CHAOTIC CAREER ASSESSMENT

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Integrating Quantitative and Qualitative Assessment

INTRODUCTION

One of the enduring issues in the history of assessment in psychology is that of the idiographic-nomothetic debate articulated by Allport (1937). The issue became symptomatic of differences in approach by psychologists to the study of human behaviour and in particular personality. An idiographic approach places emphasis on the individual qua individual and focuses attention on subjectivity, individuality, uniqueness, idiosyncrasy, personhood, specificity and situations as influences on thinking and behaviour. The nomothetic approach conversely draws attention to individuals as members of identifiable groups and understands individuality in terms of comparisons of individuals across groups. Such groups are conceptualised in terms of generalisable dimensions such as reasoning abilities, vocational interests and personality traits. In assessment terms, an idiographic approach, most typically identified with qualitative assessment techniques, seeks to understand individuals by entering into their world without preconceived notions of how that world is structured or understood. Assessment in this sense is more like exploration and discovery than measurement per se (Peavy, 1996).

More recently the emphasis in career development on narrative approaches to counselling can be understood in idiographic terms as counsellors assist individuals to make meaning and identify life themes and purpose (Savickas, 2005). On the other hand, nomothetic assessment from its beginnings in psychometrics has sought to identify and measure characteristics generalisable across individuals and to provide quantitative results by which individuals can be compared to one another. The result has been, on the one hand, major developments in the application of statistical techniques to the study of psychology and, on the other, impressive taxonomies of humans’ psychological characteristics such as the hierarchical model of cognitive abilities (Vernon, 1950), the Big Five personality traits (Digman, 1990), Holland’s hexagon of vocational interests (Holland, 1997) and the Triarchic Model of Intelligence (Sternberg, 1985).

In contemporary career development it is still probably true to say that preferences for qualitative or quantitative assessment continue to reflect differences
in how career practitioners seek to understand human behaviour and career development in particular. Most commonly this is identified in terms of the dichotomy between modernist (quantitative) perspectives and postmodernist (qualitative) perspectives (Isaacson & Brown, 2000). From time to time calls are made to integrate such approaches (Jacques & Kauppi, 1983; Pryor & Bright, 2004; Sampson, 2009). The current authors (Bright & Pryor, 2007; Pryor & Bright, 2011) have suggested that the Chaos Theory of Careers (CTC) may provide the theoretical framework within which such integration can be achieved. The Chaos Theory of Careers views reality in terms of complex dynamical systems characterised by the interplay between structure and development, stability and change, predictability and chance. Individuals are nested patterns of complex dynamical systems and are themselves nested in other systems such as family, geography, study, employment, the labour market and culture (for further examples refer to Patton & McMahon, 2014). As individuals interact with the world at large, patterns of interaction emerge which chaos theory has identified as attractors (Pryor & Bright, 2007). These attractors are characteristic ways in which individuals think, feel and behave. The results of the operation of such attractors are fractal patterns which are traces or records of the effects of attractors. It is these fractal patterns that psychologists and career counsellors have typically sought to identify through both qualitative and quantitative career assessment. However, in the past career assessment has underestimated both the complexity and changeability of what it has attempted by various means (quantitative and qualitative) to assess (Krumboltz, 1998; Leong, 1996).

ASSESSING FRACTALS

The CTC draws attention not only to complexity and change, but also to the systemic nature of reality. Systems theory generally focuses on understanding reality in terms of interconnections and holistic thinking. Vondracek, Schulenberg and Lerner (1986) wrote about the focus of a systems perspective that

“…influences between the individual and the context are reciprocal. This reciprocity of influence is perhaps, the single most important characteristic of the systemic perspective, because it allows for the consideration of how ongoing interaction of individuals and their contexts results in change or stability.” (p. 157).

Pryor and Bright (2011) suggested that trying to identify fractals for career assessment purposes can best be achieved, insofar as this is ever possible since complexity always limits human knowledge and control, by using a multiple perspective approach which in effect combines idiographic (qualitative) and nomothetic (quantitative) techniques. In doing so the CTC also fulfils a call made originally by the Ancient Greeks and revived by Prigogine (1977) of the need for science to integrate structure and change which translates into the career
development domain as being (stability) and becoming (change), since these are the defining characteristics of complex dynamical systems.

*The Twin Perspective Approach to Assessing Complexity*

Complexity defeats us all. Chaos theory draws attention to the limits of human knowledge and control. This in turn demands that we endeavour to find a variety of ways to catch glimpses of the complexity of real life systems and their functioning. This is what career assessment is trying to do. Thus Bright and Pryor (2007) suggested a twin perspective approach to career assessment focusing on both stability (convergent) and change (emergent). A convergent perspective focuses on knowledge that is common to people and circumstances. It is predictable and replicable. Convergent assessment techniques focus on probable outcomes and use analysis, inter-individual comparison, choice by elimination and logic to derive specific options (Pryor, Amundson & Bright, 2009). Conversely, an emergent perspective focuses on knowledge that is unique to individuals and their situations. Attention is directed to intra-individual differences. It is not predictable in advance but discernible as it develops and becomes evident (Morowitz, 2002). Emergent assessment techniques seek to develop imagination, intuition, creativity and openness. The goal is to generate and explore possibilities and to stimulate a basis for change to discover meaning and purpose. Table 1 presents a summary of the two perspectives as they relate specifically to career assessment.

*Table 1. Characteristics of Convergent and Emergent Assessment Perspectives*

<table>
<thead>
<tr>
<th>Convergent Assessment Perspective</th>
<th>Emergent Assessment Perspective</th>
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</thead>
<tbody>
<tr>
<td>Focuses on order and stability</td>
<td>Focuses on change and chance</td>
</tr>
<tr>
<td>Probable outcomes – occupational options</td>
<td>Possible outcomes – creating careers</td>
</tr>
<tr>
<td>Qualities shared (e.g. interests, abilities, occupational information)</td>
<td>Individual qualities (e.g. themes, meaning, purpose)</td>
</tr>
<tr>
<td>Comparison with groups - matching</td>
<td>Comparison within the person - discovering</td>
</tr>
<tr>
<td>Quantitative results – metrics</td>
<td>Qualitative results – patterns, narratives</td>
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<tr>
<td>External/ Objective Criteria</td>
<td>Internal/Subjective Criteria</td>
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<tr>
<td>Data relating to the world</td>
<td>Data relating to the self</td>
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The danger in practical career assessment terms of presenting these two perspectives separately is that it could suggest that they should be used separately. Some such as Savickas (2011) have made similar suggestions to this in relation to quantitative and qualitative techniques by making a distinction between ‘vocational guidance’ (using quantitative measures) and ‘career counselling’ (using qualitative techniques). For a CTC career assessment approach such a distinction is unnecessary and unwarranted. The challenges of assessment within complex
dynamical systems require that both convergent and emergent perspectives be used conjointly with one complementing rather than competing with the other. The following is a description of one way in which this can occur.

ASSESSING VOCATIONAL INTERESTS – CONVERGENT AND EMERGENT PERSPECTIVES

The domain of assessing vocational interests has almost exclusively been the domain of quantitative assessment for most of the last century beginning with the epoch making work of E. K. Strong and subsequently with the influential work of John L. Holland. In an attempt to provide a more flexible approach to vocational interest assessment Pryor (1995) constructed the Congruence Interest Sort by developing a pool of work and leisure activity items designed to assess the eight dimension of Roe’s (1956) interest classification taxonomy. These items were then administered to a sample of school leavers and adults after which, using standard psychometric item analysis procedures, 64 items with the best item-scale homogeneity and contribution to scale reliability were chosen – eight items homogeneously loading on each of the eight interest dimensions (Pryor, 2007).

Each activity item (such as “Spending time at the beach”) is presented on a separate card and the person is asked to place the card in a pile under the headings for five other cards according to how much they like or dislike each of these activities. The five sort cards are labelled: most unattractive (I hate doing this activity); moderately unattractive (I dislike doing this activity); neither attractive nor unattractive (I have no strong feelings about this activity); moderately attractive (I like doing this activity); and extremely attractive (I love doing this activity). The person is simply asked to sort the cards according to how much they would like or dislike doing this activity if they had the opportunity to do it. The sorted cards are then scored from 1 to 5 (from extremely dislike = 1 to extremely like = 5) for each of the eight interest scales. The three highest scale scores are then used as a basis for comparison with the dominant interests of those working in various occupations using an occupations listing (Pryor, 2010). Comparisons are made on the basis of using each two-dimension code derived from the three highest interest scores resulting in six two-dimension codes with which to derive occupation options from the occupations listing. In this way the person is encouraged to search on a wider basis than just using a single three-dimension code. As a result of this process the person derives a list of occupations that they would like to explore further using various sources of occupational information including inter alia, online databases, government statistics, websites of major employers, industry associations and employee groups, and contacting those working in various occupations through informal networks or human resources departments of employers.
As can be seen from this brief description, the Congruence Interest Sort, if used in this way, assesses individuals in a quantitative way to yield convergent information about what is typically liked among commonly preferred activities (derived from psychometric analysis) and compared with various criterion groups of workers’ interests across a wide variety of occupations (Pryor, 2007). To establish the stability of the assessment scales used, the CIS interest scales were themselves subject to alpha reliability analysis yielded scores across the eight scales from .69 to .83. The obtained results for each person are then used in a predictive manner to deduce logically that if the person’s interests are similar to those who work in various occupations then these are occupations which the person too may find interesting.

However, the Congruence Interest Sort can be used in more qualitative ways to derive more emergent information. Six different techniques are outlined below to illustrate the qualitative uses of the CIS cards as approaches to assessment complementary to a quantitative approach.

**Themes Exercise**

After the client has sorted the CIS cards in the usual manner into five piles of varying attractiveness, the career counsellor asks the client to read through each pile of sorted cards looking for themes and similarities within each pile. The counsellor makes a record of any suggestions and also the degree of confidence or enthusiasm clients have for their identified themes. These themes can then form the basis for further discussion. For instance, clients may identify that most of the cards they rated as extremely attractive are activities that pose few challenges to them, whereas many of those in the unattractive pile appear to be beyond their self-appraised level of competence. A discussion about self-limitation, experimentation, self-efficacy and reality checking might ensue. This exercise allows the client to organise the cards according to their own constructs, which may provide more personally relevant information about the specific interests or barriers of a client.

**Personal Constructs Exercise**

The Personal Constructs Exercise is derived from Personal Construct Theory (Kelly, 1955) with the aim of understanding an individual’s personally relevant dimensions of perception of themselves and their world. Once all the cards have been sorted into the five piles of attractiveness, two cards from the ‘extremely unattractive’ and one from the ‘extremely attractive’ pile are compared. Similarities between the two cards from the same pack are noted as are differences between those cards and the card sorted as extremely attractive. The client is asked to label each bipolar dimension they identify. The client’s responses are recorded and the exercise repeated until the client is unable to come up with any new
dimensions (or the exercise can be prematurely halted to manage time, the quantities of dimensions to be discussed or to maintain rapport). A discussion of the bipolar dimensions can then draw out the client’s sense-making perspectives and ideas. The exercise adds depth to the interest categories derived by nomothetic methods by providing a more detailed and specific understanding of the personal relevance, thought dynamics and constraints driving the client to make the choices they do.

The Contingency Exercise

The contingency exercise invites a client to reconsider their decision-making in an artificially induced changing environment. Pryor, Amundson and Bright (2009) point out that career counselling is about change and encouraging appropriate, helpful and positive change for clients. Nomothetic assessment tends not to address the experience of change; however idiothetic assessment is well-placed to capture a client’s reactions to change. After the cards have been sorted into the usual five piles, the career counsellor can introduce some perturbation into the system by asking the client to consider hypothetical scenarios with “what-if” questions. For instance “what if you acquired a significant lower back injury and restriction – how might that affect the sorting of your cards” or conversely “imagine you were pain free”. The career counsellor can also ask the client to imagine their own alternative scenarios – both likely and unplanned. This exercise can inform discussions about flexibility, strategy, self-efficacy, persistence, luck, optimism, strategy, creativity and reinvention.

Wildest Dreams Exercise

The wildest dreams exercise invites the client to consider the cards they have just sorted into the five standard piles, and to explore how their sorts might alter if they were able to pursue their wildest occupational dreams. Changes to the sort are noted by the career counsellor and can form the basis of further discussions about potential barriers – real or imagined, strategy, self-limited thinking, optimism and fear of both failure and success.

Significant Others Exercise

The significant others exercise explores how other people who play an important role in the client’s life perceive the client. Often significant others can be influential in a person’s career decision-making (e.g., parents, teachers and friends: Bright, Pryor, Wilkenfeld & Earl, 2005; Patton & McMahon, 2014). The career counsellor invites the client to step into the shoes of their nominated significant other and to sort the cards into the standard five piles as though they
were that person sorting them according to what they think the client is interested in. The exercise forces the client to adopt a different perspective which in itself can reveal discrepancies or implicit interests that have not been fully expressed. It can address Taleb’s (2006) third knowledge quadrant – what you don’t know you know. It can also reveal possible problems associated with mismatched expectations or sources of undue influence and limitation.

*The Guided Story Exercise*

The guided story exercise invites the client to tell a story about their career incorporating all of the cards from a particular pile. As with many of these exercises, starting with the extremely unattractive pile can be most fruitful as people are often more definite about what they do not like rather than what they like (Tversky, 1972). Themes that emerge from the story as well as the context into which each card is placed can reveal a lot about a client’s decision making and interests.

**CONCLUSION**

Assessment based on the Chaos Theory of Careers (Pryor & Bright, 2011) aims to achieve a complex understanding of a person’s fractal pattern. Individuals do not exist in isolation, they are embedded within and interact with other dynamical complex systems – other people’s attractors, and the emergent attractors that develop from the complex interactions of groups of people in and across organisations, communities and countries. Fractal patterns are infinitely complex, consequently any form of assessment will be incomplete and almost certainly inadequate in isolation. Thus chaos approaches to assessment avoid what Savickas (2005) called the “epistemic war” between modernist and postmodernist, quantitative and qualitative approaches. Both nomothetic (convergent) and idiographic (emergent) approaches to assessment are required and are complementary. We agree with Snowden (2011) who, in considering the use of narrative, argues that “the goal is to utilize the rich context of narrative to inform sensemaking, and also to create objective data in which cognitive bias is minimized and we can place some reliance on the conclusions drawn” (p. 228).

We have described how the Congruence Interest Sort can be used in both quantitative and qualitative ways, but more importantly in complementary ways that provide a richer picture of the individuals’ vocational interests. Further we sought to introduce qualitative techniques that coherently can be located within a chaos-based approach to assessment and to demonstrate more broadly how chaos-based assessment uses both qualitative and quantitative methods to inform individuals’ career development.
REFERENCES


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