A COMPARISON OF THE PROCHASKA CYCLE OF CHANGE AND THE HOLLING ADAPTIVE CYCLE, EXPLORING THEIR ABILITY TO COMPLEMENT EACH OTHER AND POSSIBLE APPLICATIONS TO WORK WITH OFFENDERS

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ABSTRACT

The Prochaska Cycle of Change was developed in the field of cognitive behaviour and is used in areas such as nursing and criminal justice to effect behavioural changes in people. This proposes a cycle with the phases of pre-contemplation, contemplation, determination, action and maintenance. The Holling Adaptive Cycle was developed from research into ecological systems and is also used in such areas as financial and organisational systems. This model proposes a cycle of exploitation, conservation, release and reorganisation.

This paper attempts to map the two cycles on top of each other and explore how this mapping might enhance our understanding of both cycles. It further explores some possible implications for work with offenders. Resilience is a central concept of the adaptive cycle and in work with offenders. Just as building resilience helps natural and organisational system to be adaptive, so too building resilience will assist offenders to gain appropriate governance over themselves and avoid falling back into further offending.

Keywords: Adaptive cycle, resilience, offender, Cycle of change, desistance

INTRODUCTION

Systems science looks at differing types of systems in order to extract underlying principles common to all systems. It then investigates how that knowledge might be generalised back for use within specific systems. This paper explores two models that have been developed in different areas of knowledge that would appear to be able to be mapped onto each other. We seek ways the two models may enhance each other and bring new perspectives to the different areas of knowledge. Since both models can be described as transtheoretical in their own right, it is likely that a synthesis of the two would broaden the ranges of applicability even more.

THE CYCLES

Human beings have noticed many different cycles in their lives ever since the dawn of time. Complex systems under the pull of various attractors will often fall into cyclic

behaviour. The cycles are not exact repetitions, since the forces in a complex system are not static. These cycles can only be maintained if the energy flows and attractors within the system remain dynamically stable.

THE PROCHASKA CYCLE OF CHANGE

James Prochaska (Prochaska, DiClemente, Norcross, 1992) developed the Cycle of Change within the field of Cognitive Behaviour Theory. If we are able to indentify which part of the cycle a person is operating from, we can use this knowledge to develop an appropriate treatment strategy aimed at bringing about behavioural change. The Cycle of Change has proven to be effective particularly in areas such as criminal justice, where non-offending behaviour is desired, and in medical areas, where compliance with medication and a healthy lifestyle are sought. The cycle has been used for smoking cessation, weight control, mammography screening, and much more. Because the author's background is in the criminal justice area, examples used in this paper will tend to relate to offender behaviour.

The Cycle of Change starts with the stage of pre-contemplation. At this point, the individual feels no need to make changes either because there is no awareness of any problem, or there is denial about the need for change. For example, an alcoholic may not recognise that their drinking is causing problems, or they may be aware, but the thought of addressing the issue is too threatening to be faced consciously. No behavioural change will occur at this point.

Following pre-contemplation is the contemplation phase. Here the person becomes consciously aware of the need for change and thus feels some level of discomfort. This might be caused by external events such a health issue or a loss of a freedom after offending. The change may also be internal, where the person is impelled by their own reflections on their situation. There is a weighing up of the pros and cons of making a change during this stage. The person is considering making changes and there is a guideline that this needs to be considered within the next six months to be considered as contemplative. Eventually, the discomfort grows and the person must either regress to the pre-contemplative stage by using cognitive distortions to override the discomfort, or move into the next phase.

During the determination phase (also called preparation phase) the individual chooses to take action to change their life in response to the discomfort felt in the previous stage. This is generally considered that there needs to be an intention to begin action within a month. At this bifurcation point the attractor for change must be stronger than the attractor to revert to the pre-contemplation stage. Of course, deciding to make a change is not actually making a change.

The individual actually follows through with their intention to make changes during the action stage. The action must be significant and have a real chance of effecting change. This is generally seen to last around six months.

The maintenance phase follows where the person must maintain the new behaviours and stabilise the changes made. The new behaviours must be embedded into an ongoing pattern. There is still a risk of regressing and relapsing into past behaviours. Challenges to the new behaviour continually appear and must be dealt with on an ongoing basis. The maintenance phase may be short as the person finds themselves unable to meet the challenge, or may last for an extended time as the person remains motivated to sustain the changes made.

At this point in the cycle, therefore, there are again two possible outcomes. First, the person may relapse; unable to pull away from the attraction of the old habit patterns. The person reverts to the behaviours they were trying to avoid. This then brings the person back to the pre-contemplative phase that began the cycle. Alternatively, the individual may embed the new behaviour to the point that there is no longer a risk of relapsing to previous behaviours. The person permanently leaves the cycle at this point and enters the termination phase, where they are no longer tempted to return to old ways.

THE HOLLING ADAPTIVE CYCLE

The Four Phases

C.S. Holling (Gunderson and Holling, 2002) developed the Adaptive Cycle by researching the functioning of ecological systems. The cycle has also been used in other contexts, notably in financial and organisational systems. Ecological systems studied were seen to move through a four phase cycle.

The cycle begins at the exploitation phase. Here the system is fresh and new, often coming from a previous release and reorganisation phase. The system is full of potential, flexible and is open to change. As time progresses the system becomes more structured and connected. Positive feedback loops generate a strong growth phase during which the system becomes increasingly productive.

In a forest that has experienced a fire, seeds of all types fall and begin to grow. There is a high degree of opportunity for them to take root and grow. They grow quickly with plenty of space and few established competitors. In a financial system a period of new growth appears after a recession. With many companies having gone bankrupt and resources available, it is an ideal time to start a new business.

Eventually, a limiting factor will emerge to slow the growth rate. This might be due to such factors as population density increasing, or market saturation. The system enters the conservation phase. The system is still very productive, but must learn to “live within its means” as diminishing marginal returns (Tainter, 2007) become evident. The system becomes increasingly structured utilising “tried and true” strategies rather than exploring innovative approaches. The high level of connectedness means a disturbance may rapidly move through the whole system. The system therefore loses flexibility as it grows. Some

systems cope better in this phase than others. At some point the limiting factors mean that the system is unable to sustain itself and the lack of flexibility becomes a hindrance that can no longer be absorbed.

A system in the conservation phase will often overcompensate in an attempt to regain control. The old strategies are not working as they have in the past. Increasing effort and resources are required just to maintain productivity. Uncertainty increases, so it is easy for the agents in the system to over-react, which in itself send the system even more out of control. The response to the overcompensation is often yet another overcompensation. It may be possible for the system to return to a dynamic stability, but often the overcompensations increase until the system is no longer able to sustain itself. This is similar to vehicle taking a long bend on the road. The faster the vehicle travels, the harder it is to keep the vehicle in its correct place on the road. Eventually, the driver is likely to overcompensate and send the vehicle to one side of the road or the other. In the attempt to regain control of the vehicle, the driver overcompensates again and sends the vehicle hurtling to the other side of the road. The vehicle thus snakes across the road until the driver brings the vehicle back under control or the vehicle careens off the road. If the driver is somehow impaired, as for example, if the driver were intoxicated by alcohol, the reaction times will increase. This has the effect of slowing the feedback cycle and increasing the snaking of the vehicle, so there is an even greater risk of the vehicle coming off the road.

The exploitation and conservation phase are sometimes described as the front loop, forming the first half of the cycle. The release and reorganisation phase to be discussed next form the back loop.

The system moves into the release phase. It has gone beyond the point where it can continue as it has before. Energy is released as some, at least, of the old structures unravel. Sometimes this release phase is gentle, especially if there has been a willingness to look at release more openly during the conservation phase. The release phase has also been labelled as “creative destruction” from its links to Schumpeter’s (Schumpeter, 1975) work in economics. Previously bound up resources become available for use in a new way.

Alternatively, the release phase can manifest as a catastrophic crisis causing much destruction. The longer the conservation phase, the more likely it is that the release phase is dramatic. The release phase generally occurs quickly and is triggered by a small “butterfly effect” (Gleick, 1987), that at other points in the cycle would not have had such a devastating effect. In a forest, a fire may precipitate a shift into the release phase. At the end of the conservation phase, the forest is highly developed with much fuel to keep the fire burning. If there is a prolonged time of high temperatures, the situation becomes critical and a small spark is all that is needed to set off the phase change. Diamond (Diamond,2005) and Tainter (Tainter, 2007) cite many examples of societal collapse that demonstrate the release phase.

When the release phase has occurred, whether through fire, financial collapse or a sudden drop in sales, the system moves to the re-organisation phase. Seeds are released into the forest and new business opportunities emerge as other businesses close down. New staff is taken on and innovation is more likely to be encouraged. The re-organisation continues as the agents reposition themselves within the system to start the exploitation phase of a new cycle.

It is always possible that a whole new 'quantum leap' occurs that takes the whole system to a new level of functioning. Sustained higher rainfall, for example, may dramatically increase the growth potential to establish a new dynamic equilibrium at a higher level, or a new technology may open the market to previously unpredicted market opportunities.

Poverty Trap and Rigidity Trap

The Adaptive Cycle notes a poverty trap that exists in a system that has lost too much energy during the release phase to move on (Gunderson and Holling, 2002). It is unable to shift from the reorganisation phase to the exploitation phase and remains in "limbo" in the poverty trap. In an ecological system, this may be seen where pollution has degraded the environment to the point that it just cannot sustain growth and it remains in a prolonged state of desertification. For an offender, it may mean being so entrapped within a criminal environment of drugs, gangs and violence, that no path forward can be envisioned. The person is trapped living at a survival level, lurching from crisis to crisis.

At the opposite point in the cycle is the rigidity trap, where a system has become so highly structured and efficient that it has become rigid and lost the flexibility to cope with situations in new and imaginative ways. If, however, the system has large store of excess energy, or has otherwise manipulated the situation, it may avoid the collapse and remain "stuck" in the rigidity trap.

This is clearly seen in companies that have a monopoly over their market. While there may be more deserving competitors in the market, they are able to remain by blocking out those competitors. Having a large source of illegal funds or the ability to coerce law enforcers might allow a criminal to distort their living environment, where they would have otherwise have been caught.

Nested systems

In their book, Panarchy, Gunderson and Holling (Gunderson and Holling, 2002) propose that systems exhibiting adaptive cycles do not stand alone. Similar to many other complex adaptive systems, they form nested systems. They will feed into slower and larger cycles and will be fed by quicker and smaller cycles. For a forest the larger cycles will be such things as the longer natural cycles of the regional ecosystem and even longer global biogeochemical processes. The smaller cycles will be evident in the short life cycles of insects and the microbes in the soil. For an offender larger cycles might be economic cycles, cycles in gang life and shorter cycles might be the day to day opportunities that arise. These small cycles feeding into increasingly larger cycles shows a fractal-like structure.

If a person reaches the termination phase on the Cycle of Change, they will move on to a higher level cycle as previously discussed. Through the action of emergence a system can self organise to a higher and more complex level of functioning. In terms of the Adaptive Cycle a higher level cycle may establish itself, which leaves behind behaviours that lead to offending.

COMMON POINTS BETWEEN THE TWO CYCLES

At a superficial glance these models could be misconstrued as mere linear progressions from one stage to the next, however, both models recognise that system dynamics are far more complex. In both models the person, or whatever constitutes the agents within the system, may regress or jump forward by missing out a step or more. The one exception is that the Adaptive Cycle is said to not regress from the release phase back to the conservation phase, since the energy lost in the release phase is usually impossible to regain. Much less energy is required to pull a building down than to rebuild it. This links into catastrophe folds (Thom, 1989), where a system drops, usually very quickly, from a higher level stable state to a lower level stable state. Once the new attractor has been engaged, returning to the previous attractor state is very difficult, if not impossible.

MAPPING THE CYCLES

The two cycles can be mapped onto each other as in Table 1. The mapping is not precise, but is fluid in line with the nature of complex cycles.

Table 1. Mapping the Cycle of Change and the Adaptive Cycle on each other

The Cycle of Change	The Adaptive Cycle
Pre contemplation	Re-organisation
Contemplation	
Determination	
Action	Exploitation
Maintenance	Exploitation - conservation
Relapse	Release
Termination	Quantum leap to new cycle

The cycle of change begins at the pre-contemplative stage, which often follows a relapse into offending. This corresponds to the re-organisation phase of the adaptive cycle, following the release phase. The shift from pre-contemplation to contemplation and then to determination are all a part of the person reorganising their cognitive meaning making

structures in preparation for moving into a more active working stage. They reassess their past actions and the values that have driven their previous actions to formulate new ways to act in the future. The person pulls together the necessary in terms of learning, support and physical resources.

As the person moves through to the action stage on the Cycle of Change, they move into the exploitation phase of the Adaptive Cycle. At first, they typically have few skills, little support and few physical resources with which to embark on these changes. They are likely to have little confidence in their abilities, but as they strengthen themselves and gain more experience living in a new way, their confidence increases as they move into the maintenance phase of the Cycle of Change and the exploitation phase of the Adaptive Cycle. Both models generally describe this stage in the cycle as the longest lasting phase.

The exploitation phase, however, eventually gives way to the conservation phase, where limitations begin to emerge. For somebody with a propensity towards crime, this might mean struggling with increased stress levels (from relationship difficulties, financial problems, etc.), coping with opportunities to reoffend, struggles against addictions, criminal associates, social stigmatisation, etc.

When the limitations set in and the ability of the person to contain their anxiety (Stacey, 1996) is compromised, there is generally a trigger event, such as an alcoholic binge, a physical confrontation, a large debt or an event of peer pressure that moves the person into a relapse. The relapse behaviour is behaviour that has been habitual in the past (although the offending may be more extreme in this cycle), so that, in spite of the inherent destructiveness, there is a degree of familiarity in reverting to these behaviours. This is the release phase, where many of the positive efforts of the exploitation and conservation phase are undone and energy is lost from the system. Particularly if imprisonment is involved, the offending may mean loss of freedom, loss of finances and employment, estrangement from support people, social stigmatisation, loss of self worth, and more. Having reached the low point the person now re-enters the pre-contemplative phase on the Cycle of Change or the re-organisation phase of the Adaptive Cycle.

As noted, it is always possible that instead of the relapse/release phase, the person makes a fundamental change in their lifestyle that enables them to break free of the offending attractors and move to a higher level cycle of functioning. Human nature is such that continuous development is always possible (Beck and Cowan, 1999). The person may shift to a higher level of functioning, where offending behaviours are no longer contemplated. The person will still have challenges and move through the same phases. The challenge might instead be taking off a kilogram or two of weight, starting a successful business, or learning more advanced social skills. Alternatively, the relapse may be a plunge into even more depraved forms of destructive behaviours, such as moving to harder, more addictive drugs or using increased levels of violence.

THE ADAPTIVE CYCLE IN THE CYCLE OF CHANGE

Potential, Connectedness and Resilience

The Adaptive Cycle was discovered by measuring three variables within an ecological area, which are then plotted on a three dimensional graph. First is the potential within the system. We ask, "What is the system capable of achieving?" Obviously, this changes according to the phase of the cycle. The potential during a release phase is low, but it will be high during the exploitation phase. Sometimes the term "productivity" has been used instead of potential.

The second variable is connectedness. As connectedness rises the internal organisation of the system increases. A system will be increasingly connected as it moves from the exploitation phase to the conservation phase, but it will lose connectedness in the release phase and regain it in re-organisation.

The third variable is resilience. This is the ability of a system to withstand a perturbation from the outside and still maintain its function (Walker and Salt, 2006). Resilience is high at the beginning of the exploitation phase, where the system is free to develop in many different ways and growth is high. Resilience is low when the system is in the release phase. The system is falling apart and is poor at withstanding further shocks.

We can see from this that the three variables are interdependent. Increasing connectedness, for example, generally increases potential and resilience, but conversely each variable can become "too strong", creating a limiting effect on the other variables. A system that is too connected, particularly if it is rigidly connected, loses its flexibility to respond in new ways. The system becomes entrenched and loses potential and resilience. A system that is too resilient becomes rigid and inflexible and loses potential. These limiting factors act as attractors of self organisation, so the cycle generates itself without external control as outlined in Table 2 and as presented visually in Figure 1 below.

Table 2. The phases of the adaptive cycle

ADAPTIVE CYCLE	Potential	Connectedness	Resilience
exploitation	Begins with low potential. There are few resources, little organisation. Not much can be achieved, but this is a strong growth phase. Potential sharply rises as the cycle unfolds.	There is little connectedness at the beginning of exploitation and few agents to connect. As strong growth develops, connectedness increases rapidly.	Resilience is high at the beginning because resources have not taken on set uses and the system is very flexible. As growth occurs the system structures itself more and more, losing some resilience.

The Holling Adaptive Cycle and the Prochaska Cycle of Change

conservation	At the beginning growth is high, but as limiting factors kick in, the growth rate, and thus the potential declines. At the end of the phase the system is in a critical position.	Connectedness remains high, but the increase in connectedness slows as it reaches the critical point.	Resilience reduces even further as structures become increasingly rigid. It is very low when the system reaches the critical point
release	Potential drops suddenly as the system collapses and loses energy.	Connectedness decreases as energy is lost. The connections that hold the agents together fall away.	The system becomes disorganised and disconnected. Energy is lost, resilience decreases.
re-organisation	The system regains potential as it recovers from the release phase. Because of leaked energy it cannot increase back to its previous state. Later in the phase potential drops as it puts energy into re-organising for the next cycle.	Connectedness starts low because of the energy lost in the release phase, but increases as new opportunities are grasped in preparation for the exploitation phase.	From low resilience, the system starts to reorganise to find ways to utilise the resources that have become freed up. Resilience is high by the time the exploitation phase begins.

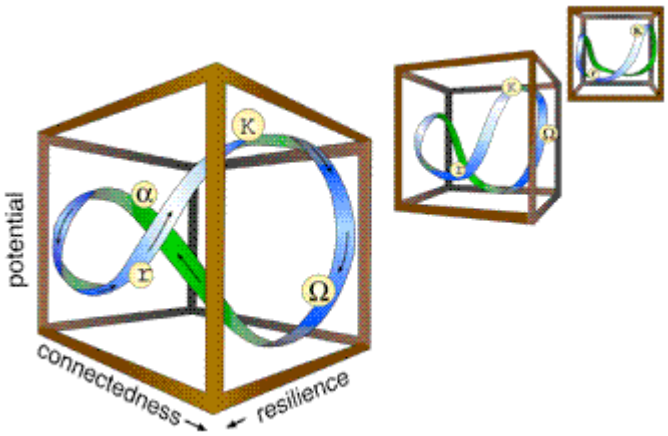

Figure 1. A 3-D graph of the Adaptive cycle. In this diagram r corresponds to the exploitation phase, K to the conservation phase, Ω to the release phase and α to the re-organisation phase. From *Panarchy* by Lance H. Gunderson and C.S. Holling, eds. Copyright © 2002 Island Press. Reproduced by permission of Island Press, Washington, D.C.

The Holling Adaptive Cycle and the Prochaska Cycle of Change

In considering the Adaptive Cycle within the Cycle of Change, there appear to be correspondences that match the three variables of the Adaptive Cycle. Studying these may enrich our understanding of the cycles within a criminal justice setting.

The potential of the system becomes the potential of the person to engage in pros-social, non-offending behaviours. We might label it "Potential for change"

Connectedness becomes connectedness of the person. This would cover internal connectedness and include self esteem and behavioural coherence, and external connectedness, which would include support people and support agencies. We may keep the label "connectedness".

Resilience is a term becoming increasingly used in work with offenders. Reivich and Shatté's book, The Resilience Factor (Reivich and Shatté, 2002) uses Cognitive Behavioural techniques such as challenging belief systems, putting situations in perspectives and calming techniques. Greater control over thought processes, the management of emotion and techniques of distress tolerance build an individual's ability to cope with stressful situations, so the person can avoid feeling overwhelmed and react from old habit patterns. This may mean that situations may arise that previously would have engendered a habitual response of violence, substance abuse or stealing that can be coped with by using techniques such as breathing control, self talk and weighing the pros and cons of a possible action.

A similar term often used in work with offenders is "desistance" (Farral, 2002), which relates to an individual's ability to desist from negative behaviours that they may, nevertheless, feel an urge to undertake. Desistance is similar to resilience, which is defined as the ability to withstand an external perturbation and still maintain function. It takes desistance to not succumb to the external pressures of associates, addiction, opportunity, etc. and still live within the law. Desistance tends to increase with employment, significant life-partnerships, increasing age, a shift in location, the break up of negative peer group, increased motivation, and the feeling of being tired of prison.

Having reassigned the variables as potential for change, connectedness and resilience/desistance, we now move through the Adaptive Cycle to see how it might fit for working with offenders. In the beginning of the exploitation phase, the offender has made the decision to make changes in their life. Their potential is low at that point, because they have not actually put anything in place to effect those changes. They do not know what is really achievable and what will be necessary to ensure success.

Their connectedness is also low at this point. Support systems, both internal and external are untried, and often "bridges have been burned" in the previous cycle. Desistance is strong when the person has just made a commitment to change. They still remember the hardship of the release phase and they are motivated by having made a definite decision for the future.

By the end of the exploitation phase, the person is gaining experience and confidence. Their potential to actualise change rises rapidly and their connectedness to themselves and others becomes strong. Resilience/desistance decreases because the person has selected their path for change, closing off some other alternatives. This tends to increasingly reduce their available options and they lose the flexibility to adapt.

As the person starts to come up against the realities of making significant lifestyle changes, the challenges grow. Some difficulties decrease. For example, over time old associates may grow weary of unsuccessfully trying to pull them back within older offending-based attractors. The person may have even physically moved away from previous detractors and be forming new, pro-social networks. Many changes though, become more difficult over time. Often stress factors build with worsening relationships, increased addictive behaviours, financial stress etc. which leave the person increasingly struggling to desist from offending. These pressures often build until a "butterfly effect" trigger event (Gleick, 1987) leads to re-offending.

In the relapse phase, which includes the act of offending, the ability to desist is drastically reduced. Once a person has broken the threshold of returning to offending behaviours, a positive feedback loop of distorted thinking may rapidly increase the willingness to extend the offending. Such a person might think, "I am going to jail anyway, I might as well go all the way". What might have been a minor infringement may easily turn into a serious crime. The focus of the person typically shrinks to only considering their own needs at the time and thinking is only short term, not considering the consequences of actions. Empathy for others is usually blocked out. Supports are lost and often guilt and remorse for offending actions become evident as the person begins to come to terms with the crime and its consequences. The person is not making good decisions and so their potential for pro-social behaviour is low.

Commonly, the consequences of their offending follow them into the next phase of re-organisation. Damage may have been caused and reparation due. There may be incarceration, or other limitations on freedoms imposed by authorities. Relationships have often been damaged, income sources cut off, support people lost, and much more. There is a difficult, slow journey accepting what has happened, recovering from loses, regaining motivation, rebuilding relationships, and re-envisioning some kind of new future. As this journey of healing proceeds potential for change builds for a while, but is pulled back down as the consequences of the offending must be endured. Connectedness drops for a time, but then begins to increase again once as bonds are re-established and they gain motivation. Resilience builds strongly through this time.

Relapse

There are a number of concepts within the study of complex systems which can shed light on the relapse process, which occurs at release point in the cycle. The Adaptive Cycle highlights how suddenly the shift from maintenance to pre-contemplation may occur and how much may be lost. An understanding of tipping points (Gladwell, 2004) also shows how easy it is for a person to unknowingly cross the threshold into the release phase.

Typically, offenders have not realised the point at which they have shifted from a situation of a build up of tension to one of virtually inevitable offending.

The Edge of Chaos (Waldrop, 1992) describes non-linear systems perched on the edge between order and chaos. If there is too much order, the system becomes rigid and if there is too much chaos, the system collapses. The Edge of Chaos was found to be a point very near the point of chaos, so it is easy for a system to lapse from the productive point at the edge into deep chaos. This links to concepts such as bifurcations (Peek and Frame, 1994), catastrophe folds (Thom, 1989), self organised criticalities (Bak, 1996) and fitness landscapes (Kauffman, 1995).

We have already noted the tendency of a system at the critical point during the conservation phase, to overcompensate like a driver snaking across the road, while trying to get the vehicle back under control. An offender under stress in the conservation phase is also likely to overreact to situations that occur. Being stressed and lacking good judgement a person is likely to respond from raw emotion rather than reasoned judgement. That response makes the situation worse to which there will be yet another overreaction. The person lurches from each self created crisis to another until they either get themselves under control again, or act in some way that sees them arrested.

RISK, NEEDS AND RESPONSIVITY

When developing a strategy to help an offender, three factors have been established by Andrews and Bonta (Andrews and Bonta, 2006) to help determine the best approach to an individual offender. They are risk, needs, and responsivity. Taking cognisance of all three is recognised as necessary to facilitate change.

Risk is about the likelihood of re-offending. Any intervention needs to match the level of risk of offending. High risk offenders need a different approach to a low risk offender. Needs is about the criminal need that must be addressed to affect a change towards non-offending. This might be violence propensity, drug taking, criminal associates, alcohol, etc. Responsivity is about the person's ability to respond to changes and might be improved by focussing on the learning style, motivation, and the abilities and strengths of the offender.

Increasing responsivity will increase the resilience of the person. It may be useful to focus on building responsivity at points on the cycle when resilience is low. Similarly with risk and needs, there will be times such as the conservation phase, where they are likely to be heightened. Focusing on the awareness of the risks that could lead to offending, the needs that might be able to be met, and the responsiveness to the change process may help avert a collapse or lessen its impact, and hasten the re-organisational process.

APPLICATIONS FOR WORK WITH OFFENDERS

The question arises as to how and when one should intervene in the cycle to generate the best outcome. The Cycle of Change tries to move people on through the stages, so a pre-contemplative person is supported to become contemplative, a determination person is encouraged to take action, etc. If a person regresses, they could be encouraged to minimise their regression and continue their effort to make changes. The Cycle of Change generally uses self-reporting questionnaires to help determine where a person is on the cycle, which assists in the formulation of the best intervention (Velicer et al, 1998).

The Adaptive Cycle gives more detail about the shift from the conservation phase to the release phase than the Cycle of Change and this phase shift critically includes the offending period. Tainter (Tainter, 2007) discussed diminishing marginal returns as the underlying force driving the shift into the release phase. In terms of the cycle for an offender, this might translate into needing to invest increasing amounts of effort in order to continue containing the anxiety produced by accepting the responsibility to maintain life changes. Being aware of this tendency may mean that strategies can be adapted to give better support to offenders facing such stresses in their lives.

The Adaptive Cycle emphasises the complex nature of work with offenders for those working in the field. It reinforces the fact that offending occurs because of a wide range of intensely inter-related factors, just as a marine ecology or a forest is sustained by a dynamic balance of a myriad of plants and animals. As with any social interaction there are physical, emotional, intellectual and (many would say) spiritual aspects in constant flux. Beck and Cowan (Beck and Cowan, 1999) talk of the interactions between the bio-psycho-social apparatus of the individual and the milieu in which they live. Maturana and Varela's (Maturana and Varela, 1991) autopoietic systems or Meadows' metaphor of a dancing partners co-adapting moment by moment (Meadows, 2008) may be models that workers in the field of criminal justice might find useful to gain an integrated overview of the influences leading to offending.

Encouraging those working with offenders to see their work as complex and move beyond linear one-focus approaches might enable them to be more effective in their work. It would also mean they would focus on giving offenders a wide a range of 'tools' as possible to cope with challenging areas of their lives. This may help offenders to contain their anxiety (Stacey, 1996) and avoid being overwhelmed by situations, which so often leads to poor decision making.

SUMMARY

The Cycle of Change and the Adaptive Cycle are able to be mapped onto each other, so each model informs the other and offers directions for further investigation. The Adaptive Cycle gives greater clarity to the process of relapse and the Cycle of Change can add detail to the reorganisation phase of the Adaptive cycle. The specific example of working

with offenders has gained clarity through the linking the Cycle of Change with the Adaptive Cycle and given greater detail into the process by which an offender moves into high risk situations and then into actual offending. Further examination of the two cycles may uncover further relationships that may help in the various applications of the two models.

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