meaning and conduct of life”. The work of Baltes and colleagues (Baltes, Glück, & Kunzmann, 2002) has resulted in the formation of the “Berlin wisdom paradigm”, which proceeds from the philosophical and cultural-anthropological concepts of wisdom to place these into the context of psychological theory and methods. Using standardised procedures to collect “think-aloud” responses, trained raters evaluate responses according to five criteria thought to define wisdom-related knowledge:

1. factual knowledge: includes topics such as human nature, lifelong development, interpersonal relations, social norms, and individual differences in development and outcomes
2. procedural knowledge: comprises strategies and heuristics for dealing with life problems (e.g., the structuring and weighing of life goals, ways to handle conflict, or alternative back-up strategies)

3. lifespan conceptualisation: refers to knowledge about the many different themes and contexts of human life, their interrelationships, and cultural variations
4. value relativism and tolerance: refers to the acknowledgement of individual and cultural differences in values, with an explicit interest in achieving a balance between individual and collective interests and a focus on human values
5. recognition and management of uncertainty: refers to knowledge about the limitations of information processing by humans and about the low predictability of occurrences and consequences in human life, but also about ways to deal with such uncertainties.

Wisdom has been found to have psychometric properties which overlap with measures of intelligence, personality and their interface, yet possess distinctly different characteristics (Staudinger, Lopez, & Baltes, 1997; Webster, 2003).

However, most adults are not wise. Only some people have access to and acquire knowledge about the conduct and meaning of life that comes close to wisdom, and age is a necessary, but not a sufficient condition for wisdom. Baltes et al. (2002) found that wisdom-related knowledge increases sharply during adolescence and young adulthood, but, on average, remains relatively stable during middle adulthood and young old age. Peak performances seemed to be more likely in the 50–60 age group, and professional specialisation was found to be the strongest predictor.

According to Sternberg (1998), executive managers must be able to apply both tacit and technical knowledge, mediated by values, toward the goal of achieving a common good. This requires finding a balance among competing interpersonal, intrapersonal and extrapersonal interests, and the capacity to adapt to the existing environmental contexts, or finding a way of shaping them, or selecting new ones, over both the short and long terms.

These definitions suggest that the use of wisdom may be the most adaptive decision-processing tool in conditions of uncertainty, and that wisdom requires a certain tolerance of complex environments. Wisdom clearly suits the domain of difficult and “thorny” life decisions with no right answers faced by executive decision-makers in a post-apocalyptic world. However, this raises two important questions. Can wisdom be transferred? And does executive coaching enhance wisdom?

Executive Coaching as a Tool for Wisdom

Executive coaching is a solution-focused dialogue, which promotes the enhancement of work performance and, particularly, the self-directed learning and personal growth of the client (Greene & Grant, 2003).

Boyatzis (2001) defines self-directed learning as the learning agenda which arises out of a perceived gap between the ideal self and the current

reality. And Garvey & Alred (2001) refer to the development of reflective skills and metacognitions as essential to learning in complex environments.

Self-regulation is certainly a required condition for achieving goals (Carver & Scheier, 1998), but other processes such as self-monitoring (Peterson, 1996), appreciative inquiry (Hammond & Royal, 1998) and even mindfulness meditation (Benson, 1996) may be part of the practice of self-reflection in coaching.

The critical element of self-reflection in self-directed learning is not only a key aspect of action learning (Argyris, 1993; Schon, 1987), but also of wisdom. Evaluative reflection on one's past and present life serves a host of valuable functions including identity formation and maintenance, self-understanding, problem-solving and adaptive coping (Webster, 2003).

Action learning and evaluative reflection are core components of executive coaching according to Kilburg's (2000, p. 74) six-stage "circle of awareness" process. He defines three levels of reflection: learning in action (being self-aware of task), reflection on learning in action (being aware of the available ways or learning routines for approaching task) and reflection on reflection on learning in action (being aware of the multiple environmental complexities of the situation and able to revise available learning routines for the emergence of new forms of relationships).

These levels of reflection and learning loops can be applied to what Kilburg (2001) refers to as the path of progressive development: "The layering of experience, learning, and deliberate efforts to change the self through time in the context of social roles and occurring in the complexity of the inner biopsychological life space of the participants" (Kilburg, 2001, p. 257).

Does this imply that wisdom can be learnt? Sternberg (2001a) has outlined, and begun to implement, a curriculum for teaching wisdom in schools, teaching children not *what* to think, but rather *how* to think. There may be some overlap between wisdom, philosophy and creative thinking (Halpern, 2001; Kuhn & Udell, 2001; Perkins, 2001), but Sternberg's curriculum seems eminently applicable to executive managers in the context of executive coaching:

1. Explore with students the notion that conventional abilities and achievements are not enough for a satisfying life.
2. Demonstrate how wisdom is critical for a satisfying life.
3. Teach students the usefulness of interdependence.
4. Role-model wisdom (because what you do is more important than what you say).
5. Have students read about wise judgements.
6. Help students to *recognise* their own interests, those of other people and those of institutions.

7. Help students learn to *balance* their own interests, those of other people, and those of institutions.
8. Show students that the means, and not just the end, matter.
9. Help students learn the roles of adaptation, shaping, and selection, and how to balance them.
10. Encourage students to form, critique and integrate their own values in their thinking.
11. Encourage students to think *dialectically*, recognising that both questions and their answers evolve over time, and that the answer to an important life question can differ at different times in one's life.
12. Show students the importance of *dialogical* thinking, whereby they understand interests and ideas from multiple points of view.
13. Teach students to search for the common good — a good where everyone wins.
14. Encourage and reward wisdom.
15. Teach students to monitor events in their lives and their own thought processes about these events.
16. Help students understand the importance of inoculating oneself against the pressures of unbalanced self-interest and small-group interest.

Of particular relevance to executive coaching are the principles of *dialogical thinking* (encouraging the thinker, i.e., the client, to understand problems from multiple points of view), and *dialectical thinking* (developing an understanding in the client that both questions and their answers evolve over time and can differ at different life stages). Sternberg (2001a) also advocates the reflective articulation, critique and integration of the client's values into their thinking; and an emphasis on critical, creative and practical thinking, particularly on trying to reach the common good.

Sternberg (2001a) alludes to the influence of a significant other in the teaching of wisdom through the importance of a role model, but he might just as well be referring to the role of a coach.

Similarly, Pascual-Leone (2000) recommends mentors and psychotherapists as suitable agents of the client's external path to wisdom. And one of the findings of the Berlin wisdom paradigm is the contribution of wisdom-enhancing mentors to a development of higher levels of wisdom-related knowledge (Baltes et al., 2002; Baltes & Kunzmann, 2003).

Staudinger & Baltes (1996) demonstrated that social interaction plays a significant role in wisdom-related performance. Participants who discussed a wisdom-related problem with a significant other person before giving their individual responses produced a substantial increase in performance over those who were just given some time to think about the problem by themselves.

In another study, participants were instructed in the use of a cognitive strategy. They were asked to imagine travelling around the world on a cloud

visiting other places and cultures and were asked to construct mental images of each place and culture. When subsequently presented with practice wisdom tasks they demonstrated significant increases in targeted wisdom criteria over those participants who had not been instructed in the “cloud journey” tool. The authors conclude that wisdom-related knowledge may be available in principle, but is not used as a guiding strategy until activated by mental representations or mental scripts (Staudinger & Baltes, 1996).

This suggests that executive managers could be similarly encouraged by coaching to broaden their epistemological framework and elicit mental representations of knowledge for dealing with wisdom-related problems.

Based on Sternberg’s (2001a, 2001b) wisdom curriculum and the Berlin wisdom paradigm (Baltes et al., 2002), it is possible to outline a set of coaching principles for enhancing tolerance of complexity and wisdom-based decision-making processes in executive managers:

1. Facilitate recognition and management of uncertainty.
2. Promote dialogical thinking.
3. Encourage dialectical thinking.
4. Stimulate the articulation, critique and integration of values into thinking.
5. Emphasise critical, creative and practical thinking in relation to the common good.
6. Serve as a role model of wisdom.
7. Activate mental representations of wisdom-related knowledge through guided imagination strategies.
8. Stimulate evaluative reflections.
9. Explain and integrate the concept of progressive development.

In this way, executive coaching offers more to the workplace than just a transfer-of-training tool (Olivero, Bane, & Kopelman, 1997), or a way to facilitate constructive-developmental thinking (Laske, 1999), or shift leadership style (Kampa-Kokesch, 2002). Executive coaching may best be considered as a pre-eminent learning framework for inspiring leaders to apply wisdom decision-making processes and tolerance of complexity through chaordic systems to achieve a common good.

References

- Argyris, C. (1993). *Knowledge for action: A guide to overcoming barriers to organizational change*. San Francisco: Jossey-Bass.
- Arlin, P. (1990). Wisdom: The art of problem finding. In R.J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 230–243). New York: Cambridge University Press.
- Ayers, S. (1997). The application of chaos theory to psychology. *Theory and Psychology*, 7(3), 373–398.

- Ball, M.W. (2000). "Jack be nimble, jack be quick ... : How managers experience and adapt to complexity and uncertainty". *Dissertation Abstracts International Section B: The Sciences & Engineering*, 60(9-B), 4941.
- Baltes, P.B., Glück, J., & Kunzmann, U. (2002). Wisdom: Its structure and function in regulating successful life span development. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of positive psychology* (pp. 327–347). New York: Oxford University Press.
- Baltes, P.B., & Kunzmann, U. (2003). Wisdom. *The Psychologist*, 16(3), 131–133.
- Baradell, J.G., & Klein, K. (1993). Relationship of life stress and body consciousness to hypervigilant decision making. *Journal of Personality and Social Psychology*, 64, 267–273.
- Barnett, R. (1999). Learning to work and working to learn. In D. Boud & J. Garrick (Eds.), *Understanding learning at work* (pp. 29–44). London: Routledge.
- Benson, H. (1996). *Timeless healing*. Sydney, Australia: Hodder & Stoughton.
- Boyatzis, R.E. (2001). How and why individuals are able to develop emotional intelligence. In C. Cherniss & D. Goleman (Eds.), *The emotionally intelligent workplace* (pp. 234–253). San Francisco: Jossey-Bass.
- Bütz, M.R. (1997). *Chaos and complexity: Implications for psychological theory and practice*. Washington, DC: Taylor & Francis.
- Carver, C.S., & Scheier, M.E. (1998). *On the self-regulation of behaviour*. Cambridge, UK: Cambridge University Press.
- Chandler, M.J., & Holliday, S. (1990). Wisdom in a postapocalyptic age. In R.J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 121–141). Cambridge, UK: Cambridge University Press.
- Coveney, P., & Highfield, R. (1991). *The arrow of time*. Hammersmith, UK: Flamingo.
- Fitzgerald, L.A., & van Eijnatten, F.M. (2002a). Reflections: Chaos in organizational change. *Journal of Organizational Change Management*, 15(2), 402–411.
- Fitzgerald, L.A., & van Eijnatten, F.M. (2002b). Chaos speak: A glossary of chaordic terms and phrases. *Journal of Organizational Change Management*, 15(2), 412–423.
- Garvey, B., & Alred, G. (2001). Mentoring and the tolerance of complexity. *Futures*, 33, 519–530.
- Gilgen, A.R. (2000). Common prescriptions for psychology derived from dialectical materialism and chaos theory. *Psychological Reports*, 86, 487–492.
- Gleick, J. (1987). *Chaos: The amazing science of the unpredictable*. London: Minerva.
- Godin, S. (2002). Survival is not enough. *Fast Company*, 54, 90–94.
- Greene, J., & Grant, A.M. (2003). *Solution-focused coaching: Managing people in a complex world*. Edinburgh Gate, UK: Pearson Education.
- Guastello, S.J. (1987). A butterfly catastrophe model of motivation in organizations: Academic performance. *Journal of Applied Psychology*, 72(1), 165–182.
- Guastello, S.J. (1998). Creative problem solving groups at the edge of chaos. *Journal of Creative Behavior*, 32(1), 38–57.
- Guastello, S.J., & Guastello, D.D. (1998). Origins of coordination and team effectiveness: A perspective from game theory and nonlinear dynamics. *Journal of Applied Psychology*, 83(3), 423–437.
- Halpern, D.F. (2001). Why wisdom. *Educational Psychologist*, 36(4), 253–256.
- Hammond, S.A., & Royal, C. (1998). *Lessons from the field: Applying appreciative inquiry*. Plano, TX: Practical Press.
- Higgins, E.T. (2000). Making a good decision: Value from fit. *American Psychologist*, November, 1217–1230.
- Johnston, J.H., Driskell, J.E., & Salas, E. (1997). Vigilant and hypervigilant decision making. *Journal of Applied Psychology*, 82(4), 614–622.

- Kampa-Kokesch, S. (2002). Executive coaching as an individually tailored consultation intervention: Does it increase leadership? *Dissertation Abstracts International Section B: The Sciences and Engineering*, 62(7-B), 3408.
- Keinan, G. (1987). Decision making under stress: Scanning of alternatives under controllable and uncontrollable threats. *Journal of Personality and Social Psychology*, 52, 639–644.
- Kilburg, R.R. (2000). *Executive coaching: Developing managerial wisdom in a world of chaos*. Washington, DC: American Psychological Association.
- Kilburg, R.R. (2001). Facilitating intervention adherence in executive coaching: A model and methods. *Consulting Psychology Journal: Practice and Research*, 53(4), 251–267.
- Kitchener, K.S., & Brenner, H.G. (1990). Wisdom and reflective judgment: Knowing in the face of uncertainty. In R.J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 212–229). Cambridge, UK: Cambridge University Press.
- Kuhn, D., & Udell, W. (2001). The path to wisdom. *Educational Psychologist*, 36(4), 261–264.
- Laske, O.E. (1999). Transformative effects of coaching on executives' professional agenda. *Dissertation Abstracts International Section B: The Sciences and Engineering*, 60(5-B), 2386.
- Levy, D.L. (1994). Chaos theory and strategy: Theory, application, and managerial implications. *Strategic management journal*, 15, 167–178.
- Levy, D.L. (2000). Applications and limitations of complexity theory in organization theory and strategy. In J. Rabin, G.J. Miller, & W.B. Hildreth (Eds.), *Handbook of strategic management* (2nd ed., pp. 67–87). New York: Marcel Decker.
- Lewis, M.D., & Junyk, N. (1997). The self-organization of psychological defenses. In F. Masterpasqua & P.A. Perna (Eds.), *The psychological meaning of chaos: Translating theory into practice* (pp. 41–73). Washington, DC: American Psychological Association.
- Lissack, M.R., & Gunz, H.P. (1999). *Managing complexity in organizations: A view in many directions*. Westport, CT: Quorum Books.
- Loye, D., & Eisler, R. (1987). Chaos and transformation: Implications of nonequilibrium theory for social science and society. *Behavioral Science*, 32, 53–65.
- Mac Cormac, E., & Stamenov, M.I. (Eds.). (1996). *Fractals of brain, fractals of mind: In search of a symmetry bond*. Amsterdam: John Benjamins.
- Martin, G. (2002). Coaching: Management's new magic? *CCH Human Resources Management Bulletin*, 20, 1–12.
- Olivero, G., Bane, K.D., & Kopelman, R.E. (1997). Executive coaching as a transfer of training tool: Effects on productivity in a public agency. *Public Personnel Management*, 26(4), 461–469.
- Pascual-Leone, J. (2000). Mental attention, consciousness, and the progressive emergence of wisdom. *Journal of Adult Development*, 7(4), 241–254.
- Peltier, B. (2001). *The psychology of executive coaching: Theory and applications*. New York: Brunner-Routledge.
- Perkins, D.N. (2001). Wisdom in the wild. *Educational Psychologist*, 36(4), 265–268.
- Perna, P.A., & Masterpasqua, F. (1997). The history, meaning, and implications of chaos and complexity. In F. Masterpasqua & P.A. Perna (Eds.), *The psychological meaning of chaos: Translating theory into practice* (pp. 1–19). Washington, DC: American Psychological Association.
- Pestana, M.S. (2001). Complexity theory, quantum mechanics and radically free self determination. *The Journal of Mind and Behavior*, 27(4), 365–388.
- Peterson, D.B. (1996). Executive coaching at work: The art of one-to-one change. *Consulting Psychology Journal*, 48(2), 78–86.

- Scharff, D.E., & Procci, W.R. (2002). Chaos theory as a new paradigm in psychoanalysis: A contribution to the discussion of models. *International Journal of Psychoanalysis*, 83, 487–490.
- Schon, D.A. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Seligman, M.E.P. (2003). Positive psychology: Fundamental assumptions. *The Psychologist*, 16(3), 126–127.
- Stacey, R.D. (1995). The science of complexity: An alternative perspective for strategic change processes. *Strategic Management Journal*, 16, 477–495.
- Stacey, R.D. (1996). *Complexity and creativity in organizations*. San Francisco: Berrett-Koehler.
- Staudinger, U.M., & Baltes, P.B. (1996). Interactive minds: A facilitative setting for wisdom-related performance? *Journal of Personality and Social Psychology*, 71, 746–762.
- Staudinger, U.M., Lopez, D.F., & Baltes, P.B. (1997). The psychometric location of wisdom-related performance: Intelligence, personality, and more? *Personality and Social Psychology Bulletin*, 23(1), 1200–1215.
- Sternberg, R.J. (1990). Understanding wisdom. In R.J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 3–12). Cambridge, UK: Cambridge University Press.
- Sternberg, R.J. (1998). A balance theory of wisdom. *Review of General Psychology*, 2(4), 347–365.
- Sternberg, R.J. (2001a). Why schools should teach for wisdom: The balance theory of wisdom in educational settings. *Educational Psychologist*, 36(4), 227–245.
- Sternberg, R.J. (2001b). How wise is it to teach for wisdom? A reply to five critiques. *Educational Psychologist*, 36(4), 269–272.
- The Concise Oxford Dictionary* (9th ed.). (1995). New York: Oxford University Press.
- Tschacher, W., & Scheier, C. (1997). Complex psychological systems: Synergetics and chaos. In F. Masterpasqua & P.A. Perna (Eds.), *The psychological meaning of chaos: Translating theory into practice* (pp. 273–298). Washington, DC: American Psychological Association.
- Veenhoven, R. (2003). Happiness. *The Psychologist*, 16(3), 128–129.
- Waldrop, M.M. (1992). *Complexity: The emerging science at the edge of order and chaos*. London: Viking Books.
- Warren, K., Franklin, C., & Streeter, C.L. (1998). New directions in systems theory: Chaos and complexity. *Social Work*, 43(4), 357–372.
- Webster, J.D. (2003). An exploratory analysis of a self-assessed wisdom scale. *Journal of Adult Development*, 10(1), 13–22.
- Wheatley, M.J. (1992). *Leadership and the new science: Learning about organizations from an orderly universe*. San Francisco: Berrett-Koehler.
- Wheatley, M.J., & Kellner-Rogers, M. (1999). *A simpler way*. San Francisco: Berrett-Koehler.
- Wood, R. (2000). *Managing complexity*. London: The Economist Books.
- Zeus, P., & Skiffington, S. (2000). *The complete guide to coaching at work*. Roseville, NSW: McGraw-Hill Australia.



96 Evidence-Based Coaching

