

# The Edge of Chaos: Applying the Chaos Theory of Careers

**How can the numerous contextual factors that influence individuals' career decision-making processes, which include change, chance and complexity, be understood and practically addressed in career guidance support? Dr. Anouk J. Albien presents how the Chaos Theory of Careers (CTC) serves as a theoretical and practical contribution to the career guidance and counselling field.**

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The changing nature of career development and the world-of-work calls into question traditional theories of employment and career development trajectories. Individuals no longer follow concise linear patterns, and the notion of career decision-making was found to be far less systematic and logical than models suggested. In order to address the new challenges of complexity, change, and chance in employment patterns, the Chaos Theory of Careers (CTC) was introduced by Jim Bright and Robert G. L. Pryor.

The basic notion of the CTC is that numerous contextual factors influence an individual's career decision-making processes. Career decisions reflect diverse patterns based on where a person has lived, their spiritual orientation, cultural background, family membership configurations and gender relationships within the family. The major influence of chance events on careers is linked to personal relationships, work relationships, social or work experiences, health or injury, change of residence, and unintended exposure to types of work or other activities.

## Explanation of Chaos theory of Careers

According to Bright and Pryor, the importance attached to complexity in CTC provides a new way to understand chance, unplanned events and the challenge of uncertainty in a technologically advancing, digitally connected, information flooded world and globalized marketed world of work. This complexity is associated with significant and perpetual demands for an individual's insight, adaptability, risk taking and resilience for his/her career decision-making. The CTC identifies that systems have varying levels of susceptibility to change using notions such as the *butterfly effect*, *the edge of chaos* (EOC) and *phase shifts*, which are particularly relevant in addressing twenty-first century world-of-work. Edward Lorenz described the *butterfly effect* based on the observation that small changes in complex systems can result in disproportionate (non-linear) changes in other parts of the system

## Understanding CTC concepts

The CTC enables a broader conceptualisation of the interactive patterns of influences on individual's careers, which includes complexity, attractors, fractals, emergent properties and the interconnectedness of influences. Individuals, and the contexts in which they live, are conceptualized in terms of complex dynamical systems.

Although, the individual is a system by him/ herself, the individual is also embedded in various other systems (i.e., culture, occupations, work organizations, labor market, geographic location, education and the global economy), as explained by Wendy Patton and Mary McMahon. Therefore, in CTC terms a "career" is an emergent property of individuals' interactions with the environmental influences in which they typically function. This captures the increasingly extended concept of career, which includes individuals' work, and non-work lives, since the two cannot be effectively separated from one another. In chaos terms, as explained by Pryor and Bright, the functioning and trajectory of a complex dynamical system can be understood as its characteristic attractor and can be identified and recorded by its fractal (i.e., a map, representation or trace of the functioning of an attractor).

## Attractors

When applied to career development, **attractors** can be understood as the feedback mechanisms within a system, the boundaries, the end state direction of the system, and the reality vision of the person, according to Pryor and Bright. There are four types:

**1. Point Attractor:** describes the motion of a system to a specific end state or a level of static equilibrium. An example of a specific end state would be the finish line in a race. Instead, a level of static equilibrium is hot water reaching room temperature. In career development processes, a point attractor describes an individual focused on a specific goal such as passing a course, entering a profession, gaining a promotion or retiring from paid employment. *Psychological application:* A point attractor is a description of driven thinking and behavior: ideological or goal dominated thinking and/or obsessional or fearful behavior. Vocational examples of such systems' functioning include professional athletes preparing for major sporting events, workaholic executives, "control-hungry" managers who cannot delegate, the belief in the 'career for life', inherited careers and single product companies.

**2. Pendulum Attractor:** is the system's swinging motion between two poles like a clock pendulum. In career terms, this describes someone trying to reconcile or balance two sets of competing priorities (i.e., work- non-work balance). Furthermore, it can be described as polarised behavior or thinking processes of wavering back and forth between two poles in decision making (i.e., only black or white). *Psychological application:* In vocational behaviour, this attractor is likely to express itself in role conflict, career indecision, rigid and extreme ideas, occupational stress, risk-taking sensitivity, lack of commitment, and divided loyalties or priorities.

**3. Torus Attractor:** is the repetitive motion of a system, which is complex in movement, but has a set path or phase. Most machines are designed to behave in this way in order create products through fixed and usually automated controls.

*Psychological application:* This attractor is a description of routine, habitual and predictable thinking and behavior. When applied to individuals' careers, this attractor characterises those who seek to control themselves and their environment through repetitive behavior (i.e., personal discipline, habits, addictions and dependence on others). Such individuals know that the world is complicated, so they seek to keep control by organising and categorising people and things. They develop systems for doing things based on consistency, routine, classification, hierarchy and organization. Vocational examples include the technician who wants to do the assembly job he or she has always done; the file clerk who holds on until retirement; or the insecure worker who finds any change in his or her work circumstances threatening.

**4. Strange Attractor:** is the descriptor of systemic motion according to CTC, which is a repetitive motion of the system as complex, self-similar but never exactly the same. Therefore, these systems remain susceptible to non-linear change that can transform the structure and functioning of the system as a whole (i.e., often called a *phase shift*). The weather has been archetypally presented by Lorenz, as the best example of this attractor. Due to the multitude complex combination of interacting factors, the precise prediction of the weather beyond a week is unreliable. However, over time patterns of order (i.e., seasons and climate) are discernible. Such systems function at the *edge of chaos* (EOC) at which the system is sufficiently structured to be stable and at the same time have the potential to change and transform in response to both internal and external influences. *Psychological application:* Increasingly this is most salient attractor for meeting the twenty-first century employment demands as advocated by Jelena Zikic and Douglas T. Hall. In vocational terms, individuals are confronted with both the threats and opportunities of an uncertain world in which the influences of stability and change perpetually interact. This is where creativity, adaptability and resilience interact with risk, failure and success in individuals' work and non-work lives. In vocational terms, the EOC is the conjunction of rational/logical planning and action with creativity/imagination in decision making, to confront the threats and opportunities inherent in uncertainty.

### Closed versus Open systems thinking

The four attractor types outlined above can be classified into either open or closed systems categories according to Pryor and Bright (2004). All significant career development counselling problems can be understood in terms of individuals trying to impose closed systems thinking on an open systems reality. Point, pendulum and torus attractors are all examples of closed systems thinking, which seeks to simplify reality in an attempt to achieve order and control. Although, goal setting and routine are used to control, master and manage unwanted change, these strategies may be successful in the short term or in the inclusion of a limited range of activities, yet the potential for unplanned change remains a component of reality not accounted for. According to the CTC the only adequate conception of reality, career development and life transition, is the **Strange Attractor**, based on an irreducibly complex open system or series of systems, which defy definition, delimitation and control. When an individual recognises and accepts strange attractor or open systems thinking (please see examples below), then that individual lives "on the edge of chaos".

Closed thinking responses	Closed system thinking responses to change	Open thinking responses
The unexpected should/will not happen	<b>A sense of disbelief and disorientation</b> Based on a belief that this could not happen and should not have happened “what about all my plans for the future?” ( <i>point attractor thinking</i> ).	The unexpected can/sometimes will happen
“I am invincible”	<b>A sense of disbelief and disorientation</b> Based on a belief that this could not happen and should not have happened “what about all my plans for the future?” ( <i>point attractor thinking</i> ).	“I am vulnerable, sometimes”
High risk taking without backup strategy Disregard of contingency	<b>Helplessness and feelings of inadequacy</b> The focus of the person’s thinking is on limitations and barriers. Often there is a loss of hope and a belief that nothing now will work because the attractor under which he/she was functioning previously has now been shown to be inadequate. Thus individuals’ closed systems thinking can find them swinging from an overconfidence in their skills and control before the event to this sense of helplessness and inadequacy ( <i>pendulum attractor thinking</i> ).	Risk taking with a backup strategy Contingency planning
“Life should be fair”	<b>A response of frustration, anger and a sense of injustice</b> That these things have occurred and that they are extremely undeserved ( <i>dichotomous thinking derived from a pendulum attractor perspective</i> ).	“Life has no guarantees”
A strong sense of personal control	<b>Feelings of depression and a sense of being overwhelmed</b> “all this is too much for me” ( <i>phase shift without adaptation or a contingency plan</i> ).	A recognition of human limitation
Confidence in order and the past Linearity of change (i.e., opportunity) Exceptions are errors—disregard	<b>A loss of confidence as individuals’ vulnerability is exposed</b> Even though all reasonable steps were taken to avoid disaster or accident- injuries still occurred and now such individuals become cynical or defensive about initiating further action. As a result their willingness to take risk may also decline due to fear of further	Acknowledge the reality of phase shifts Non-linearity of change (i.e., accident) Exceptions can be determinative and significant

	vulnerability and hurt ( <i>torus attractor thinking</i> ).	
Limited inputs to respond to change	<b>A “victim mentality” develops</b> What they thought would continue changes radically and they have no constructive psychological repertoire with which to respond and so they resort to self-pity ( <i>emergent thinking “I am the victim”</i> ).	Creativity in response to change

## CTC Applications

The Chaos Theory of Careers has informed theory development and provided promising empirical research findings that have been based on using a CTC informed career intervention with diverse population groups. More information about these empirical research findings can be found in the reference list. The role of chance in career development had been neglected until theories, such as the CTC, emerged to indicate that decision-making could not be as informed, rational or controlled as previously suggested. In a series of studies, it was empirically demonstrated that when individuals have their attention drawn to the possibility of unplanned events impacting their careers, between two-thirds to four-fifths indicated the importance of chance on their work lives and decision making. More information about these studies can be found in the reference list.

## Applying CTC in career guidance and counselling techniques

In addition, the Chaos Theory of Careers has generated a range of original counseling strategies and techniques as well as adapted existing career guidance and counselling techniques to assist individuals to gain a chaos perspective for career development. Some examples of these techniques recommended by Bright and Pryor are:

- A chaos-based career counseling and decision-making strategy (2015)
- Strategic techniques for contemporary career education (2012)
- The CTC concept of “fractals” for psychological assessment techniques in career development (2016)
- Archetypal narratives to overcome CTC identified career barriers and new career possibilities (2008)
- Mind mapping (2015)
- Collages (2011)
- Films, forensic interviews and checklists (2005)
- Qualitative assessment developed (2015)
- Parables (2006)
- Examples of how to use visual arts (2011)
- The use of card sorts (2007)
- Goal setting activities (2013)
- The use of game theory metaphors (2009)

## Conclusion

The Chaos theory of Careers allows clients and counsellors to identify career development barriers and opportunities, as well as apply appropriate intervention strategies to assist clients to meet these challenges in terms of overcoming obstacles or exploiting opportunities. The clients and counsellors can collaboratively experience living and working “on the edge of chaos”. Chaos is essentially the interplay of stability and change, pattern and variation, constancy and surprise that we live and work in. Furthermore, this means accepting our current limitations with humility but at the same time not letting imitations prevent a constructive and creative engagement in work and non-work environments.

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