CHAOS IN PRACTICE: TECHNIQUES FOR CAREER COUNSELLORS

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The chaos theory of careers emphasises continual change, the centrality and importance of chance events, the potential of minor events to have disproportionately large impacts on subsequent events, and the capacity for dramatic phase shifts in career behaviour. This approach challenges traditional approaches to career counselling, assumptions about the importance of chance events, and the idea that counselling should aim to reduce career options to a rational and manageable set of logical choices. This new approach demands new techniques and tools to assist the counsellor and client. Four different techniques and exercises are outlined that are designed to assist a counsellor in applying chaos theory in practice. The techniques cover: reality testing; limits to rational decision making; using the media to illustrate non-linearity and chance events; and using forensic techniques to establish historic and contemporary patterns of influence on career behaviour.

One of the perpetual complaints of both writers and practitioners in the career development field is the gap between theory, research and counselling practice. To their credit, a range of recent contributions to the career development literature have sought variously to address this complaint (e.g., Peterson & Gonzalez, 2000; Sharf, 2002). Typically, the approach has been to append a case study to a theoretical adumbration to illustrate some of the conceptual tenets of each formulation. While this can be helpful in understanding the practical implications of a theory, it does not actually provide the practitioner with specific techniques that could be used in the career counselling context. On the other hand, some compendia of techniques are available (e.g., Patton & McMahon, 2003), but these are not tied to any particular theoretical formulation.

One of the challenges for any new theory of career development such as the chaos theory of careers (Pryor & Bright, 2003a, 2003b) is to integrate theory, research and counselling practice. If this challenge is not met, theory will lack applicability; research will lack relevance, and counselling practice will lack conceptual explanation. Some attempts have already been initiated. These include research on contextual influence and career choice (Bright & Pryor, in press), and the role of chance in career decision making (Bright, Pryor & Hapham, in press). Some of this

research work has been the basis for the development of the circles of influence technique (Bright & Pryor, 2003).

However, in order for a new conceptualisation of careers to find acceptance among practitioners in the career development field, demonstrating the practical relevance and application to counselling of such an approach is virtually mandatory. This paper seeks to present further techniques for use in career counselling derived explicitly from dimensions of the chaos theory of careers. In order to do so, the chaos theory of careers will be briefly outlined, along with some of the immediate counselling implications. Specific techniques will then be presented to illustrate ways in which these implications could be used in the counselling context. Finally, some further directions in which the chaos theory of careers is being taken (which may be of interest and relevance to career counsellors) will be briefly outlined.

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The Chaos Theory of Careers

Contrary to what may be implied by the title, chaos theory is fundamentally about order rather than disorder (Gleick, 1987). However, order is understood as an emergent property from the functioning of complex dynamical systems. As a consequence, the chaos perspective is not reductionist, rather reality is seen as needing to be investigated and understood in its complex, multivariate interrelatedness (Kauffman, 1995). It can be understood as an open systems approach, emphasising interaction and interdependence of influences in continually changing and often non-linear ways. The non-linear focus of chaos theory contradicts the accepted wisdom of Isaac Newton that for every action there is an equal and opposite reaction. Chaos theorists point to the frequently disproportional link between cause and effect and some theorists question whether cause and effect are actually separable in explanatory terms (Stacey, 2001).

Complex dynamical systems often respond to change by adaptation, in order to preserve the stability of the system. An immune system responding to infection is an obvious example. If effective in defeating the infection, the system preserves its biological homeostasis. The emergent order is the continuing health of the person. However, complex dynamical systems tend to be inherently capable of change, which may result in transformation of the system—what chaos theorists usually call a 'phase shift'. A phase shift is a change that causes a reconfiguration of the system—often, but not necessarily, after a period of uncertainty and perturbation. For example, the experience of trauma may change a psychologically stable individual into someone exhibiting extreme post-traumatic stress disorder symptoms. As a consequence, the functioning pattern of the person has been maladaptively transformed. More process-oriented complexity theorists view phase shifts as inherent in human experience and dispute the possibility of being able to extricate the observer from the system (Streatfield, 2001).

Perhaps the most salient aspect of chaotic systems is that at least some elements within such systems behave in unpredictable and often apparently random ways. This is what is called the 'strange attractor' phenomenon. The notion of an attractor is common to general systems and complex process theories, and can be thought of as the end state to which a dynamical system moves. The strange attractor is a description of the functioning of a system's elements in self—similar but never exactly repeating ways. As a consequence, a general pattern emerges as the overall functioning of the system, while specific elements of the system are neither in principle nor in practice predictable. The weather is a classic example in which the overall pattern is clearly discernible as climate and seasons, but the level of predictive accuracy for specific periods is rarely accurate beyond about four to seven days.

Chaos theory has had comparatively little application in career development up to the present. In the context of learning in organisation, Wieland-Burston (1992) drew on the chaos notion of phase shift in discussing ongoing change in human experience. Sanders (1998) utilised complexity and non-linearity as bases for strategic thinking in organisational change. Brack, Brack and Zucker (1995) utilised chaos theory to indicate its potential in

counselling for conceptualising clients' problems in new ways. Similarly Duffy (2000) drew attention to the potential of chaos theory for the career counselling of career plateaued workers. In particular, she highlighted the usefulness of chaotic concepts such as unpredictability, flexibility of responding, tolerance for ambiguity and chaotic disequilibrium leading to new forms of self-organising. Perhaps the most thorough outline of the potential of chaos theory to career counselling is to be found in Drodge (2002). Drodge saw the emphasis on change and uncertainty found in chaos theory to be especially applicable to the 'new career', which writers such as Arnold and Jackson (1997) believe includes more job changes and greater uncertainty than traditional notions of career. Drodge concluded,

> The complexity science metaphor invites career counselors to embrace uncertainty and chaos as a precursor to order and change. In practical terms, complexity science provides a broad strategy that involves working with clients to recognize patterns evolving in the work career domain and patterns in their own personal and interpersonal functioning as a first step towards a bifurcation (change) point (p. 60).

In terms of counselling, chaos theory places emphasis not only on the commonalities across individuals as revealed in various diagnoses, but also on the uniqueness of each person—because chaos theory highlights the potential of small differences to have major effects iteratively through complex systems. Chaos theory also incorporates the theoretical validity of notions of self-creation, personal reinvention and cognitive restructuring of situations in terms of possibility and resourcefulness. For chaos counsellors the future is not some distant horizon, it is in fact the individual's next thought, belief or action. The reality of the unplanned and serendipitous in human experience is also pointed to by chaos theory, thereby exposing on one hand the limitations of human foresight and control, while on the other hand pointing to strategies for utilising chance and randomness productively as they are encountered in human experience.

'Chaos theory highlights the potential of small differences to have major effects iteratively through complex systems'

Some Applications of the Chaos Theory of Careers

In the remainder of this paper, four techniques are presented to demonstrate the application of the chaos theory of careers to counselling practice, and to provide career counsellors with materials and ideas for introducing some chaos theory dimensions into their work with clients and students.

1 Reality is Chaotic—A Reality Testing Exercise

Reality testing has long been a goal of career counselling. An individual seeks assistance and often brings with him mistaken conceptions about himself, others, particular occupations, the world of work as a whole, how to make decisions and so on. One of the goals of the counsellor is to have the person examine these ideas, as well as the beliefs and assumptions that may underlie them, in order to be able to explicitly test their reality and logic. The chaos theory of careers presents a range of perspectives and strategies which may contradict traditional notions of simply matching the characteristics of the person with those of an existing occupation. The 'reality checking exercise' is a way of seeking to achieve for counselling clients a truer, more relevant and ultimately more accurate view of the realities of 21st century career decision making.

Reality checking exercise

This exercise is presented as a group technique, but it can be easily adapted to an individual counselling situation if required. Instead of the plenary work outlined below, the counsellor can simply ask the person to explain some or all of his responses, leading into a discussion about underlying assumptions and beliefs.

Aims:

1 To have participants consider the nature of the decision making context in which they make decisions by reflecting on their own experience.
2 To expose some of the shortcomings of the assumptions constituting the basis for traditional matching approaches to decision making.
3 To suggest that the principles of chaos theory are already in common practice but often just not recognised.

Materials:
Reality checking checklist—handouts and an overhead transparency of the checklist (see Appendix I); an overhead projector; and an overhead marker.

Procedure:
Hand out the checklist. Allow clients time to complete the checklist by putting a Y or N after the question mark for each question. With a show of hands, ask participants to indicate who put Y or N for each question. Record the answers on the overhead checklist. Focus on questions with high levels of agreement (the most Y responses). Ask participants how agreement for a particular question might undermine the traditional matching model, or what agreement tells you about the reality of our decision making. 'Yes' responses indicate agreement with propositions derived from, or consistent with, a chaos theory approach to career decision making.

Now focus on questions where there is some disagreement. Invite a discussion from both sides to enable both groups to understand a different perspective and consider whether they can be reconciled. Invite those who gave Y or N responses to give an example to illustrate how they see this aspect of decision making reality.

Invite participants to add up their Ys. From these answers ask participants what the overall responses tell us about the current realities of career decision making. Invite a show of hands for the Y scores. Suggest that if their score exceeds 12 (i.e. two-thirds), then they are probably chaos theorists without knowing it.

The ideas, principles and issues from the responses that a counsellor is likely to draw out include:

1 our limited knowledge and control of the future;
2 the non-linear nature of some changes;
3 the influence of unplanned events;
4 the inevitable limitations of our current information;
5 the strengths and weaknesses of goal setting;
6 the value of intuition in decision making;
7 our capacity to distort reality; and
8 the necessity of risk taking.

2 Complexity Limits Our Knowledge in Decision Making

The immense complexity and changeability of dynamical systems make it virtually impossible to have anything like complete or even sufficient knowledge for totally rational career decision making. For example, labour market information at a very detailed level for a specific occupation in a specific geographical location for a particular period of time and then projected into the future is notoriously unreliable.

However, some people facing significant career decisions think they need to have a comprehensive and accurate information base on which to choose. Of course this is desirable and it is useful to collect as much information as reasonably possible about options. However, it is unrealistic to believe that totally accurate and comprehensive information is ever going to be available (Isaacson & Brown, 2000).

Coming to terms with this uncertainty is the goal of this second exercise (see Appendix II). The exercise is a group activity for decision makers. However, this technique can be used in an individual career counselling context as well—with the counsellor replacing the other group members and omitting the plenary session. The technique described works best with a client who has some experience of having made significant decisions for himself. Thus, it may not work as well with junior secondary school students.

3 Non-linearity and Chance—Using Media

The emphasis in chaos theory on the interconnectedness of complex dynamical systems gives rise to the notion of non-linear change. Essentially, in a complex world a small change may give rise, as it percolates through complex dynamical systems, to other changes far more dramatic and far reaching than the initial change. Viruses are obvious examples from both the biological and cybernetic worlds, with a small change on one computer able to seriously damage international information technology services.

Krausz (2002) has suggested that popular media such as film could be used to illustrate aspects of career decision making. He reported the beneficial impact from the use of film in career education context. Some films are beginning to make reference to chaos theory: the most obvious example is 'The Butterfly Effect' (Bender et al., 2004), which commences with a quote from chaos theory.

However, the film 'Sliding Doors' (Pollack, Braithwaite, Horberg, & Howitt, 1997) provides an

excellent illustration of the principle of non-linearity of change derived from an apparently insignificant chance event—whether a train door stays open long enough for someone to get on the train or not. The principal character, Helen, has just been fired from her advertising job as the film begins. She decides to take the train home. As she comes down the stairs, her train has pulled in at the platform. As she goes towards the open door, it slides closed excluding her. Making her way home, Helen is assaulted waiting for a taxi and then has to have hospital treatment before arriving home—narrowly missing discovering her partner's other lover. The film replays the opening scene, with Helen just getting in the train before the door closes and having a brief encounter with James who will later become her lover.

From this point of the 'sliding doors' opening or not, the film bifurcates into two different scenarios. In one, Helen loses her boyfriend and another relationship develops which eventually results in her death. In the other, she continues in 'the fool's paradise' of the deceived lover, while her boyfriend comically tries to keep both relationships going with disastrous results for himself and eventual discovery in a staged confrontation by the other woman.

The film demonstrates how an incidental event involving just a few seconds has the capacity to transform a whole life. The scenario of Helen's life continues to diverge as the implications of the non-linear change ripple through the fractal of her experience of living two outworkings of an apparently insignificant incident.

In chaos theory terms (although not recognised at the time), the sliding doors incident becomes a phase shift experience, transforming the pattern of functioning of one system—Helen's life up till then—into a new pattern of her subsequent experience. The non-linearity is exemplified in the continuing development of difference between the two scenarios.

Considering the central premise of the film, a range of potential practical implications could follow from non-linearity of change for career development purposes:

- some small details may have a big impact on your career decision making;
- do not neglect the incidental—it may end up being more important than what appears crucial at the moment;
- initiate small experiments in decision making and see what happens. Examples might include going on a job visit even though you do not think that occupation is of interest to you; subscribe to the industry journal and see what you can learn; go to a trade fair and talk to some of the exhibitors; ask friends and relatives about their work—what they do, how they got there, what they like about it, what they dislike about it, where they think the occupation or industry might go in the future, etc.; and
- get into the mindset of attempting to ferret out small changes in an industry, occupation or society as a whole, and then develop the likely longer term consequences of such changes—since these may become the major changes and opportunities for the future.

4 The Forensic Interview in Chaos Counselling

Kahneman (2000a, 2000b) made the point that most of our life is experienced through reflection on past events. George Miller (1956) claimed we could remember about seven chunks of information at a time (plus or minus two) before we become overloaded. Trying to remember a phone number told to you longer than seven digits is very difficult. Kahneman (2000a, 2000b) argues that because we have these limited capacity memory systems, the most we can experience as immediate or live is about two minutes at a time. After that, information is sent into long-term memory to free up space for more incoming information. This means most of life is experienced and filtered by memory. This is all very well, but our memories are notoriously unreliable and subject to influences when reconstructing events. Put simply, the phrasing of questions used to elicit memories combines with the recalled memory to produce a new composite memory. The brain mistakes this new composite for the original memory and thus the individual can feel adamant of some detail during an event, which may never have happened!

In a famous study, Loftus and Palmer (1974) showed people a video of two cars in a crash. They then asked people to recall a detail from the video using variations on the same question. The question was: 'How fast were the cars going when they ... each other'. The variations included: 'hit', 'smashed

into', 'collided with', 'bumped', and 'contacted'. The speed estimates elicited ranged from 64 kph for 'smashed into', down to 51 kph for 'contacted'. The more the word implied force, the greater the speed estimates. People's memories of the event were systematically influenced by the nature of the question to produce a new constructed memory.

Law enforcement agencies have long known about such biases and as a result psychologists in this area have developed cognitive interviews (CI) (Memon, 1999). To improve reliability of people's recollections, three elements are included in the CI: context reinstatement, report everything and change perspective.

Context Reinstatement

From our earlier research (Bright & Pryor, in press) we found four major contextual influences on students' career decision making, which can be used as a basis for reinstating the decision context. For each career decision of interest, use the following script and questions to reinstate the context of media, teachers/advisers, family and friends, and unplanned events.

'Close your eyes and take your time. Think about the setting when you decided to become an accountant. How old were you? Where were you living? Who were you living with? What were they doing at the time? What friends were you seeing then? What were you reading? What were you watching on TV? If you were at school or university, what teachers did you admire and spend time with? What was your favourite subject at the time? How were you feeling (happy, anxious, confused etc.)? How was your health then? Were you smoking/drinking alcohol/using recreational drugs? What were your hobbies then? Tell me about your parents/husband/wife/children/friend/partner etc.—how often did you see them? How did they feel about your career? Did you have any unplanned meetings with people that influenced your decision? Was there anything unexpected that happened that influenced your decision?'

Report Everything

For each career decision of interest, encourage the client to be expansive and to recall as much detail as possible—specifically including trivial, unusual or whimsical elements as they happened.

Change Perspective

For each career decision of interest, encourage the client to look at the career decision from another perspective. For example: What would your mother have been thinking about this decision? Imagine you were her, what would she have seen you doing and what would she have thought?

Application to Chaos Career Counselling

The CI is a tool that could have been purpose designed for chaos theory career counselling. In the chaos model, it is acknowledged that individuals will socially construct their worldviews and this extends to their memories. However, in our formulation (Pryor & Bright, 2003a, 2003b) meaning is not solely constructed. Realism is also acknowledged. For instance, reality testing is an important aspect of the chaos theory of careers. The CI is an attempt to minimise the impact of post-hoc social construction of memories.

The chaos model also acknowledges the effect of contextual influences on career decisions. Bright and Pryor (in press) have highlighted the influence of four contextual factors on students' careers (media, teachers, family and friends, and chance events). The CI aims to garner an accurate recollection of events by reinstating the context of the original events. Tulving and Thompson (1973) originally developed the 'encoding specificity hypothesis'—that retrieval cues to memory are successful as a function of the degree to which they overlap with the encoded information. So mentally re-creating as much detail as possible about some previous event will increase the chances of the accurate recall of that event. In career counselling terms, recalling the circumstances under which a previous career decision was made will serve to elucidate the dominant influences that were operating. This technique will reduce the tendency towards post-hoc rationalisation of events or overlooking subtle but important influences. For instance, a series of poor career choices may have been due to the client experiencing financial exigencies at the time. Looking back, these issues might not be as salient for the individual, and career decisions that were actually financially driven are now recalled as being driven by interests or some other post-hoc and rational view.

In career counselling terms, it is important for the client to recall details without filtering to allow the

counsellor the opportunity to put together a pattern of influences. A client who 'censors' out a recollection that his mother had been hassling him for the previous year to get a 'respectable' job, but instead chooses to focus on his maths ability and how it matched accountancy may be withholding a critical clue as to his true career patterns of influence.

Finally, the CI recognises non-linearity in the sense of multiple perspectives. The interview encourages the client to consider the events and influences from the perspective of significant others. This can be valuable in elucidating additional valuable insights.

Future Directions

As chaos theorists we are necessarily wary about making future predictions, especially long-term ones. However, we have already begun to look at how the chaos theory of careers might translate into career assessment and career counselling (Pryor, 2003).

Career Assessment

Chaos theory confronts traditional psychometric assessment with a series of challenges including:

- Is it possible to predict the unpredictable?
- Is testing too segmental to encapsulate the richness and complexity of human experience?
- If testing tends to classify people into groups or classes, how can the uniqueness and idiosyncrasies of the person be investigated?

Some possible solutions consistent with chaotic perspectives include using mind maps, fuzzy logic and genograms to accommodate complexity; using open-ended exercises with card sorts to investigate meaning making; using interactive card sorts with 'what if ...' conditions to explore risk, chance and opportunity awareness; and using inventories completed as a person was (at some specified time in the past), is now and expects to be (at some specified time in the future) to explore change.

Career Counselling

Chaos theory eschews simplistic models of explanation and counselling for career decision making and development. Using mechanistic matching approaches and rationalistic career decision models alone fails to do justice to a reality composed of complex dynamical systems.

Thus, the chaos theory of careers has a range of counselling implications including: non-linear change suggests small experiments as an action strategy (Sanders, 1998); emergent qualities imply an emphasis on meaning making and life purpose; uncertainty implies the need for goal setting that is 'focused' and 'flexible' (Gelatt, 1991); complexity demands that decision makers recognise the reality of risk and the inevitability of their limitations of knowledge and control; and constructivism implies the reality of different perspectives and an individual's capacity for reinvention of himself, his past and his future.

Beyond these applications of chaos theory lie further articulations—among other things, into rehabilitation, the legal system, labour market policy, educational and training initiatives, financial planning, social change and political economics. It is a fundamental mistake to think that chaos theory is merely an understanding of reality that is relevant to our time. Complexity has always been a part of human existence. As we increase our knowledge of our world, and less certainly of ourselves, what becomes evident is not what the hubris of 19th century science concluded—that we were becoming masters of the universe—but rather how limited and small we are in the vastness of reality. This is not a cause for despair, just humility.

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APPENDIX 1

REALITY CHECKING CHECKLIST (constructed by Dr Robert Pryor)

Answer 'yes' or 'no' to the following questions:

1 Have you ever made a decision that later had some outcomes you had never thought of at the time of deciding?
2 Has the fear of taking a risk ever prevented you from doing something important in your life?
3 Have you ever wanted something, obtained it and found out you preferred something else?
4 Have you ever had the experience of seeing a situation one way and finding out someone else sees it in a totally different way?
5 Have you ever experienced an unplanned event that had a big impact on your life?
6 When making a decision do you sometimes just choose an option without worrying about whether it is the very best choice or not?
7 Have you ever found it an advantage not to know something?
8 Have you ever had a crisis or conversion experience that changed your life in some significant way?
9 Have you ever had the experience of being in either the right or wrong place at the right or wrong time?
10 When taking action do you ever just follow your instincts or your intuition?
11 Have you ever relied on information when making a decision, only to discover later that it was incorrect?
12 Have you ever distorted the truth either to yourself or to others?
13 Have you ever set a clear goal or a precise objective and discovered a better one along the way to the original goal?
14 Have any major decisions in your life been made on a basis that was not totally rational?
15 Have you ever had the experience of being told something personal about yourself of which you were completely unaware?
16 Do you ever act before you think as a way to investigate a situation or to make a decision?
17 Have you ever experienced a 'self-fulfilling prophecy'?
18 Have you ever made a small mistake that resulted in a big problem later on?
19 Have you ever found wishful thinking to be an advantage?
20 Have things occurred in your life that you never thought would have been possible?

APPENDIX 2

THE LIMITATIONS OF KNOWLEDGE IN DECISION MAKING EXERCISE

Principle:

Chaos theory emphasises the complexity of the range of influences on career development and that our knowledge is always incomplete at the point of decision making.

Learning message:

We always make decisions with incomplete knowledge; we learn as we experience the implications of such decisions and adapt as well as possible as we go along.

Activity:

1. Ask participants to recall two or three important decisions they have made in the past. (They do not have to be work related, but they can be.) Some examples could include a change of residence, an exotic holiday destination, a choice of partner, a change of job/employer/career and so on.
2. Ask participants to write down these decisions, and for each decision write their answers to these questions:
   a) What did you know about the alternatives you had at the time of your decision?
   b) How did you find out more information before choosing? (What strategies, if any, did you use?)
   c) What did you find out after you had made the decision, which you did not know before?
   d) What changes did this new knowledge cause you to make? (Allow 5–10 mins)
3. Invite participants to pair up to share and discuss their answers to one decision each. (Allow 5–10 mins)
4. Plenary session: invite participants to provide general answers to the four questions. Focus on the initial incompleteness of their knowledge and on 'the surprises' that they discovered after choosing.

Wrap up:

- Most important decisions we make in our lives are made with incomplete and occasionally inaccurate knowledge;
- Inevitably this means that our decision making cannot be rigorously logical or totally rational;
- As a consequence, virtually all our important decisions have a degree of uncertainty which we tend to disregard or suppress;
- We often think we know more and are more in control of our decision making than we actually are;
- To continue this illusion, we often rationalise the benefits of a decision after we have made it to make our decision seem more reasonable and logical. Psychologists call this the process of 'cognitive dissonance';
- We learn from our decisions as we live with them. This learning may be helpful or destructive;
- As a consequence of this learning, we adopt strategies of adaptation. We may change ourselves, we may influence others, and we may change our circumstances, situation or environment.
- The direction of such adaptation is likely to be in order to contribute to the initial overall goal from the beginning of the decision-making process. This is what some chaos theorists refer to as a fractal pattern of the strange attractor;
- However, the experience of decision making, learning, adaptation and change may have been radical enough to cause us to redefine or even jettison one or more of our goals. Chaos theorists usually designate such radical changes as phase shifts; and
- These experiences and processes then become the basis on which the next decision or series of decisions will be made.

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THEORY AND PRACTICE

This section is designed as a brief professional review of the article. It provides relevant study questions and answers for readers to test their knowledge of the article.

How can some of the fundamental concepts of emerging perspectives on career development, such as chaos theory, be translated into career counselling practice?

Answer: For the chaos theory of careers to find acceptance among practitioners it must be demonstrated that it has practical applications in career counselling. A checklist is presented in this article which challenges people to reconsider the assumptions they make about their experience, rationality and decision making to highlight chaos theory ideas such as happenstance, intuition, phase and reality distortion. A second included technique requests people to examine a decision-making experience to help them realise the limits of their knowledge and control when making decisions, and how we constantly have to live with uncertainty. The third technique uses an illustration from a popular film to identify the non-linearity of our life decisions and its inevitability in our experience. The fourth technique adapts an interviewing technique used in the forensic context for career counselling. The technique emphasises the importance of context and completeness as ways to uncover complexity of influence, to minimise rationalisation of recall, to pay attention to details and to uncover indicators of patterns of influences.

What are some of the career practice challenges that the chaos theory of careers raises for the future?

Answer: The role of chance, the limits of predictability, the emphasis on individuality and the complexity of human experience suggest that more emphasis in career practice will need to be placed on qualitative as well as quantitative assessment.

Emergence, uncertainty, non-linearity and risk imply that a chaos theory approach to counselling will focus attention on meaning and life purpose, on flexibility and revision of goal setting, on recognition of the risk and fallibility of all—including the best decision making and the constructivist value of multiple perspectives—as a way to open up new possibilities to be explored in career development. The chaos theory of careers also points to the value of immediate behaviour—for each of us, the future is our next action.