The Transtheoretical Model of Behaviour Change and Possible Selves in Criminal Offenders

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
Adult Education and Counselling Psychology
Ontario Institute for Studies in Education
University of Toronto

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Abstract

In order to assist people in making positive changes of problematic behaviour it is necessary to examine how people change and what factors influence the process. Criminal offenders represent a group of individuals who often have difficulty desisting from problematic behaviour and continue to engage in illegal activity. Offenders in provincial correctional institutions were administered questionnaires to determine stage of change and processes utilized as outlined in the Transtheoretical Model (TTM) of change (Prochaska & DiClemente, 1984). Additionally, offenders were asked about their visions of the future using the Possible Selves (PSs) Model (Markus & Nurius, 1986). Taken together, this study looked at the contribution of the PSs Model to our understanding of the TTM, which has been criticized in recent years as lacking therapeutic significance for treatment providers as they guide individuals through the change process. More specifically, this study compares chronic criminals with first time offenders on psychological variables such as readiness for change, vision of possible selves, and hope for the future, as well as on legal variables such as risk for recidivism and institutional behaviour. The results indicate that most offenders acknowledged their behaviour as problematic and some even reported they were actively taking steps to change; however, chronic offenders admitted having less hope than first time offenders. Interestingly, both groups rated similarly on the dimensions of PSs. The outcomes would suggest that research efforts to incorporate other complimentary theories of
change into the TTM, like the PSs model, may be helpful for understanding the process of change. While it seems these models may not be useful for predicting institutional behaviour, the data perhaps demonstrates the complexity of criminal behaviour and speaks to the necessity of further research in this population.
Acknowledgements

First and foremost, I thank my husband, Doug, for his unwavering love, support, and sacrifice. Without him, this project would never have been finished. I also thank my children – Lilah and Reese – for giving me happiness, laughter, and amazement every day. These special gifts gave balance to the academic focus this project required.

I also want to thank my academic supervisor, Dr. Lana Stermac, for her chats, ideas, and edits: every time I went back to my writing, I felt like I was making it better. I appreciate that she always considered my interests and brought me on board for research in my area. Lastly, her stories of being a new psychologist and mom have helped me examine my own experience and focus my goals as I get closer to graduation.

A huge thank you goes to Drs. Diane Farr and Aleksandra Nesovic at their respective correctional institutions. Their assistance got me through red tape and locked doors – without them this project would have been nearly impossible to get up off the ground. Personally, both of them have been wonderful role models for me as strong, intelligent women in the field of correctional psychology.

I am especially fortunate to have met Rachelle Cosme. Her assistance on this project has been invaluable and truly made data analysis bearable. Despite only being an undergraduate student, her insight and suggestions clearly demonstrated an advanced understanding of psychology and research. I wish her well in her future endeavours.

Finally, thank you to my OISE girls, Sarah, Ursula, Iara, and Jane, who provided more kind words, embraces, and moments than a girl could ever ask for. Despite our divergent academic interests, they listened, asked questions, and supported my goals. I am so very lucky to have met these women and look forward to our continued friendship as we embark on our professional careers.
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Chapter 1: Introduction and Literature Review

In order to assist people in making positive changes of problematic behaviour it is necessary to examine how people change and what factors influence the process of change. Identifying barriers to change, for example, can help treatment providers understand why people fail to make changes and meet their goals. This is particularly important for behaviours that people experience greater difficulty changing, such as smoking. Criminal offenders represent another group of individuals who often have difficulty desisting from problematic behaviour and continue to engage in illegal activity despite the risks of serious consequences and negative repercussions. Understanding behaviour change amongst criminal offenders is particularly important due to the tremendous financial, social and moral burden this type of behaviour places on our society. It is hoped that greater knowledge in this area will ultimately lead to development of more effective interventions. A number of models have been proposed to examine behaviour change in this population. The following will outline two models that may provide a sound framework for understanding behaviour change in offenders: the Transtheoretical and Possible Selves Models.

Transtheoretical Model (TTM)

The Transtheoretical Model (TTM) of behaviour change was developed in an attempt to synthesize many different theoretical and clinical aspects of psychotherapy and ultimately characterize how individuals make changes in their lives. Created by James Prochaska and Carlo DiClemente (1982), the TTM is a comprehensive model of change theoretically derived and heavily backed by empirical research. This model quickly became a forerunner in the field of behaviour change. In fact, “[o]ver the past two decades, the Transtheoretical Model (TTM) of
change has become perhaps the most widely used model of behaviour change in the treatment of addictive and/or problem behaviours” (Casey, Day, & Howells, 2005, p. 157). While originally focusing on smoking behaviour, due to its popularity, the stages of change component of this model has been tested with a wide range of behaviours, from individuals attempting to lose weight (Prochaska, Norcross, Fowler, & Follick, 1992) to stroke victims engaging in exercise (Garner & Page, 2005) to cancer screening behaviours (Eiser & Cole, 2002). These and other studies have provided empirical data that suggests that behaviour change in these areas is directly related to one’s readiness for change and can be described using the stages of change. Studies comparing the dimensions of the TTM with treatment related behaviours, such as termination and actual behaviour change, have demonstrated further validity of this model (Tierney & McCabe, 2001). Overall, the research on the TTM has afforded treatment providers information on behaviour change that can help to predict which clients are ready to begin treatment, what their needs are throughout the change process, and who will succeed in treatment (DiClemente, Schlundt, & Gemmell, 2004; Prochaska, DiClemente, et al., 1992).

**General concepts.** The TTM is made up of three separate components relating to change: stages of change, processes of change, and, levels of change. Prochaska and DiClemente later incorporated two additional components, namely, self-efficacy and decisional balance, into the TTM as important for determining transition and behaviour change. Integration of these five components helps treatment providers to accurately assess individuals’ readiness for change, method and progress. Most researchers agree that this model provides a solid foundation for understanding how individuals’ readiness for change affects their behaviour outcomes. Despite the support for this model, the TTM has also been subjected to criticism and its validity has been
questioned. The following outlines the general concepts of this model, as well as the criticisms that have been made.

**Stages of change.** The TTM proposes five main stages of change: precontemplation, contemplation, preparation, action and maintenance (Prochaska & DiClemente, 1984). As described by Prochaska and DiClemente, individuals in the precontemplation stage often deny or minimize they have a problem and are not ready to make changes in their life. Contemplators recognize that they have a problem and are willing to make changes as they become increasingly distressed. Next, it is proposed that individuals begin to prepare by committing to make change and setting up the necessary steps to move forward. This stage is considered transitory and not consistently included in assessments of change. Individuals in the action stage make overt behavioural changes. Lastly, the maintenance stage is reserved for individuals who have made the appropriate changes and are trying to manage these new behaviours (Prochaska & DiClemente, 1984). People are described as differing along two dimensions in each of these stages; namely, behaviourally and attitudinally. Prochaska and DiClemente (1984) warn that although no behavioural changes occur between precontemplation and contemplation, awareness grows about personal problems at this time leaving individuals at risk of developing low self-esteem and feeling less in control of their lives. They may realize that they will have to give up things they once deemed important that were perhaps contributing to the behaviour they wish to change (Prochaska & DiClemente, 1984). Additionally, they may fear that they cannot overcome their problem and lose hope. Consequently, individuals in these early stages may have increased levels of defensiveness, may take action just to please others, and rarely demonstrate true commitment to making change (Prochaska & DiClemente, 1984). Concern, interest and vision
are thought to help move people from contemplation to preparation, but only if the costs do not outweigh the benefits (DiClemente, 2005). Once contemplators have moved through to the action stage, the TTM would argue that self-esteem should increase, as well as self-efficacy. It is believed that outsiders should be able to see behavioural changes in this stage. After the necessary changes have been made, the model indicates that individuals move to the maintenance stage. Poor procedure through these stages can result in relapse and recycling through the model (DiClemente, 2005). It should be remembered, however, that relapse is considered the norm and not uncommon according to the TTM. Instead of failure, individuals may demonstrate ‘successive approximation’ that results in a recycling through the stages: for example, the average smoker cycles through this model three times before successfully quitting (Prochaska & DiClemente, 1984). When an individual relapses, it informs “the intervener…that some tasks of one or more of the stages of change have not been completed adequately. It is a marker of inadequate learning, not a marker of failure or an indicator that the individual cannot change” (DiClemente, 2005, p. 6).

This model has affected how we think of change, and in particular, how addictive and problem behaviours are conceptualized, to move away from a linear trajectory to instead describe change in a circular manner (DiClemente, 2005). Additionally, the TTM has changed our language surrounding change proving to be less judgmental, such as describing resistant or unmotivated individuals as precontemplators or contemplators (DiClemente, 2005).

**Processes of change.** Prochaska and DiClemente (1984) describe the processes of change as the basic tasks individuals complete in order to move through the stages of change, regardless
of the problem behaviour. It is believed that these tasks are common across treatment modalities and approaches. They have identified ten unique processes that they state “build on each other so that the end product of this process is a new sustained pattern of behavior that is supported by the adequate accomplishment of each of the preceding tasks” (DiClemente, 2005, p. 6). The ten change processes of the TTM are: consciousness raising, self-reevaluation, social reevaluation, self-liberation, social liberation, counter-conditioning, stimulus control, contingency management, dramatic relief, and, helping relationship. Interestingly, research has demonstrated that individuals who make changes on their own often utilize all ten processes; however, most therapeutic interventions only apply two or three (Prochaska, 1979). According to the TTM, particular processes should be emphasized in particular stages of change: the first five processes in the above list are usually applied during the early stages of change and the remaining processes used in the later stages (DiClemente, 2005). These dynamic processes have shown to be powerful predictors of progress and even proved more accurate than static variables such as demographics and problem history (Prochaska, DiClemente, et al., 1992).

**Levels of change.** The last change component of the TTM is the levels of change. Levels represent where psychological problems are located within an individual, conscious and unconscious. The five levels described by the TTM are (in ascending order of complexity): (1) symptom/situational problems, (2) maladaptive cognitions, (3) current interpersonal conflicts, (4) family/systems conflicts, and, (5) intrapersonal conflicts. This aspect of the TTM recognizes that multiple conflicts at different levels may influence the problem behaviour. However, people may only attribute their problem(s) to one or more level, just as psychotherapy is often limited to one or two levels as well (Grimley, Prochaska, Velicer, Blais, & DiClemente, 1994). For example,
the problem behaviour could be symptoms in response to a particular event. Or, the problem might be more complex: “symptoms may be supported by maladaptive cognitions, which create interpersonal conflicts” (Fromme, 2010, p. 34). Treatment providers using the TTM are encouraged to start at the symptom/situational level because change tends to occur more quickly when we are more conscious of our problems (Grimley et al., 1994). As one moves further through the levels, awareness tends to decrease and the more integrated the problem is with the sense of self; thus, therapy likely becomes more complex – and consequently longer – as one progresses through the levels (Grimley et al., 1994). Psychological problems at one level are not experienced in isolation, meaning that change that occurs on one level will produce changes on other levels as well. The appropriate level to attend to in therapy often depends on the therapist’s theory of conflict and the client’s comfort with the content.

**Self-efficacy.** DiClemente (1981) operationalized Bandura’s (1977) concept of self-efficacy in a smoking population and later incorporated it into the TTM (1985). Self-efficacy is a cognitive construct that Bandura (1977) proposed was important for explaining behaviour change: it highlights one’s expectations around efficacy and determines if change is initiated, if change efforts continue and if change behaviours are sustained over time. Self-efficacy in the TTM is the belief that one is capable of making change, which is important for motivation and commitment as change requires that one is ready, willing, and efficacious. According to Prochaska et al. (2004), individuals experience the greatest increase in self-efficacy during the action and maintenance stages. Research has demonstrated the importance of this psychological construct for predicting change for various behaviours such as sexual health screening.
(Banikarim, Chacko, Wiemann, & Smith, 2003), drunk driving (Freeman et al., 2005), physical activity (Kim, 2004), and sexual offending (Pollock, 1996).

**Decisional balance.** Together with the stages and processes of change, plus self-efficacy, decisional balance is the final concept within the TTM that is used to explain how people make behavioural changes. The component of the TTM refers to an individual’s weighing of the pros and cons of making change. Research has found a link between stages of change and decisional balance: in precontemplation, the cons of changing outweigh the pros; then, as individuals transition to more advanced stages of change, the balance shifts and the pros of changing steadily increase (Prochaska & Velicer, 1997). Studies linking decisional balance with change related behaviour and stages of change in various populations (e.g., Chae, Kwon, Kim, & Jang, 2010; Luszczynska, Goc, Scholz, Kowalska, & Knoll, 2011; Waterman, Robbins, Paiva, & Hyland, 2010) support the inclusion of this construct in the TTM. Prochaska and Velicer (1997) suggested that focusing on the pros of changing is more successful than considering the cons of not changing in helping individuals prepare to make changes.
**Application of the Transtheoretical Model with offenders.** More recently, the TTM has contributed to our understanding of criminal behaviour and has been widely adopted by correctional programs (Casey et al., 2005). While originally limited to explain and treat substance abusers, the TTM has been applied to sexual offenders (Kear-Colwell & Pollock, 1997; Tierney & McCabe, 2005), intimate partner batterers (Eckhardt, Holtzworth-Munroe, Norlander, Sibley, & Cahill, 2008; Levesque, Driskell, Prochaska, & Prochaska, 2008), and victims of violence (Brown, 1997).

Criminal offending behaviour and treatment in this area have unique features that are not always found in other populations and therefore may require additional considerations. For example, as criminal offenders are often mandated to participate in treatment programs or feel informal pressures to do so, voluntariness of behaviour change is a concern when working with this population. Farabee and colleagues (1993) investigated readiness for change and other psychological variables among substance users who were either referred by the criminal justice system or self-referred (voluntary). They found that system-referred clients were lower in their readiness for change, desire for help, and assessment of drug problem, yet, were similar on various other variables such as self-esteem and hostility (Farabee, Nelson, & Spence, 1993).

While meeting individuals at their stage of change is the hallmark of applying the TTM to therapy, some researchers in corrections have pointed out that perhaps a balance needs to be struck between confronting and motivating criminal offenders (Kear-Colwell & Pollock, 1997; Silvergleid & Mankowski, 2006). In a qualitative study that interviewed several domestic violence perpetrators, some participants admitted that they admired their facilitator’s
confrontational style. Interestingly, “neither support nor confrontation from the facilitators stood out in isolation in the program participant’s accounts. Instead, some balance of both from the facilitator appeared necessary to fully engage the participants” (Silvergleid & Mankowski, 2006, p. 146). This may prove to be uniquely important for transitioning offenders through the stages and needs to be considered when applying the TTM with this population.

Another unique characteristic of criminal behaviour that has been considered in the change literature is the fact that criminals tend to ‘age-out’ of illegal activities: individuals engage in less criminal behaviour as they get older. A group of researchers who singled out age as a moderating factor of readiness for change in a group of offenders mandated to treatment for DUI charges proposed that older individuals are more reluctant to change and resistant to learning new information (Narayan, Steele-Johnson, Delgado, & Cole, 2007). Their results supported this proposal and showed that other extenuating factors, such as motivation to learn and perceived choice of treatment, affected treatment outcome more for older individuals. Perhaps these individuals’ identities are more entrenched in a drinking persona, meaning their personality is dominated by drinking-related attitudes, behaviours and images. And, due to the stability of this identity, efforts to challenge them are received with greater defensiveness and defiance.

Beyond explaining attempts to change criminal behaviour and developing interventions, Olver and others (2007) integrated a stages of change assessment into their risk/need assessment tool for sexual offenders. These TTM-related items assess dynamic variables that become targets for treatment. The authors proposed that “advancing from one stage of change to the next on a given item is an indication of positive change and, hence, risk reduction” (Olver, Wong, Nicholaichuk,
& Gordon, 2007, p. 320). In fact, follow-up data (approximately 10 years) of over 300 federal male offenders who had participated in a high intensity sexual offender treatment program demonstrated the predictive ability of the dynamic change variables: improvement in treatment, and therefore, successful progression through the stages, during incarceration was related to a reduction in sexual recidivism.

**Criticisms of the Transtheoretical Model.** The TTM has had considerable impact on our thinking about addictive and problematic behaviours. Despite its popularity, this model has also been victim of intense scrutiny and criticism, both in general and specific to certain behaviours such as criminal activity. The arguments against the validity of the TTM almost exclusively focus on the stages of change. These arguments tend to fall into three main areas of debate: the stages, measurement, and simplicity. Without restating the entire critical literature on the TTM, the following will briefly summarize the concerns raised about the stages of change component of this model.

Many criticisms have been made about the basic tenet of the TTM – the stages. It has been argued that the lines between stages are arbitrary and may not reflect actual change; consequently, knowing someone is in a particular stage may not be practically meaningful (e.g., Bandura, 1998; Sutton, 2001). Interestingly, even in early writings on the stages, it was acknowledged that in reality, the “stages are not assumed to be discrete nor is movement in therapy unidirectional and successive” (McConnaughy, Prochaska, Velicer, 1983, p. 369). Moreover, some stages of change questionnaires (e.g., University of Rhode Island Change Assessment) generate profile scores. The profile scores allow a more descriptive interpretation of
readiness for change without forcing individuals into a singular stage. DiClemente and Prochaska (1998) state that whether discrete categorizations or continuous measures are used to describe readiness for change, it does not change the fact that “individuals earlier in the process differ from individuals in the later stages on measures of change process activity, decisional considerations, and self-efficacy” (p. 9).

A second area of weakness highlighted in the literature on stages of change is measurement of this construct. As Littell and Girvin (2002) note in their review, studies measuring readiness for change use different assessment tools that can affect categorization of individuals. For example, some questionnaires inquire about past attempts at changing and others do not (Littell & Girvin, 2002). As well, some studies continue to categorize individuals into discrete groupings of readiness while others have adopted the profile method of describing the stages. Furthermore, there seems to be a lack of consistency within these measures (Littell & Girvin, 2002). Carey, Purnine, Maisto, Carey (1999) reviewed 12 different measures of readiness for change and concluded that “some measures have poor psychometric properties, whereas limited psychometric data are available for others. No single measure emerges as best for use in clinical settings” (p. 245). This issue is exacerbated when attempts are made to adapt original questionnaires to address specific problem behaviours such as polysubstance use (e.g., Abellanas & McLellan, 1993) or comorbid diagnoses (e.g., McMurran et al., 1998).

As mentioned above, measurement of complex problem behaviours is challenging and the simplistic outline of the TTM may not be suitable to adequately capture these behaviours. For example, Adams and White (2005) argued that physical activity is not a singular behaviour but
made up of many distinct actions. Consequently, people may be at different readiness for change for each of the separate actions making accurate measurement of readiness difficult. Taken a step further, Bandura (1997) stated that “human behavior is too multifaceted and multidimensional to be categorized into a few discrete stages” (p. 412). Similarly, West (2005) argued that the TTM’s explanation of change is too simplistic and fails to take into account other determinants of change such as reward and punishment. In response to such comments, Rollnick, Mason and Butler (1999) cautioned that “addictive problems should not be mystified as being too complex” (p. 207) and that practitioners need only worry about using the stages of change model to help clients think about change.

It should be recognized that there has been some concern about the use of the TTM as applied specifically to criminal behaviour. Casey and colleagues (2005) suggested that its use is limited due to the fact that “the TTM has been designed to account for high frequency behaviour (e.g., smoking, alcohol misuse), offending behaviour may be less frequent and the process of change less cyclical” (p. 157). Critics of the TTM also point out that many offenders are forced into treatment through court-orders and are maintained in an artificial environment, both of which inevitability influences the dynamics of change (Casey et al., 2005; Day, Tucker, & Howells, 2004). The external pressures exerted on offenders to change may be enough to impel these individuals to participate in treatment programs but this may alter their experience of change and the processes they encounter (Casey et al., 2005). Moreover, findings reported by El-Bassel et al. (1998) suggest that jail alone does not help to move offenders toward making positive changes in their life: “the circumstances of jail apparently have little effect on an individual’s readiness to change” (p. 393).
Transtheoretical Model summary. Overall, the TTM continues to demonstrate how behaviour change occurs and offers insights for treatment providers attempting to assist individuals with making change. The stages of change help to characterize when and if an individual is ready to begin making changes and provides alternate labels for people who may seem reluctant. The processes of change are important descriptors of how people change and what types of behaviours and/or attitudes are typically engaged during varying steps within the change process. Lastly, examining the levels of change can illuminate where individuals believe their problem is located. Additionally, understanding the level where the problem lies helps treatment providers to determine how deep treatment will need to go to reach the problem. When self-efficacy and decisional balance are considered as well, the TTM supplies us with a lot of information about behaviour change that can ultimately guide us to make changes more successfully. More specifically for the topic of this study, the TTM has demonstrated its usefulness for understanding change in some correctional populations such as with intimate partner batterers and substance abusers. Despite the research that supports this model in general, there is growing evidence that challenges the usefulness and validity of the TTM, particularly the stages of change component. Furthermore, illegal behaviour is diverse and somewhat unique, suggesting that perhaps the TTM may not be appropriate for offenders or should not be applied in isolation: it may be necessary to modify and/or augment the model. The current study aimed to address some of the limitations of the TTM in general and when applied to criminal offenders, plus examine the possibility that the Possible Selves Model, described below, may be an appropriate addition to the TTM and help locate individuals in their readiness for change.
Possible Selves (PSs) Model

**General concepts.** The Possible Selves (PSs) Model, originally created by Hazel Markus and Paula Nurius (1986), focuses on representations of ourselves we imagine that occur in the future, namely, those we expect, hope for, and fear. This model has been used to help understand individual behaviour and motivation behind our actions. By mapping our PSs, individuals can develop understanding and appreciation of their personal values and identify factors that affect their sense of self. In treatment, PSs can be helpful by focusing our attention on future goals and thereby directing our current behaviour. The future oriented focus of PSs in therapy can also increase one’s hope by attending to possibility and potential. Our PSs are based on previous experience, current happenings and expectations of the future. Naturally, they are also limited by our genes and constrained by our socio-demographic circumstances. People think a lot about their future and frequently envision what they might become. These conceived selves are based on our impressions of our future potential and what might be in store for us (Markus & Nurius, 1986). For example, my hoped-for PSs include becoming a psychologist, being a good mom and feeling healthy and fit. Some of my feared PSs include becoming ill, becoming too busy for my children, and being unhappy at my job. These examples demonstrate that rather than mere visions of ourselves, PSs are ‘cognitive manifestations’ of our expectations, hopes, goals, fears, etc. They are not abstract notions of what could be but go beyond to include a felt sense of future possibilities (Erikson, 2007). Erikson (2007) attempts to explain this aspect of PSs when he writes,

> even if a possible self is nothing but a representation of being in a future state, such as being victorious or grieving, it is still an experience of how it would be “from the inside”
for myself as a living, acting human and, therefore, qualitatively different from a notion of someone else being in this state (p. 352).

Cantor, Markus, Neidenthal, and Nurius (1986) would have agreed with this interpretation of the model, as demonstrated in their example of someone with a possible self (PS) of getting a bachelor degree: “An individual does not just have an abstract goal of ‘getting a BA.’ What this means cognitively for the individual is that she has a distinct representation of herself getting a BA or having a BA” (pp. 99-100).

Our PSs vary along the following dimensions: 1) elaboration, 2) valence, 3) timing, and 4) accessibility (Markus & Nurius, 1986). In terms of elaboration, some PSs are clear, detailed and complex, while others remain fuzzier in representation. This dimension can vary from one PS to another, but also between individuals (Nurius & Markus, 1988). For example, a ‘good mom’ PS is quite complex as it includes many different aspects of parenting. However, this self may become clearer over time as parents learn and the family structure matures. Next, PSs can be positive, or negative in nature. We can both hope we graduate college and fear we may fail our program of study. Sadly, we may also expect negative selves in the future. Some individuals may assume that they will be unemployed or addicted to drugs. Negative selves may be the result of hopelessness or anxiety but they may also merely reflect reality. In relation to time, we may have PSs that represent ourselves next year and those that we expect to become when we reach old age. Often our temporally close PSs are more heterogeneous from each other while our PSs that describe us in later life tend to merge and become more alike (Strahan & Wilson, 2006). Lastly, not all PSs are accessible to us at all times. For example, a PS that fears being alone may only arise when a friend cancels a lunch date or forgets our birthday. In this case, negative affect
emerges when this negative PS is activated and affects how we choose our behaviour subsequently (e.g., Bower, 1981; Clark & Isen, 1982; Salovey & Rodin, 1985). Negative affect can also emerge when the discrepancy between our current self and our PS increases (see Higgins, Klein, & Strauman, 1983). For example, when a college student who is hoping to become a doctor fails her biology class, she may believe that her chances of being admitted to medical school are lower and therefore she becomes upset. In fact, studies have shown that our estimates of probability of certain PSs coming true can be a better indicator of our current affect than other self-report measures (Markus & Nurius, 1986). Negative PSs have the power to prevent individuals from taking action: these individuals may feel burdened by negative selves and therefore feel that because there is no hope in the future, there is no reason to take action.

Beyond these four dimensions, PSs also differ in terms of how likely we believe they are and how attached or committed we are to achieving them (Cross & Markus, 1991). Individuals may have some PSs that they are certain will come true but have others that are closer to dreams and wishes. Similarly, they may feel very strongly toward achieving some PSs, such as following a particular career path or starting a family. Individuals may be more committed to these PSs which will have more influence on their current behaviour. However, other PSs may not produce such strong feelings: if these PSs do not come to fruition, our response may be less negative than what would be experienced if the PSs were of greater importance.

Possible Selves and change. PSs reflect our concerns about the future and therefore provide a bridge from our current self to our future self. In a way, they act like blueprints to guide our actions (Cross & Markus, 1991). PSs are mainly cognitive in nature and therefore have
the ability to influence our current self by acting as a filter to incoming stimuli, interpreting the data we do perceive, guiding decision-making and compelling behavioural actions (Markus & Nurius, 1986). For example, if Person X has an expected self of being a professional athlete, he will respond differently to an ankle injury than someone who does not have this PS. Similarly, a college student who has a hoped-for self of getting into medical school reacts differently to a grade of 65% on a biochemistry exam than someone who does not have this PS. Person X will undoubtedly feel compelled to exercise daily and choose healthier food options, while the college student may decide to skip a weekend getaway in favour of studying. Studies have found that motivation resulting from PSs varies temporally as well. Students who expected to do well on an upcoming test rated the test to be closer in time than students who did not expect to do well (Strahan & Wilson, 2006). The authors suggested that this subjective feeling could provide more motivation to study sooner if the students felt that the test was coming up quickly. Consequently, the students would start studying sooner and presumably do better on the test. The authors concluded that this acted like a self-fulfilling prophecy. Using these examples it becomes clear how our PSs are linked with motivation and act as incentives for behaviour since our thoughts about our future selves can energize our intentions into actions (Markus & Nurius, 1986; Oyserman & Markus, 1990).

Due to the intimate connection between PSs and motivation, it is logical to focus on PSs when initiating change. Markus and Nurius (1986) remind us that as they represent merely what could be, PSs are particularly sensitive to manipulations made to our current situation: “because possible selves are not well-anchored in social experience, they comprise the self-knowledge that is the most vulnerable and responsive to changes in the environment…and may in fact be the
elements of the self-concept that reflect such change” (p. 956). Unlike a fixed identity, PSs most closely resemble a working self-concept that is dynamic and continually shifting (Markus & Nurius, 1986). Conversely, the ‘now’ self is relatively stable and therefore fairly impervious to change. We know from self-protection models that individuals prefer to maintain their self-conceptions and will make great efforts to avoid changing the self-concept (Greenwald, 1980; Swann, 1983). This is especially relevant for current identities that are transfixed and long-standing, such as the population of interest for this study, career criminals (Healy & O’Donnell, 2006). Previous research has also demonstrated that individuals with fixed identities are less receptive to information suggesting they change. For example, Freeman and colleagues (2001) used the PSs Model to compare individuals who strongly identified as smokers to those who had a weaker smoker identity. They found that antismoking advertisements were rated less effective and unhelpful to induce quitting in people who rated smoking as a major component of their identity. In fact, “long-term smoking identity was the best predictor of participants' responses to antismoking messages” (Freeman, Hennessy, & Marzullo, 2001, p. 429). These smokers reacted more defensively to the negative messages – which were direct challenges to their self-concept – and therefore rejected the information, thereby protecting themselves. Similarly, for criminals who have a strong criminogenic identity, treatment attempts may cause defensiveness and therefore may be relatively unhelpful. Therefore we must address the deeply engrained identity first in order to increase one’s willingness to perceive this information more neutrally. This knowledge can help us to understand treatment resistance in a clinical realm, and to normalize such behaviours as natural and expected rather than pathological (Mahoney, 1991). We can see how it is difficult to change a person as they currently are due to the need to protect the self; however, if we instead focus on changing PSs, which are much more susceptible to
manipulation, change may occur more readily. This supports activating PSs in treatment, rather than the ‘now’ self if we want to induce change. Moreover, focusing on PSs may allow for people to ‘try on’ a new identity without full commitment in their current life, thereby making this a safe, yet effective, area of exploration in treatment for behaviour change. Therefore, individuals may have the ability to determine their future by creating future selves.

**Application of Possible Selves with offenders.** The PSs Model has primarily been applied to delinquent behaviour in adolescence (Aloise-Young, Hennigan, & Leong, 2001). Studies have found a relationship between delinquency and negative valence of PSs: youth heavily involved in delinquent behaviour are more likely to report negative selves as the expected selves in the next year (Oyserman & Fryberg, 2006). These same youth are more likely to list ‘having a job’ on their hoped-for list rather than on the expected selves list. Furthermore, the fewer number of positive possible selves that an individual had was related to more negative behaviour (e.g., under-age drinking) (Newberry & Duncan, 2001). Research has demonstrated that if young people have a balance between their positive and negative possible selves (e.g., have both a feared self of being a ‘drop-out’ and have a hoped-for self as a high school graduate), they are less likely to engage in illegal activities (Aloise-Young et al., 2001). Therefore, imbalance can be viewed as a risk factor for criminal behaviour. This could be related to the dual motivation provided by the balance or it may also be because a lack of balance yet many positive PSs could result in action taken but without consideration of possible negative selves (Oyserman & Fryberg, 2006). Moreover, delinquent youth tend to have feared PSs related to criminal behaviour but no expected PSs that could help them avoid it. For example, they might
fear being arrested but no expectation of pro-social behaviour. Aloise-Young et al. (2001) observed one gender difference in their sample that indicated fear is a stronger motivator for boys than for girls. Motivation fueled by fear has only demonstrated effectiveness when it has been coupled with specific strategies for managing these frightful feelings (Rogers & Prentice-Dunn, 1997). This is consistent with the PSs literature that has suggested that because PSs can involve plans for achieving goals, there is often a direct connection to motivation (Markus & Ruvulo, 1989). Similarly, Abrams and Aguilar (2005) interviewed delinquent boys and found that respondents who were ambivalent to identify their negative behaviours “had more vague images of their hoped-for selves compared to those who were very optimistic about their treatment” (p. 188). This sounds like boys who do not recognize they have a problem and are therefore less ready to make changes are the same adolescents who have less well developed PSs. These authors argued that people are “less likely to succeed in behavior change when they cannot imagine alternative ways of acting” (Abrams & Aguilar, 2005, p. 177). This provides support for addressing criminals’ visions of the future in an effort to motivate current behaviour changes.

The only study of PSs within an adult criminal population is Meek’s (2007) investigation of PSs with fathers incarcerated in prison. In this article, the author explores PSs of adult prisoners within the family context and discusses the utility of a PSs questionnaire as a data collection tool within correctional institutions. Based on their responses on a modified PSs questionnaire focusing specifically on parenting PSs, Meek (2007) concluded that these fathers were anxious about the separation, hoped that they could maintain a relationship with their children, and feared
being aggressive toward their family. Meek (2007) used these findings to reiterate the benefits of offering parental education and support in correctional facilities.

**Possible Selves Model summary.** Overall, the PSs Model is a useful tool to examine one’s self-concept of the future and provides insight into how visions of the future can motivate current behaviour. This becomes useful when attempting behaviour change and can aid treatment providers attempting to assist individuals making these changes. Individuals differ in the number and characteristics of PSs they have; including time, balance, valence, elaboration and availability. Together, these components supply us with information about one’s beliefs, intentions, and fears that influence and affect current behaviour that can ultimately guide us to make changes more successfully. Additionally, the PSs Model has demonstrated its usefulness for understanding behaviour in some correctional populations therefore providing support for further study on this model in criminal offenders. The evidence of the utility of this model in explaining behaviour change both in the general population and with some offender groups guided my investigation of behaviour change to include PSs with the TTM with adult criminal offenders – a population that has yet to be included in research of general future expectations using the PSs Model. The current study offers a unique examination of two change models to determine if PSs can be used to augment our understanding of readiness for change and explain behaviour above and beyond the information provided by the TTM.

**Comparing the Transtheoretical and Possible Selves Models**

Both the TTM and the PSs Model integrate cognitions and motivation to encourage behaviour change. These models attempt to explain why a person may or may not make changes and offer
possible insights into how change may occur. A closer examination of how these two models explain behaviour change and the processes of change individually can demonstrate how the TTM and PSs Model are theoretically similar and perhaps complimentary.

**Behaviour change.** The TTM clearly outlines how a person’s reported readiness for change can be directly linked to change-related behaviours. Research has demonstrated that individuals in the precontemplation stage of change are often reluctant to participate in treatment (Prochaska & DiClemente, 1984), are more likely to terminate therapy early (Brogan, Prochaska, Prochaska, 1999), and show poorer outcomes after interventions (Scott & Wolfe, 2003). Conversely, individuals in later stages of this model report utilization of more processes of change (Eckhardt, Babcock, & Homack, 2004; O’Hare, 1996) and engage in more change-related behaviours (Garner & Page, 2005). As individuals pass through the stages, research has shown that they rate the pros of the problem behaviour as less important, the cons as more important, and report greater self-efficacy with respect to changing their behaviour (DiClemente et al., 1991). This linear pattern of change in behaviour, cognition and other psychological variables through the stages of change has been established in various samples with a range of behaviours (see Armitage & Arden, 2007; Banikarim et al., 2003; Garner & Page, 2005). In general, the TTM tries to explain the link between motivation and behaviour. Similarly, the PSs Model has also demonstrated the ability to link motivation to change-related behaviours. For example, studies have shown that individuals who report positive hoped-for health-related selves engage in more healthy behaviours (Hooker & Kaus, 1992). Research has found a negative correlation between the number of positive expected future selves and negative behaviour (Aloise-Young et al., 2001; Newberry & Duncan, 2001). Furthermore, individuals who have
balanced expected and feared selves also engage in less negative behaviour (Aloise-Young et al., 2001). Other research has found that individuals who actually created an image of a specific future self are more likely to activate related behaviour compared to those who merely listened to the benefits of doing the behaviour (Gregory, Cialdini & Carpenter, 1982). Taken together, both the TTM and the PSs Model can adequately describe and predict intentional self-development leading to behaviour change.

**Processes of change.** Change does not equal action (Prochaska et al., 1992). There is a lot of ‘invisible’ work that individuals must do before they make behavioural changes. Part of this work includes attitudinal and cognitive modifications that allow awareness, increase knowledge and facilitate preparation for change. The TTM describes several change processes that occur before the action phase that address these attitudinal components. For instance, one of the earliest experiential processes of change that occurs, according to the TTM, is consciousness raising. As suggested by Miller and Rollnick (1991), people often begin to recognize there is a problem when they are able to identify the discrepancy between their current selves and the people they want to be – or put in the PSs Model’s language, discover the distance between their current selves and their positive possible selves. This distance, once observed, acts to motivate individuals into behaviour changes that would ultimately bring their current selves closer to their ideal selves. Therefore, both the TTM and the PSs Model include consciousness raising as an important change process that opens people’s eyes to the problem and increases motivation.

Self-reevaluation is another TTM process of change that is similar to concepts within the PSs Model. According to the PSs Model, individuals may have to change their vision of a PS or alter
a vision to be clearer, plus have a belief that they can become this self, before they are able to engage in behaviours that will lead to this future self. Additionally, people may have to generate new PSs as a mechanism of self-exploration. Research has shown that adolescents produce more PSs compared to adults, thereby suggesting that the production of PSs is involved in identity formation (Cross & Markus, 1991). This description sounds similar to the self-reevaluation process outlined in the TTM: self-reevaluation involves a reassessment of values that the individual may question, clarify, and/or reinstate (Prochaska et al., 1992). During this process, the TTM postulates that individuals will ask themselves if they will like themselves better if they don’t engage in the problem behaviour – such as smoking – or perhaps if others will like them better (Prochaska et al., 1992). These examples, when applied to the PSs Model, would sound more like, ‘Will I like myself better if I become my non-smoking possible self? Will others I care about like me better if I become my non-smoking possible self?’ This self-reevaluation process undoubtedly involves comparing one’s current self to one’s future selves and measuring the discrepancies between them. Again, imagining ourselves as different in the future and determining if this new self would be better liked by one’s self and others acts to motivate individuals to make behaviour changes. Both of these models agree that re-evaluating ourselves and asking ‘what if’ can help to clarify our values and goals and then induce changes in our behaviour. Furthermore, the TTM states that a change in a sense of self needs to occur when problem behaviours are central to one’s self identity (Prochaska et al., 1992). Using the PSs Model we can reinterpret this statement to read, ‘the more fundamental problem behaviours are in relation to their current self-concept, the more likely they will be forced to alter their possible selves’.
The similarities between these models continue in the maintenance phase: the TTM asserts that the most important aspect in this stage is gaining an appreciation for becoming more aligned with your goals (Prochaska et al., 1992). This sounds very similar to the core of the PSs Model that states self-satisfaction and esteem increases when individuals believe they are living in line with their positive possible selves (Oyserman & Fryberg, 2006). It has been proposed that change will be successful and sustained only if it involves alterations to the self-system (Stein & Markus, 1996). To do this, one must consolidate the new identity of the positive PS (Healy & O’Donnell, 2006). Investigating the PSs of individuals then provides a direct measure of this change in self.

By examining how these models explain behaviour change individually, it becomes clear that the Transtheoretical and the Possible Selves Models describe behaviour change and the processes of this change in a conceptually and theoretically congruent manner and yet add to each other. Moreover, both models can be applied and used for most types of behaviours. They are generic in organization yet are used to describe the uniqueness of each person attempting behaviour change: PSs are shaped by the personal dreams, desires and goals of each individual; and, the stages of change characterize people at their level of readiness. Demonstrating the congruity of these models is particularly important before steps are taken to integrate these models.

**Added Explanatory Power of Combining the Transtheoretical and the Possible Selves Models**

While theoretically similar, the PSs Model is suited to complement the TTM rather than stand alone as a comprehensive explanatory model of behaviour change. On the other hand, the TTM
may become more practical with the addition of concepts found within the PSs Model. Reviews of the TTM have suggested that the stages model provides descriptive rather than explanatory accounts which severely limit its predictive ability and clinical utility (Burrowes & Needs, 2009). Most of the research has been focused on the stages of change component of the model leaving the processes of change, which have been described as potentially the most “fruitful lines of inquiry” (Armitage, 2009, p. 206) without much empirical support or investigation. It has been argued that, “it would be valuable to explore other means by which the processes of change can be harnessed to promote behaviour change,” (Armitage, 2009, p. 206). Therefore, beyond using the stages of change alone to direct therapeutic programming, researchers and treatment providers have begun to recognize that the processes are the “engines of change that make movement through the stages possible and are becoming more important in intervention planning,” (DiClemente, 2005, p. 7). In a recent article, DiClemente (2005) wrote,

> The goal of influencing specific processes of change should be the focus of all interventions to be constructed, materials to be created, and techniques that are taught to behavior change interveners and specialists. What are the best ways to get our patients and clients doing the kinds of activities that would enable them to accomplish critical stage tasks and move successfully from one stage to the next or effectively learn from recycling through the stages? (p. 7)

To answer this query, several researchers have proposed applying concepts to the TTM to aid in understanding and encouraging the process of behaviour change. For example, Williams and Strean (2002) describe a treatment intervention with mandated offenders that encourage them to identify and address their personal needs in order to have increased quality of life (QOL). This process tends to unlock internal motivation within offenders that then allows treatment providers
to engage individuals more quickly. Focusing on QOL as a pre-treatment primer helps individuals become ready to make changes, and therefore, is consistent with the TTM. Similarly, Mendel and Hipkins (2002) used motivational interviewing (MI) techniques to assist offenders with alcohol-related issues through the stages of change. They found that after the MI group, most of the participants reported feeling more motivated to make changes and had shifted one or more stages of change. The incorporation of MI techniques was effective in increasing readiness for change in a study of substance using offenders of domestic violence as well (Easton, Swan, & Sinha, 2000). Due to the success of boosting readiness with MI, Corcoran (2002) proposed using this technique in conjunction with the TTM for developing interventions with mothers of children who have been sexually abused.

To date, only two studies could be found that paired the PSs Model with the TTM to investigate behaviour change. Dunkel, Kelts and Coon (2006) tested several predictions relating to number of PSs generated and the content of these selves with stages of change in a group of women in a residential facility for drug-addiction. They found that women in the preparation stage, compared to those in the maintenance phase, had more PSs in total and more related to abstinence. The authors concluded that the stages of change were directly linked to the total number of PSs produced (Dunkel et al., 2006). These findings support the idea that generating PSs is part of self-exploration, a process used in contemplation. In general, the women just beginning their journey of change were still ‘trying on’ different future selves; while the women who were maintaining changes already made, had narrowed down their choices of who they wanted to become and were attempting to live these selves.
Horneffer-Ginter (2008) collected PSs data from college students regarding their health to explore possible motivations for moving from the precontemplation to the preparation stage of change. The study found that “for smoking, precontemplators had the fewest number of illness-related possible selves” (Horneffer-Ginter, 2008, p. 351). Therefore, smokers who were not ready to make changes did not believe they would become ill in the future. The author described how the PSs Model could be used as an educational tool to address specific attitudes regarding readiness for change according to the TTM.

Taken together, these studies demonstrate how the PSs Model may add explanatory power to the TTM. As described by Stein and Markus (1996) change to the self-system is necessary for behaviour change to be successful and sustained over time; therefore, before individuals are ready to make changes, exploring their PSs in relation to the behaviour of interest is crucial. Once new PSs are developed and/or existing PSs altered, this change in the self-system may provide a conduit for the necessary behaviour changes to occur. The PSs Model helps us understand a process of change that is less clearly outlined in the TTM.

**Application of Models of Change to a Correctional Population**

Overall, the above studies support the possibility of integrating the PSs Model with the TTM and suggest that applying the PSs Model to interventions guided by the TTM may prove to be beneficial. It is proposed that the PSs Model will help explain the change process, and thereby assist us in understanding the TTM as applied to behaviour change. With greater understanding of these models, clinicians will have the ability to apply them more effectively in therapy and when developing interventions. Used either as a pre-treatment or subcomponent of a full
treatment program, the PSs Model could be used to help enhance individuals’ readiness for change and move them from one stage to the next thereby increasing the successfulness of the treatment being applied. For example, treatment providers may assist individuals in mapping their PSs in an effort to develop understanding and appreciation of their personal values and identify factors that affect their sense of self. This exercise could comprise part of the self-reevaluation and consciousness-raising processes of change the TTM describes as crucial in the pre-action stages of change. Assisting individuals to generate PSs can reveal potential and increase hope. It is hypothesized that doing so would give individuals in the earlier stages of change the strength and belief that change is possible, thereby engaging in the self-liberation process of change and increasing commitment to making changes. More specifically for the purposes of this study, the PSs Model could be used to guide criminal offenders in the creation of positive possible selves and/or strengthen already existing selves that need further elaboration. In this way, working on offenders’ PSs would address TTM processes of change: offenders are asked to think about their values and aspirations in order to conceptualize their selves in the future. These conceptions are then concretized as possible selves and used to examine current behaviour. Noticing possible incongruence between current behaviour and hoped-for PSs may act to increase motivation to change and kick-start change behaviours. Applied in this manner, the PSs Model supplies treatment providers with specific tasks and offers a tangible mechanism for accomplishing some of the processes of change loosely described in the TTM. Once offenders have a notion of their hoped-for future selves, this will perhaps improve their reception of the behaviour change interventions that follow. Therefore, it seems that the PSs Model may help to explain the broader TTM and even act to augment it for individuals embarking on making changes in their behaviour. Modifications to the way the TTM is utilized may be especially
necessary when applied to unique populations and/or those viewed by some as treatment resistant, such as individuals involved in the law.

**Need for Research on Change in Correctional Populations**

Our criminal justice system remains plagued by the ‘revolving door’ syndrome: nearly half of all criminal offenders who complete a provincial incarceration of more than six months will return to jail within two years (Ministry of Community Safety and Correctional Services [MCSCS], 2008). Statistics show that a small number of individuals commit the majority of crimes (Piquero, Farrington, & Blumstein, 2003; Tracy, Wolfgang, & Figlio, 1990). Chronic offenders (CO) are individuals who persistently engage in criminal activity and pose the greatest risk to our communities. Formal definitions of these offenders have varied in the literature using police contact, charges, convictions and jail time as variables of interest. For the purposes of this study, CO have been defined as individuals who have been incarcerated on at least five instances (Piquero, 2000). This group of offenders creates challenges for an already overburdened criminal justice system as jail sentences do not seem to deter them from committing further criminal acts.

When compared to first-time offenders (FTO), CO are typically individuals who began engaging in illegal activities early in life and entered the criminal justice system at a young age (Patterson, Forgatch, Yoerger, & Stoolmiller, 1998), have an external locus of control (Gaum, Hoffman, & Venter, 2006), exhibit poor self-control (Delisi & Vaughn, 2008), engage in drug use (Wiesner, Kim, & Capaldi, 2005), and may possess psychopathic traits (Vaughn & Delisi, 2008). Unlike FTO, these individuals may feel that their repeated exposure to the criminal justice system has ruined their chances at a ‘normal’ life and forfeited the opportunity to be law-abiding citizens. With a lengthy criminal record they are often fully aware that this severely limits their
employment options. Furthermore, their involvement in the criminal justice system has often caused strains on their relationships with family and friends, affected their financial standing, and compromised several personal psychological variables such as self-efficacy and mood. Consequently, CO may lose hope for the future and ask themselves, ‘why bother changing’? Using the PSs Model to characterize this population, we may see that their PSs are more negative in nature and their estimates of the likelihood of their hoped-for selves lower. In terms of the TTM, it seems logical that their readiness for change will be minimal thereby reducing the likelihood that they will engage in behaviours that promote positive change. It is hypothesized that disbelief in the possibility of positive future selves is a significant barrier to transition through the stages of change. It can be argued that using the PSs Model to help these individuals – specifically, those who feel that their future is marred by past circumstances – through the stages of change will be more effective than applying the TTM principles on their own. The PSs Model focuses on self-evaluation and promotes a sense of hope for the future. These concepts may help us to understand how individuals travel through the stages of change, why they struggle through the stages and what happens when failure to make changes occurs. Conversely, for individuals whose involvement in the justice system is minimal – such as with FTO – their lives may not yet be heavily affected by their criminal behaviour. They may continue to have a social support system and employment opportunities to fall back on. As a result, they may still believe in a positive future for themselves and have hope that they will be able to achieve it. Therefore, they will have healthier PSs, be more ready to make any changes necessary and have fewer barriers to transitioning through the stages of change.
In summary, CO fail to make changes to desist from engaging in illegal activities despite repeated criminal sanctions and legal interventions. Existing studies have achieved some success in explaining this phenomenon with the most promising work guided by the Risk-Needs-Responsivity Model (RNR) (Andrews, Bonta, & Hoge, 1990). This model attempts to identify, 1) offenders who pose the greatest risk and therefore will benefit most from intensive interventions; 2) appropriate targets of change, referred to as criminogenic needs; and, 3) relevant responsivity measures, including tailoring interventions to offenders (Andrews et al., 1990). Critics of this model are resistant to the focus on criminogenic needs rather than the personal well-being of the offender (Ward & Stewart, 2003). However, Andrews (2008) also noted that “a continuing problem [of the RNR Model] is a weak understanding of specific responsivity issues such as the relatively low participation and high drop-out rates of higher risk cases”. This point seems to highlight the fact that some offenders are not ready to make changes and therefore do not participate and/or complete treatment programs. The current study aims to investigate whether the TTM and PSs Models can assist us in understanding offenders’ readiness for change. Greater knowledge of behaviour change in offenders could address some of the limitations of the RNR Model and eventually lead to improving interventions designed for criminal offenders. By refining our responsivity to offenders with a better understanding of behaviour change, this could help to reduce risk in this population and create safer communities. While risk is predominantly measured by examining static factors such as criminal history, the Level of Service Inventory (LSI) (Andrews, Bonta, & Wormith, 1995) attempts to incorporate all RNR principles to predict behaviour and estimate risk in offenders. To measure results of incarceration and/or correctional interventions, recidivism rates are typically used. These data are not appropriate, however, to gauge behaviour change in already incarcerated offenders. One way
to measure inmates’ risk then, is to observe their behaviour during incarceration; for example, disobeying the rules or participating in programming. Gendreau, Goggin, and Law (1997) assert that it may be reasonable to view prison behaviour as a proxy for behaviour in the community once released as there is some evidence to suggest that prison misconduct can predict future recidivism (Langan, Camp, & Saylor, 2004).

**Current Study**

The current study examines readiness for and the process of behaviour change among criminal offenders as described by two models, namely the TTM and the PSs Model. It also tests the explanatory power of these models for behaviour observed during incarceration. More specifically, this study compares CO with FTO on psychological variables such as their readiness for change, vision of their possible selves, and hope for the future, as well as on legal variables such as risk for recidivism and institutional behaviour. These results are intended to inform us about the nature and use of these two models in criminal offenders generally and by offender group. Furthermore, this study investigates the possible contribution of the PSs Model to the TTM to determine if greater understanding of behaviour change can be achieved.

**Research Questions and Hypotheses**

**Criminal Chronicity**

1. Are criminal offenders differentiated in stages of change as outlined by the Transtheoretical Model? Specifically, how do CO differ from FTO in their readiness for change?
Hypothesis: Criminal chronicity will be negatively correlated with stage of change, with repeat offenders falling in the earlier stages of change.

2. Are criminal offenders differentiated on their vision of their future selves as outlined by the Possible Selves Model? Specifically, how do CO differ from FTO on the dimensions of their possible selves (i.e., valence, balance, etc.)?

Hypothesis: Criminal chronicity will be negatively correlated with the dimensions of possible selves. Individuals chronically involved in criminal activity will: 1) have fewer positive possible selves; 2) have less balanced possible selves; 3) have less complex hoped-for selves; and, 4) believe their positive possible selves are less likely to come true and their feared selves more likely to come true.

Stages of Change and Possible Selves

3. Do criminal offenders’ visions of their future selves relate to their readiness for change?

Hypothesis: Offenders will produce differing numbers of negative and positive possible selves based on the stage of change to which they belong. In particular, offenders in the earlier stages will produce fewer negative possible selves and this will increase with greater readiness for change. Offenders in the contemplation stage will produce the fewest number of positive possible selves. Likelihood ratings will also correlate to stage of change. For example, offenders in the earlier stages of change will rate feared possible selves as less likely to occur. Lastly, offenders in the precontemplation stage will produce the fewest number of feared selves related to future criminality.

Stages of Change, Possible Selves and Behaviour
4. Are chronicity, the Transtheoretical Model, and Possible Selves related to institutional behaviour? Can stage of change and PSs predict institutional behaviour such as misconduct and treatment participation?

**Hypothesis:** Chronic offenders will engage in the most institutional misconducts and participate less in treatment programs compared to first-time offenders. Offenders in the earlier stages of change will engage in the most institutional misconduct and participate less in treatment programming. Plus, offenders with many positive PSs who believe these selves are more likely to come true and their feared selves less likely to come true will have fewer misconducts and participate in more treatment. Furthermore, misconducts and treatment participation can be predicted by chronicity, stage of change, and possible selves variables with each type of variable adding incremental predictive value.
Chapter 2: Methodology

Sample
Data was collected from 109 male offenders serving sentences from two provincial correctional institutions (Sites A and B). Fifty-three of these participants were CO, meaning they had been incarcerated at least five times, and 56 were FTO who were serving their first closed-custody sentence. Minimal inclusion criteria were applied: (1) inmates were serving sentences of at least two months and not merely on remand; and, (2) participants had basic self-reported reading and writing skills in the English language. The minimum sentence was required because risk/needs assessments conducted by correctional staff are only performed on individuals with sentences greater than two months.

Procedure
Prior to commencing the study protocol, administrative and ethics approvals were obtained from academic and correctional research boards. For recruitment, inmates at Site A were informed of the study through announcements made at orientation sessions or during leisure time. At Site B, ads for the study were distributed among the inmates and consent to contact forms were returned. After indicating interest in the study, inmates were called to an interview room and received an information letter outlining the purpose of the study, the procedure, protection of and limits to confidentiality, potential risks and benefits, the voluntary nature of participation, and the intended uses of the data collected. The chronicity status (CO or FTO) and inclusion criteria of the offenders were also reviewed at this time to ensure that individuals were appropriate for the study. If the individual met criteria and agreed to continue with the study, he was given a consent form to sign. Participants were then asked to attend one research session, lasting approximately
one hour. Research sessions took place individually or in groups of 2-5 inmates, during scheduled leisure time at the institution.

Measures

Several measures were used in this study to collect data on psychological and legal variables. The measures can be divided into four main categories: demographics and criminal background, measures of behaviour change, supplementary information, and institutional data. The demographics and criminal background questionnaire was used to characterize the sample and verify the grouping of offenders. The measures of change collected information on readiness for change and processes of change utilized, along with descriptions of future selves. The supplementary questionnaires were used to examine the validity of the primary tools. Lastly, the institutional data collected from records provided necessary information on risk and outcome measures of behaviour change. The following describes each of the measures in greater detail.

Demographics and criminal background data. A brief questionnaire created by the author was designed specifically for the purposes of this study to characterize the sample. The demographic variables included age, place of birth, primary language, ethnicity, marital status, dependents, education, and employment history. The criminal background section addressed both formal and informal contact with the law, including age at first contact with the law and first official conviction, number of lifetime arrests and convictions, drug/alcohol abuse, and gang-affiliation. To ensure accurate collection of criminal behaviour, criminal records were also collected with the permission of the participants.
Measures of change.

*University of Rhode Island Change Assessment (URICA, McConnaughy, Prochaska, & Velicer, 1983).* This 32-item tool was one of the first created to measure readiness for change according to the TTM and is now the most widely used (Sutton, 2001). Unlike other instruments that focus on a particular problem behaviour, the URICA asks respondents to answer questions about a general ‘problem’ and therefore can be used to assess a wide range of behaviours. Respondents rate their opinions about change on a five-point scale, with 8 items measuring each of four stages. It uses a multidimensional scaling approach that evaluates individuals on each of the stages of change, therefore providing a stages of change profile that is unique to each respondent rather than placing respondents into discrete stages (although categorical descriptions are possible as well). Psychometric analysis of this scale indicates that there is high internal consistency for each of the four stages of change (all coefficient alphas at or above .88) and cluster analyses have demonstrated accurate classification (90%) of respondents (McConnaughy et al., 1983). Other researchers have confirmed the factor structure (DiClemente & Hughes, 1990; Willoughby & Edens, 1996), found high test-retest reliability (Abellanas & McLellan, 1993), and reported adequate external validity (Willoughby & Edens, 1996).

*Processes of Change Questionnaire (PCQ, Prochaska, Velicer, DiClemente, & Fava, 1988).* This 40 item tool is rated on a 5-point Likert style scale and measures both the overt and covert behaviours and attitudes of behaviour change. It addresses the 10 specific processes of change as outlined in the TTM. The original questionnaire demonstrated very good coefficient alphas ranging from .78 to .91 for each process identified; however, since the original wording of this measure was modified to address criminal offending rather than smoking
behaviour, analyses were conducted to re-test the alphas for each subscale. Unfortunately, three of the ten subscales failed to meet the semi-conservative alpha chosen of .68: Dramatic relief, Social liberation, and Counter-conditioning. The other seven subscales produced alphas in the range of .68 to .88. For the purposes of this study, only the seven subscales that met the alpha criteria were used in subsequent analyses.

**Possible Selves Open-Ended Questionnaire (PSOEQ, Cross & Markus, 1991).** Modeled after the Hoped-for and Feared Possible Selves Questionnaire originally created by Cross and Markus (1991), participants were asked to list all of the possible selves they could think of for both hoped-for and feared PSs. They were instructed to imagine PSs that they considered likely, as well as those that perhaps seemed farfetched, in an attempt to capture all the PSs each person had. Then they were asked to rate the likelihood of the PS coming true on a 7-point Likert scale with higher scores indicating greater likelihood. Lastly, the questionnaire asked participants how much they hoped for or feared each PS. This question was rated on a 4-point scale from not at all hoped for/feared to very hoped for/feared. This method of eliciting possible selves has been successfully used in several previous studies (e.g., Cross & Markus, 1991; Dunkel & Anthis, 2001; Frazier, Hooker, Johnson, & Kaus, 2000; Knox, Funk, Elliott, & Bush, 1998). These ratings have demonstrated convergent validity with positive affect and self-esteem (Markus & Nurius, 1986). After completing data collection, the author compiled answers to create several categories of responses for data analysis purposes such as gauging complexity of PSs. These categories were derived from previous research (see Knox et al., 1998; Oyserman, 2004; Oyserman & Markus, 1990) as well as from the nature of the sample. The categories included PSs relating to: education, occupation, interpersonal relationships with adults, interpersonal...
relationships with children, psychological functioning, health for self, health for others, materialistic/lifestyle, crime, hobbies, and society.

**Supplementary measures.**

*Release and Reintegration Inventory (RRI, Kroner & Mills, n.d.)*. This measure was developed as a risk assessment tool and is intended to provide concurrent validity to the PSs measure and ask about expectations in the near future as opposed to a more general time in the future, and those specifically related to the behaviours of interest. The RRI is used to query offenders about their expectations after release from a residential correctional facility relating to their personal, social, and behavioural arenas in their lives. Research shows that expectations of future behaviour can be predictors of current behaviour (e.g., Strahan & Wilson, 2006).

*Expectations of time incarcerated (ETI)*. A brief questionnaire created by the author was designed specifically for the purposes of this study in order to supplement the RRI. The ETI was intended to capture expectations of participants of their behaviour while incarcerated and once released that were not explicitly captured in the RRI measure described above. Specifically, participants were asked to answer simple yes/no questions regarding: 1) institutional behaviour such as getting along with others, participation in programming, and breaking the rules; and 2) behaviour upon release such as breaching parole and reoffending.

*The Hope Scale (Snyder et al., 1991)*. This measure was also added to the protocol to provide concurrent validity for the PSs measure, as hope and one’s belief about the future are theoretically related. This scale contains 12 items answered on an 8-point Likert scale. Two
constructs of hope related to pursuing goals, namely agency (the will) and pathways (the ways), are measured. An example of an agency question is, “I energetically pursue my goals,” and an example of a pathways question is, “I can think of many ways to get out of a jam”. Four items are included for each of the agency and pathways factors and four statements are filler items. Scores for both the agency and pathways variables could range from 4 to 16, with higher scores indicating more hope. The test-retest reliability of this scale has been examined in various normal samples and found to range from .82 to .85 over a ten-week period (Snyder et al., 1991). The whole hope scale has demonstrated adequate internal consistency reported at .74 to .84 by its authors. The validity of this measure was thoroughly examined revealing expected convergent validity with other well-being constructs such as optimism and expectancy for success, general desire for control, self-esteem and perceived problem-solving skill. The hope scale also showed good divergent validity with measures such as depression and other psychological ailments. Additionally, this scale has demonstrated impressive discriminant validity and has shown to account for unique variance above and beyond other constructs mentioned. Further support for the validity of this measure is found in Babyak, Snyder and Yoshinobu (1993).

Institutional and outcome measures.

*Level of Service Inventory-Ontario Revision (LSI-OR, Andrews, Bonta & Wormith, 1995).* Risk assessment tools act as a formal indicator of estimated risk of specific future behaviour. The Level of Service Inventory (LSI) was developed during the 1970’s in Canada. Andrews et al. (1995) further developed the instrument for an ‘Ontario Revision’ resulting in 54 items that measure ten components of risk of recidivism. The LSI-OR is a risk/needs assessment instrument that is theoretically derived and extensively researched. Scores for this instrument are
generated on a computer and were attained by the researcher through correctional records. The components addressed are criminal history, education and employment, financial, family and marital, accommodations, leisure and recreation, companions, alcohol and drug problems, emotional and personal, and attitudes and orientations. Individuals are given one point for every risk factor (i.e., previous incarceration, criminal acquaintances, history of drug problem, etc.). Total scores are organized by level of risk: 0-4 very low, 5-10 low, 11-19 medium, 20-29 high, and above 30 considered very high.

Of several available risk assessment tools, the LSI-OR was chosen because it is one of the most common and well-researched tools in this area (Gendreau, Little, & Goggin, 1996). The LSI-OR has been tested and evaluated at length and proven to be a useful tool for assessing risk in inmates (Girard & Wormith, 2004), including females (Brews & Wormith, 2007). Furthermore, it is administered as part of the standard intake process within the Ministry of Community Safety and Correctional Services (MCSCS) for offenders serving sentences of two or more months. Permission to collect LSI-OR scores from institutional records was sought during the consent process.

**Institutional behaviour.** Two main behavioural indicators that provide a barometer of change within inmates, specifically misconduct or infractions and treatment participation, were collected. Data regarding these behaviours was collected from the MCSCS through institutional records in order to characterize participants’ behaviour during incarceration. Due to time restraints, only the first six months post-study was collected; however, since the average sentence to Ontario jails is 72.6 days and 82% of inmates are released by six months (MCSCS,
2011), this time period likely captured the full sentence for most participants. Permission to obtain this information was sought during the consent process.

**Data analysis**

The primary research questions of this study relate to examining the relationships between the models of interest, namely, TTM and PSs, psychological measures of hope and expectations, criminological data on past unlawful behaviour and risk for recidivism, and institutional behaviour. Additionally, differences between groups (CO and FTO) on these variables were investigated. All data was entered into the statistical program, SPSS, to be analyzed. Initially data were examined and organized, and then correlational analyses were conducted to determine the relationships that exist among these variables and between groups. Lastly, hierarchical regression analyses were run to test the contribution of PSs to the TTM in the ability to predict behaviour.

**Chapter 3: Results**

**Demographic Data**

A total of 109 men completed this study, 53 in the chronic offender (CO) group and 56 in the first time offender (FTO) group. The mean age of the entire sample was 32 ($SD = 10.8$). Most of the sample was close to achieving their high school diploma, averaging $11.49$ ($SD = 2.14$) years of schooling. The majority of the participants was Caucasian and single with children. Most of the offenders worked as labourers prior to incarceration. To rule out possible site differences on demographic factors, offenders at Site A were compared to those at Site B. Independent samples t-tests showed one significant difference between the participants, namely that individuals at Site
A were younger, 29.6 (SD = 9.6), than individuals at Site B, 35.9 (SD = 11.4), t(103) = -3.01, p < .01. Additionally, chi-squared analyses found that offenders from Site B were more likely to have children than offenders from Site A, χ²(1, N = 107) = 13.67, p = .00. This second finding could be due to the age difference in that older individuals are more likely to have children compared to younger ones. Similar analyses conducted between the chronicity groups revealed only one difference between them: more CO were either single or in common-law relationships, while FTO were mostly single, then common-law, married or divorced. A complete description of the demographic variables can be seen in Table 1.

Table 1

Demographic Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, sd)</td>
<td>34.37 (9.7)</td>
<td>30.43 (11.5)</td>
</tr>
<tr>
<td>Ethnicity - Caucasian %</td>
<td>66</td>
<td>55.6</td>
</tr>
<tr>
<td>Yrs. Of Education (mean, sd)</td>
<td>11.25 (2.1)</td>
<td>11.72 (2.6)</td>
</tr>
<tr>
<td>Marital Status %*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>single</td>
<td>38.5</td>
<td>54.5</td>
</tr>
<tr>
<td>married</td>
<td>3.8</td>
<td>14.5</td>
</tr>
<tr>
<td>common-law</td>
<td>38.5</td>
<td>16.4</td>
</tr>
<tr>
<td>separated</td>
<td>11.5</td>
<td>1.8</td>
</tr>
<tr>
<td>divorced</td>
<td>7.7</td>
<td>10.9</td>
</tr>
<tr>
<td>widowed</td>
<td>0.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Has children %</td>
<td>64.7</td>
<td>50.0</td>
</tr>
<tr>
<td>Last occupation %*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>labourer</td>
<td>56.6</td>
<td>54.5</td>
</tr>
<tr>
<td>unemployed</td>
<td>17.0</td>
<td>12.7</td>
</tr>
<tr>
<td>student</td>
<td>3.8</td>
<td>1.8</td>
</tr>
<tr>
<td>business</td>
<td>1.9</td>
<td>7.3</td>
</tr>
<tr>
<td>office admin</td>
<td>3.8</td>
<td>1.8</td>
</tr>
<tr>
<td>retail/sales</td>
<td>1.9</td>
<td>5.5</td>
</tr>
<tr>
<td>other</td>
<td>15.1</td>
<td>14.5</td>
</tr>
</tbody>
</table>

*aSignificant difference between chronic and first-time offender.

*Numbers do not equal 100 due to rounding.

CO = chronic offender, FTO = first-time offender

Criminal Behaviour Data
Chronic offenders must have been incarcerated on at least five separate occasions to be included in this study. The average number of separate incarcerations per person ranged from five to over twenty-five. Many of these participants had been involved with the law from a young age. Most of the inmates had been jailed for multiple types of convictions but mainly crimes against property and persons. Crime against property includes offences such as theft and possession of tools used for stealing. Crime against persons includes offences such as assault, manslaughter and robbery. The LSI-OR revealed average risk for recidivism scores in the high risk range. Only 4 (or 7.8%) of CO admitted to being part of a gang prior to incarceration. However, 90% indicated that they had abused drugs and/or alcohol some time in the past. During the incarceration period relevant to this study, approximately 25% of CO were employed in a work program and slightly less participated in at least one treatment session, group, etc. Similarly, a quarter of these offenders received one or more formal misconducts during this time. Table 2 highlights the criminal behaviour data for this group and Table 3 outlines the institutional behaviour of these offenders.

First-time offenders were serving their first closed custody sentence, but may have had previous criminal convictions with community sentences, probation, and/or alternative punishments. Most of these offenders were in jail for crimes against the person. The majority of LSI-OR risk for recidivism scores were in the medium risk category for this group. Only 3 (or 5.4%) of FTO admitted to gang affiliation prior to incarceration. However, 43% indicated that they had abused drugs and/or alcohol some time in the past. During their incarceration, approximately 18% of FTO were employed in a work program. Equal numbers of these offenders – approximately 23% – participated in at least one treatment session, group, etc. and received one or more formal...
misconducts during this time. Again, see Tables 2 and 3 for information on the criminal and institutional behaviour data for this group.

As would be predicted, independent t-tests indicated that there were large differences between groups on LSI-OR scores, $t(101) = 6.7, p = .00$, with CO at greater risk for recidivism. Additionally, CO also reported becoming involved in the criminal justice system at a much earlier age compared to FTO, $t(81.8) = -4.7, p = .00$. Chi-squared analyses revealed that FTO had lower self-reported incidence of drug and/or alcohol abuse, $\chi^2(1, N=108) = 15.17, p = .00$. Means scores for the LSI-OR, age of first conviction and drug and/or alcohol abuse can be seen in Table 2.

Further analyses investigating site of data collection were conducted to test for site specific differences of criminal and institutional data. Although site differences were not expected, the results indicate that more FTO came from Site A than Site B. Consequently, Site B had higher LSI-OR scores. Additionally, offenders were more likely to work and participate in treatment programs at Site B versus Site A. Lastly, in relation to the types of crimes committed by the offenders at each site, fewer offenders at Site B had committed a crime against a person but housed all the offenders who had a history of sexual offences.
Table 2

*Criminal Behaviour Data*

<table>
<thead>
<tr>
<th>Variables</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSI-OR total score&lt;sup&gt;a&lt;/sup&gt;</td>
<td>26.02 (7.0)</td>
<td>15.98 (8.1)</td>
</tr>
<tr>
<td>LSI-OR category %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>very low</td>
<td>0</td>
<td>3.8</td>
</tr>
<tr>
<td>low</td>
<td>2</td>
<td>26.4</td>
</tr>
<tr>
<td>medium</td>
<td>14</td>
<td>34.0</td>
</tr>
<tr>
<td>high</td>
<td>48</td>
<td>28.3</td>
</tr>
<tr>
<td>very high</td>
<td>36</td>
<td>7.5</td>
</tr>
<tr>
<td>Age at 1&lt;sup&gt;st&lt;/sup&gt; conviction&lt;sup&gt;a&lt;/sup&gt;</td>
<td>17.62 (6.2)</td>
<td>25.75 (11.1)</td>
</tr>
<tr>
<td>Types of crimes %&lt;sup&gt;*&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>67.9</td>
<td>19.6</td>
</tr>
<tr>
<td>Drug</td>
<td>34.0</td>
<td>16.1</td>
</tr>
<tr>
<td>Person</td>
<td>67.9</td>
<td>51.8</td>
</tr>
<tr>
<td>Sexual</td>
<td>5.7</td>
<td>16.1</td>
</tr>
<tr>
<td>Weapon</td>
<td>30.2</td>
<td>10.7</td>
</tr>
<tr>
<td>Fraud</td>
<td>28.3</td>
<td>5.4</td>
</tr>
<tr>
<td>Traffic/DUI</td>
<td>65.8</td>
<td>14.3</td>
</tr>
<tr>
<td>Other</td>
<td>58.5</td>
<td>12.5</td>
</tr>
</tbody>
</table>

<sup>a</sup>Statistical analyses reveal significant difference between chronic and first-time offenders.

<sup>*</sup>Numbers do not equal 100 due to individuals committing more than one type of crime.

CO = chronic offender, FTO = first-time offender

Table 3

*Institutional Behaviour Data*

<table>
<thead>
<tr>
<th>Variables</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>% in work program</td>
<td>24.5</td>
<td>17.9</td>
</tr>
<tr>
<td>% participated in tx</td>
<td>20.8</td>
<td>23.2</td>
</tr>
<tr>
<td>% received a misconduct</td>
<td>24.5</td>
<td>23.2</td>
</tr>
</tbody>
</table>

CO = chronic offender, FTO = first-time offender
Stages of Change

Previous research indicates two ways to use the stages of change questionnaire to classify individuals according to stage of change: 1) a multidimensional scaling approach that evaluates individuals on each of the stages of change, therefore providing a stages of change profile that is unique to each respondent; and, 2) a categorical approach that places respondents into discrete stages. Due to the possible limitations of the categorical approach, both methods were calculated in the current study.

Means for the full sample and for the two chronicity groups are illustrated in Table 4. In the full offender sample, using the change profile, offenders scored the highest on the contemplation subscale, followed by the action, maintenance, and precontemplation subscales. When the categorical approach was applied, most participants would actually be labeled as in the action stage, followed then by the contemplation stage. Fewer than ten individuals overall fell in either the maintenance or precontemplation stages.

Examining stages of change separately for each group of offenders revealed that CO scored highest on the contemplation subscale, followed by the action, maintenance, and lastly the precontemplation subscale. FTO scored similarly with highest scores in the contemplation and action, followed by maintenance and then precontemplation stages. Independent t-tests demonstrate differences between groups on the precontemplative ($t(99) = -2.9, p < .01$) and maintenance stages of change ($t(99) = 3.4, p < .01$). The results were slightly different using the categorical approach: CO fell in the action stage first, followed by the contemplation stage with only two individuals falling in the precontemplation stage and one in the maintenance stage.
FTO showed the same pattern of categorical labeling with the majority of individuals falling in the action stage followed by contemplation, precontemplation and maintenance stages. The majority of offenders in both groups fell within two of the stages and only a few individuals could be labeled as precontemplative or in maintenance. Consequently, categorical results can be considered highly kurtotic which can make meaningful interpretations challenging. When examining stage of change in this manner, there were no statistically significant differences between groups. These results fail to support the hypothesis that CO would differ from FTO in their readiness for change, with a greater proportion of CO in the earlier stages of change.

Table 4

*Stages of Change Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>All</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile scores (Means(SD))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precontemplation*</td>
<td>16.8 (5.8)</td>
<td>15.2 (5.7)</td>
<td>18.4 (5.5)</td>
</tr>
<tr>
<td>Contemplation</td>
<td>31.2 (5.3)</td>
<td>32.1 (5.0)</td>
<td>30.2 (5.5)</td>
</tr>
<tr>
<td>Action</td>
<td>30.6 (5.8)</td>
<td>31.2 (6.0)</td>
<td>30.1 (5.5)</td>
</tr>
<tr>
<td>Maintenance*</td>
<td>24.4 (6.8)</td>
<td>26.6 (5.8)</td>
<td>22.2 (7.0)</td>
</tr>
</tbody>
</table>

Statistical analyses reveal significant difference between chronic and first time offenders.

CO = chronic offender, FTO = first-time offender

Processes of Change

The Processes of Change Questionnaire (PCQ) addresses specific processes of change outlined in the TTM. In the full offender sample, scores on the processes of change subscales were compared to change scores. Three processes, namely, self liberation, self and social re-evaluation, were negatively correlated to precontemplation scores. Almost all of the processes, with the exception of ‘helping’, were positively correlated to the contemplation and action scores. Self re-evaluation and contingency management subscales were positively correlated to
maintenance scores. Table 5 outlines the means and standard deviations of the processes of change questionnaire and Table 6 illustrates correlations between the process of change and stage of change scores.

When the scores on the processes were compared to change scores separately in the chronic group, higher precontemplation scores were also negatively correlated to self-liberation, self re-evaluation and social re-evaluation. Contemplation, action and maintenance scores were positively correlated to all of the processes of change, with the exception of helping which was correlated to action scores only. When the processes of change were examined in the FTO group, the results were much different. Scores on the precontemplation items were negatively correlated to self and social re-evaluation processes. Higher scores on contemplation were positively correlated to higher scores on self re-evaluation only. There were no significant correlations between scores on the action stage and the processes. Lastly, maintenance scores were positively correlated to self re-evaluation and contingency management. These results represent moderate relationships between variables but squared correlations ($r^2$ range from .09-.22) reveal relatively low ability to explain variation. Note that in an attempt to manage error in this analysis, the critical value for significance was set at .01 which is more conservative than a .05 criterion. Therefore, the probability of a type I error in this case was 1%. This adjustment of the critical value was made for all correlational analyses in this study.

When these seven subscales were compared between offender groups, only the processes labeled self liberation and helping were utilized differentially. This means that FTO were more committed to change, had greater belief they can change and were more likely to report having
someone they could talk to about their criminal behaviour problems and who was supportive of their efforts to change. Tables 5 and 6 outline the processes of change data.

Table 5

*Processes of Change Data*

<table>
<thead>
<tr>
<th>Variable</th>
<th>All</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consciousness raising</td>
<td>11.2 (4.2)</td>
<td>11.0 (4.2)</td>
<td>11.4 (4.2)</td>
</tr>
<tr>
<td>Self liberation*</td>
<td>14.3 (3.4)</td>
<td>13.5 (3.6)</td>
<td>14.9 (3.1)</td>
</tr>
<tr>
<td>Stimulus control</td>
<td>11.9 (3.9)</td>
<td>11.6 (4.0)</td>
<td>12.2 (3.8)</td>
</tr>
<tr>
<td>Self re-evaluation</td>
<td>17.8 (4.2)</td>
<td>18.2 (4.2)</td>
<td>17.4 (4.1)</td>
</tr>
<tr>
<td>Social re-evaluation</td>
<td>14.9 (3.8)</td>
<td>14.9 (4.9)</td>
<td>14.9 (3.6)</td>
</tr>
<tr>
<td>Contingency management</td>
<td>10.5 (3.9)</td>
<td>10.1 (3.9)</td>
<td>11.0 (3.9)</td>
</tr>
<tr>
<td>Helping*</td>
<td>13.0 (4.5)</td>
<td>12.0 (4.5)</td>
<td>13.9 (4.4)</td>
</tr>
</tbody>
</table>

*Statistical analyses reveal significant difference between chronic and first-time offenders.*

CO = chronic offenders, FTO = first-time offenders

Table 6

*Correlations Between Process of Change and Stage of Change Scores in the Full Sample*

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>SL</th>
<th>SC</th>
<th>SER</th>
<th>SOR</th>
<th>CM</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.16</td>
<td>-.28*</td>
<td>-.19</td>
<td>-.45*</td>
<td>-.47*</td>
<td>-.07</td>
<td>.03</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.33*</td>
<td>.33*</td>
<td>.30*</td>
<td>.41*</td>
<td>.36*</td>
<td>.26</td>
<td>.02</td>
</tr>
<tr>
<td>Action</td>
<td>.38*</td>
<td>.32*</td>
<td>.35*</td>
<td>.39*</td>
<td>.34*</td>
<td>.33*</td>
<td>.19</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.25</td>
<td>.08</td>
<td>.23</td>
<td>.36*</td>
<td>.14</td>
<td>.35*</td>
<td>-.07</td>
</tr>
</tbody>
</table>

*p < .01, two-tailed*

CR = consciousness raising, SL = self liberation, SC = stimulus control, SER = self re-evaluation, SOR = social re-evaluation, CM = contingency management, H = helping

Possible Selves

Contrary to the study hypotheses, chronic and FTO reported fairly equal numbers of hoped-for possible selves and were equally challenged to report feared possible selves. Also, there was no significant difference between groups on which categories of PSs they endorsed or the numbers
of categories highlighted for both hoped-for and feared PSs. The number of individuals whose PSs had balance between responses categorized as delinquent was relatively equal in each group with approximately half of each group having balance. Participants also reported the likelihood and degree hoped-for or feared scores for each of their PSs responses. The groups did not differ significantly on these variables. Table 7 displays the PSs data below.

Table 7

Possible Selves Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hoped-for PSs</td>
<td>6.5 (2.2)</td>
<td>6.9 (2.4)</td>
</tr>
<tr>
<td>Number of feared PSs</td>
<td>4.7 (2.4)</td>
<td>4.6 (2.2)</td>
</tr>
<tr>
<td>Number of categories in hoped-for PSs</td>
<td>3.8 (1.3)</td>
<td>3.8 (1.2)</td>
</tr>
<tr>
<td>Number of categories in feared PSs</td>
<td>3.3 (1.4)</td>
<td>3.0 (1.5)</td>
</tr>
<tr>
<td>Avg. likelihood ratings for hoped-for PSs</td>
<td>5.7 (1.2)</td>
<td>5.9 (0.9)</td>
</tr>
<tr>
<td>Avg. likelihood ratings for feared PSs</td>
<td>3.6 (1.4)</td>
<td>3.3 (1.5)</td>
</tr>
<tr>
<td>Avg. hope for hoped-for PSs</td>
<td>3.9 (0.3)</td>
<td>3.8 (0.3)</td>
</tr>
<tr>
<td>Avg. fear for feared PSs</td>
<td>3.2 (0.9)</td>
<td>3.1 (0.8)</td>
</tr>
<tr>
<td>Balanced delinquent PSs (%)</td>
<td>49</td>
<td>50</td>
</tr>
</tbody>
</table>

CO = chronic offenders, FTO = first-time offenders

Release and Reintegration Inventory, Expectations of Time Incarcerated and Hope

The Release and Reintegration Inventory (RRI) was used to query offenders about their expectations after release from the correctional facility relating to their personal, social, and behavioural arenas of their lives. This measure was intended to provide concurrent validity for the PSs questionnaire by querying participants about their expectations of the future once they are released into the community. Furthermore, the RRI asked participants about behaviours specifically related to criminal activity. This measure showed clear differences between the groups with CO consistently scoring higher on every subscale. Only the excitement/boredom items failed to reach statistical significance for differences between groups using independent
samples t-tests. A full description of the scores on the individual subscales can be found below in Table 8.

The Expectations of Time Incarcerated (ETI) scale was designed specifically for the purposes of this study to capture the expectations of participants on their behaviour while incarcerated and once released which were not explicitly queried in the RRI. Results show that many offenders were optimistic about their time in jail: they planned to participate in treatment, upgrade their education, and get along with other people. They were also quite positive about their behaviour once released: they felt that they will have control over their behaviour in order not to reoffend and engage in further illegal activities. It should be noted that the researcher observed that inmates were hesitant when answering questions that explicitly requested information about reoffending; therefore, the results should be viewed with caution. Overall, this measure could not differentiate between groups of offenders based on their responses with the exception of the item that asked offenders how far away their release date felt: FTO were more likely to report that their release date felt far away, $\chi^2(1, N=104) = 4.66, p < .05$. See Table 8 for a description of the scores on the ETI questionnaire.

The offenders reported fairly average overall hope scores (Snyder, 2002) with FTO obtaining significantly higher total hope scores, $t(113) = -2.12, p < .05$. Between groups, CO had significantly lower agency scores, $t(104) = -4.27, p = .00$, and relatively equal scores on the pathways subscale. Table 8 displays the data for this scale.
Table 8

**RRI, ETI and Hope Data**

<table>
<thead>
<tr>
<th>Variable</th>
<th>CO</th>
<th>FTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope Total Score*</td>
<td>45.6 (10.2)</td>
<td>51.1 (7.9)</td>
</tr>
<tr>
<td>Pathways</td>
<td>25.1 (5.1)</td>
<td>25.9 (4.6)</td>
</tr>
<tr>
<td>Agency*</td>
<td>20.5 (7.1)</td>
<td>25.4 (4.4)</td>
</tr>
<tr>
<td><strong>RRI subscales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioural Impulsivity*</td>
<td>6.3 (1.9)</td>
<td>5.2 (2.3)</td>
</tr>
<tr>
<td>Social Pressure and Associates*</td>
<td>4.6 (2.4)</td>
<td>2.9 (2.3)</td>
</tr>
<tr>
<td>Excitement/Boredom</td>
<td>5.4 (2.5)</td>
<td>4.6 (2.4)</td>
</tr>
<tr>
<td>Negative Affect*</td>
<td>5.9 (1.6)</td>
<td>5.0 (2.0)</td>
</tr>
<tr>
<td>Social Alienation*</td>
<td>4.7 (2.5)</td>
<td>3.4 (2.6)</td>
</tr>
<tr>
<td>Substance Abuse*</td>
<td>5.6 (2.4)</td>
<td>4.4 (2.8)</td>
</tr>
<tr>
<td>Financial/Employment*</td>
<td>4.7 (2.4)</td>
<td>2.8 (2.4)</td>
</tr>
<tr>
<td>Interpersonal &amp; Family Concerns*</td>
<td>4.6 (2.5)</td>
<td>2.8 (2.8)</td>
</tr>
<tr>
<td>Leisure*</td>
<td>4.9 (2.2)</td>
<td>3.8 (2.1)</td>
</tr>
</tbody>
</table>

| ETI % - Expect to:               |             |             |
| Break rules                      | 9.6         | 5.9         |
| Participate in treatment         | 70.6        | 78.8        |
| Upgrade education                | 42.3        | 38.5        |
| Get along with inmates           | 94.1        | 96.2        |
| Get along with staff             | 86.3        | 90.4        |
| Breach probation/parole          | 7.8         | 5.8         |
| Reoffend, not get caught         | 23.5        | 11.8        |
| Reoffend, come back to jail      | 9.8         | 2.0         |
| Have control over behaviour      | 90.4        | 96.2        |
| Work hard not to reoffend        | 92.3        | 96.2        |
| Release date feels far away*     | 38.5        | 59.6        |
| Release date feels soon*         | 61.5        | 40.4        |

*Statistical analyses reveal significant difference between chronic and first time offenders.

CO = chronic offenders, FTO = first-time offenders

**Transtheoretical Model and Possible Selves**

Analyses investigating the relationship between stage of change and PSs were conducted to determine if criminal offenders’ visions of their future selves was related to their readiness for
change. Overall in the entire sample there were statistically significant relationships between stage of change and PSs variables that confirmed some study hypotheses: precontemplation scores were negatively related to the number of categories endorsed for hoped-for PSs; and, contemplation, action and maintenance scores were positively correlated to the number of PSs reported for both hoped-for and feared, plus the number of categories in either the hoped-for or feared PSs. Again, significance was set at the conservative critical value of .01 to reduce type I error in this analysis. The results displayed in Table 9 below demonstrate moderate relationships between variables.

Table 9

<table>
<thead>
<tr>
<th></th>
<th>#Hope</th>
<th>#Fear</th>
<th>LH</th>
<th>HH</th>
<th>LF</th>
<th>FF</th>
<th>#HCat</th>
<th>#FCat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.14</td>
<td>-.15</td>
<td>-.07</td>
<td>.07</td>
<td>-.06</td>
<td>-.04</td>
<td>-.28*</td>
<td>-.20</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.38*</td>
<td>.39*</td>
<td>.26*</td>
<td>-.07</td>
<td>-.02</td>
<td>.02</td>
<td>.35*</td>
<td>.30*</td>
</tr>
<tr>
<td>Action</td>
<td>.33*</td>
<td>.26</td>
<td>.37*</td>
<td>.06</td>
<td>.00</td>
<td>.15</td>
<td>.33*</td>
<td>.12</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.36*</td>
<td>.35*</td>
<td>.09</td>
<td>-.18</td>
<td>.14</td>
<td>.13</td>
<td>.12</td>
<td>.22</td>
</tr>
</tbody>
</table>

*p< .01, two-tailed

#Hope = total number of hoped-for PSs, #Fear = total number of feared PSs, LH = average likelihood rating of hoped-for PSs, HH = degree of hope for hoped-for PSs, LF = average likelihood rating of feared PSs, FF = degree of fear for feared PSs, #HCat = total number of categories endorsed for hoped-for PSs, #FCat = total number of categories endorsed for feared PSs

Results were also conducted by group. With CO, scores on the contemplation, action, and maintenance stages of change were positively correlated to the total number of hoped-for PSs reported. Similarly, contemplation and maintenance scores were positively correlated to the total number of feared PSs reported. Furthermore, contemplation, action, and maintenance stages of change scores were also positively correlated to average likelihood ratings of hoped-for PSs. Lastly, scores the contemplation and action stages of change were correlated to the number of
hoped-for categories endorsed, while contemplation and maintenance scores correlated to the number of feared categories highlighted. Table 10 displays the results listed here. In the FTO group, there were no significant correlations between stage of change scores and PSs variables.

Table 10

Correlations Between Stage of Change and Possible Selves Variables for Chronic Offenders

<table>
<thead>
<tr>
<th></th>
<th>#Hope</th>
<th>#Fear</th>
<th>LH</th>
<th>HH</th>
<th>LF</th>
<th>FF</th>
<th>#HCat</th>
<th>#FCat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.29</td>
<td>-.21</td>
<td>-.27</td>
<td>.09</td>
<td>.04</td>
<td>.01</td>
<td>-.32</td>
<td>-.23</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.56*</td>
<td>.50*</td>
<td>.41*</td>
<td>-.21</td>
<td>-.23</td>
<td>.02</td>
<td>.52*</td>
<td>.50*</td>
</tr>
<tr>
<td>Action</td>
<td>.38*</td>
<td>.34</td>
<td>.44*</td>
<td>-.03</td>
<td>-.05</td>
<td>.18</td>
<td>.45*</td>
<td>.25</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.52*</td>
<td>.44*</td>
<td>.38*</td>
<td>-.05</td>
<td>-.18</td>
<td>.06</td>
<td>.34</td>
<td>.39*</td>
</tr>
</tbody>
</table>

*p< .01, two-tailed

#Hope = total number of hoped-for PSs, #Fear = total number of feared PSs, LH = average likelihood rating of hoped-for PSs, HH = degree of hope for hoped-for PSs, LF = average likelihood rating of feared PSs, FF = degree of fear for feared PSs, #HCat = total number of categories endorsed for hoped-for PSs, #FCat = total number of categories endorsed for feared PSs

Pearson r correlations revealed statistically significant relationships between the processes of change scores and the PSs data in the entire sample. For example, all processes of change, with the exception of helping and social re-evaluation, demonstrated a positive correlation to the total number of hoped-for PSs. Similarly, all but the helping process was positively correlated to the total number of categories for hoped-for PSs highlighted. Three processes were positively correlated to the total number of feared PSs generated, four processes were positively correlated to likelihood ratings of hoped-for PSs, and one process was negatively correlated to likelihood ratings for feared PSs and the number of feared categories mentioned. Helping was positively correlated to the degree of hope for the hoped-for PSs. As was completed in previous correlational analyses, type I error was reduced by setting a more conservative critical value. See Table 11 for a full display of the correlations.
Table 11

Correlations Between Processes of Change and Possible Selves Variables in the Full Sample

<table>
<thead>
<tr>
<th></th>
<th>#Hope</th>
<th>#Fear</th>
<th>LH</th>
<th>HH</th>
<th>LF</th>
<th>FF</th>
<th>#HCat</th>
<th>#FCat</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>.33*</td>
<td>.28*</td>
<td>.33*</td>
<td>.09</td>
<td>-.26</td>
<td>.14</td>
<td>.28*</td>
<td>.11</td>
</tr>
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<td>.86</td>
<td>-.26</td>
<td>.15</td>
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<td>.19</td>
</tr>
<tr>
<td>SC</td>
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<td>.26*</td>
<td>.31*</td>
<td>.07</td>
<td>-.31*</td>
<td>.04</td>
<td>.30*</td>
<td>.17</td>
</tr>
<tr>
<td>SER</td>
<td>.34*</td>
<td>.35*</td>
<td>.17</td>
<td>-.01</td>
<td>-.06</td>
<td>.20</td>
<td>.35*</td>
<td>.30*</td>
</tr>
<tr>
<td>SOR</td>
<td>.25</td>
<td>.25</td>
<td>.16</td>
<td>.04</td>
<td>-.11</td>
<td>.06</td>
<td>.29*</td>
<td>.20</td>
</tr>
<tr>
<td>CM</td>
<td>.31*</td>
<td>.20</td>
<td>.31*</td>
<td>.06</td>
<td>-.16</td>
<td>.24</td>
<td>.29*</td>
<td>.12</td>
</tr>
</tbody>
</table>

*p< .01, two-tailed

CR = consciousness raising, SL = self liberation, SC = stimulus control, SER = self re-evaluation, SOR = social re-evaluation, CM = contingency management, H = helping, #Hope = total number of hoped-for PSs, #Fear = total number of feared PSs, LH = average likelihood rating of hoped-for PSs, HH = degree of hope for hoped-for PSs, LF = average likelihood rating of feared PSs, FF = degree of fear for feared PSs, #HCat = total number of categories endorsed for hoped-for PSs, #FCat = total number of categories endorsed for feared PSs

When groups were examined individually, CO’ responses on each of the seven processes, minus the helping items, showed a positive relationship with the number of feared PSs reported by participants. Similarly, five processes – consciousness raising, self liberation, self re-evaluation, social re-evaluation and contingency management – were positively correlated to the number of hoped-for PSs reported. Five scales, namely consciousness raising, self liberation, stimulus control, self re-evaluation, and contingency management, were positively correlated to average likelihood ratings of hoped-for PSs. The only significant correlation to the helping process of change was the average hope rating for hoped-for PSs. Lastly, the number of categories endorsed for feared PSs were positively correlated to all of the processes of change, while many but not all
of these processes were positively correlated to the number of categories endorsed for hoped-for PSs.

When these analyses were repeated for the FTO group, there were slightly fewer significant correlations found. Only the self re-evaluation process was related to the total number of feared PSs reported and four processes, namely consciousness raising, stimulus control, self re-evaluation, and contingency management, showed positive correlations to the number of hoped-for PSs reported. Consciousness raising was also positively correlated with average likelihood ratings of hoped-for PSs, as well as average likelihood ratings of feared PSs. Stimulus control was also correlated to likelihood ratings for feared PSs and contingency management showed a positive relationship with average fear ratings for feared PSs. Lastly, consciousness raising, stimulus control and self re-evaluation were positively correlated to the number of categories endorsed for hoped-for PSs.

**Transtheoretical Model, Possible Selves and Behaviour**

Analyses were conducted to determine if there were relationships between stage of change and PSs variables with institutional behaviour, namely misconducts and treatment participation. Despite almost a quarter of all offenders participating in some type of treatment program and similar numbers receiving a formal misconduct while incarcerated, there were no significant correlational relationships between behaviour, readiness for change, or PSs variables as was originally predicted. A hierarchical linear regression analysis was conducted to examine the contributions of the relevant variables to the total number of misconducts received by offenders. The model variables were entered in three blocks as independent variables using the enter
method and .05 criteria for variable entry. The first block included chronicity, the second included the profile scores on each of the stages of change, and the third block included the PSs variables. Results from this analysis revealed that none of the variables were significant contributors to the number of misconducts received among this sample. The analysis was repeated with participation in programming and treatment by offenders. Results from this analysis are presented in Table 12. The data in this table reveals that scores on the precontemplation and contemplation stages were unique contributors and collectively explained approximately 18% of the variance of participation in treatment programs. Upon further investigation, it was discovered that LSI-OR scores in the entire sample were positively correlated to the number of misconducts offenders received, $r = .29, p < .01$.

Table 12

*Regression Analysis for Treatment Participation in the Full Sample*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$B$</th>
<th>SEB</th>
<th>$\beta$</th>
<th>$p$</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.05</td>
<td>.02</td>
<td>-.31</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Contemplation</td>
<td>-.06</td>
<td>.03</td>
<td>-.35</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.18</td>
</tr>
</tbody>
</table>

**Results Summary**

The outcome of this study includes data that both supports and contradicts the original hypotheses that were made in relation to the research questions posed. When examining criminal chronicity, offenders were not differentiated by stage of change when using the categorical method but did show differences on profile scores for the two extreme stages – precontemplation and maintenance. Interestingly, both offender groups reported similar numbers of PSs for hoped-for and feared categories. Other PSs variables also showed similar response patterns. This is inconsistent with the hypothesis that criminal chronicity would be negatively correlated with the
dimensions of possible selves. However, when visions of the future were compared with readiness for change data, the hypothesis that all offenders would produce differing numbers of negative and positive possible selves based on the stage of change to which they belonged was somewhat supported: offenders with higher scores on the earliest stage of change reported less complex hoped-for PSs, while those individuals with higher scores on the later stages of change produced greater PSs in general that were more complex. The last study hypothesis that proposed a relationship between stages of change, PSs and institutional behaviour could not be established.
Chapter 4: Discussion

Resistance to change is pervasive and a natural human reaction. Self-protectionists argue that individuals have an inherent need for personal coherence that acts in opposition to change and that resistance should not be considered pathological but expected (Mahoney, 1991). In an effort to study this, the Transtheoretical Model was designed to help treatment providers understand the change process and resistance to change. The TTM characterizes how individuals make changes in their lives through the integration of understanding individuals’ readiness for change, method and progress. It is theorized that knowing these aspects can assist treatment providers in their efforts to help individuals make positive behaviour changes. While the stages of change component of this model has been extensively researched and applied to a diversity of behaviours, it has also been heavily criticized and the validity questioned. Additionally, the processes that people use to make changes are less well understood and often ignored in the research. Efforts have been made in an attempt to improve the TTM by integrating it with other complementary models of behaviour change but research in this area is limited.

Possible Selves is one such model that could complement the TTM. PSs include representations of ourselves in the future and provide a link from our current self to our future self. Cross and Markus (1991) suggested that these thoughts and images actually act like a guide for us to follow and have the ability to influence our current cognitive capacity to filter incoming stimuli, interpret data we perceive, guide decision-making and compel our actions thereby influencing our motivation and directing our growth. Researchers have worked to acquire empirical evidence to support these claims, mainly in adolescent and young adult samples; however, this model has not yet become a forerunner in the change literature.
The goal of the current study was to understand behaviour change in criminal offenders in terms of the above mentioned models. The research aimed to empirically investigate what the TTM looks like in a general population of criminal offenders. Similarly, what does the PSs Model look like? Research questions inquired about the possibility that the PSs Model might add to and improve the TTM. Taken a step further, it was hypothesized that these models could be used to predict behaviour change, measured using institutional behaviour data. The current study attempted to reduce the number of limitations found in previous studies using the TTM model in criminal offenders in three main ways. First, in addition to deriving categorical data of stages of change, profile scores were also calculated and used as the primary variables of readiness for change. This method of scoring stages of change seems to be more useful in characterizing readiness for change. Second, in an effort to increase the robustness of the TTM data collected and ensure greater generalizability, the URICA was administered as the stage of change questionnaire. This tool is now the most common stage of change measure (Eckhardt et al., 2004) and has been subjected to the greatest scrutiny to ensure the best possible psychometric properties. It has also been tested specifically with male offenders and results suggest that it performed moderately well (Polaschek, Anstiss, & Wilson, 2010). Lastly, critics of the TTM as applied to incarcerated offenders have indicated that the artificial environment reduces the ability to measure true behaviour change. This study used measurable data from misconducts and treatment participation as indicators of behaviour. Previous research has shown that institutional behaviour can be used as proxy for behaviour once released into the community (Gendreau et al., 1997) and therefore it is reasonable that the institutional behaviour is related to actual behaviour change.
The current study also represents a novel approach of investigating the possibility of PSs contributing to the TTM with criminal offenders. No one has queried adult offenders about their PSs for their future in general despite evidence that supports its use with young offenders. Additionally, only a handful of studies have begun to test the PSs Model alongside the elements of the TTM (see Dunkel et al, 2006). These studies found significant relationships between these models and suggested that “future research in [this] area may be fruitful” (Dunkel et al., 2006, p.187).

Criminal offenders were chosen for this project because offenders represent a group of individuals who are unable to desist from illegal behaviour and make positive life changes. Moreover, Canadian provincial correctional institutions are plagued by a revolving door of repeat offenders; therefore, understanding behaviour change amongst criminal offenders is particularly important due to the tremendous financial, social and moral burden this type of behaviour places on our society.

**Criminal Chronicity and the Transtheoretical Model of Behaviour Change**

Stages of change, part of the TTM, have been examined in specific offender populations such as sex offenders and domestic violence perpetrators. In this study of general offenders, individuals tended to fall into either the contemplation or action stage of change, with only a few individuals who could be categorized as precontemplative or in the maintenance stage. Analyses were conducted to see if CO differed in their readiness for change compared to FTO; generally speaking, could offenders be differentiated by stages of change as outlined by the
Transtheoretical Model. It was hypothesized that criminal chronicity would be negatively correlated with stage of change, with repeat offenders falling in the earlier stages of change. Unfortunately, highly kurtotic results made meaningful interpretation difficult. As was found in the large sample, when analyses were conducted by chronicity, most offenders in either group reported being aware of their problematic behaviour (contemplative) and in the process of making change (taking action). Therefore, using the categorical method of scoring for the stages of change questionnaire in this correctional sample was not as useful for differentiating offenders as predicted. Analyses, however, did reveal significant differences between groups on the profile scores for the precontemplation and maintenance stages. More specifically, offenders who were in jail for the first time were less likely to feel that they had a problem related to criminal behaviour. Additionally, these same offenders were less likely to be maintaining their efforts of previously made changes compared to CO. Despite the fact that very few participants could be labeled as being precontemplative or in maintenance using the categorical method, the profile score results may support the use of the stages of change questionnaire in a criminal offender population as using this method did show some differentiation between groups. The profile pattern of scores suggests that most offenders are willing to admit that their criminal behaviour is problematic and have begun thinking about making some changes or have already started taking action. Profile analyses in other research would suggest that based on this pattern of scores, most offenders may actually be in the preparation stage as they score high on both contemplation and action (Cohen, Glaser, Calhoun, Bradshaw, & Petrocelli, 2005). This may be true for some of the offenders who are ready to make changes but have not yet been able to do so because of the limitations posed by being incarcerated. By group, the results indicate that FTO are more likely to deny they have a problem and less likely to have made changes already. This may be due to
the fact that some of the FTO are actually one time offenders who got caught the first time they engaged in a criminal act and therefore do not have an ongoing criminal behaviour problem. More realistically, these results suggest that it is possible these FTO have yet to admit they have a problem that needs attention and are only at the beginning of their behaviour change journey. With regards to CO, these results highlight the fact that most of these repeat offenders know they have a problem, are ready to make changes and some are even working on maintaining the changes they have already made. Given that very few of these CO could be classified as exclusively in maintenance, these results also suggest that regardless of their readiness for change, these individuals are unable to sustain positive changes made and may cycle through the stages of change several times.

The study findings on readiness for change are consistent with other research (e.g., Burrowes & Needs, 2009) on stages of change in offenders and should not necessarily have been surprising given the criticisms outlined earlier regarding the categorical method. There are several reasons that could explain the findings in this study. First, this may be because of the stages component of the TTM. The results show that dividing the offenders into discrete categories of readiness did not produce a distribution of individuals but rather lumped everyone into two of the four stages. While this may be an accurate categorization, it seems more likely that the sample is not so homogenous in terms of readiness for change. Consequently, when attempting further analyses with these categorizations, the data are limited. Conversely, the data was more meaningful when profile scores were used. In fact, offenders were different on the extreme stages of change, namely precontemplation and maintenance. Furthermore, classifying incarcerated individuals as in preparation seems logical as their custody sentence may have shifted them to view their
criminal behaviour as a problem but since they are in an artificial environment, they are less able to begin taking the appropriate steps to make behaviour change. Perhaps the fact that profile scores were more useful in this sample of general offenders should be noted by researchers who plan to use stages of change in a similar sample.

One reason that could explain the limited ability of the stages of change to more effectively discriminate chronicity of offenders is the way in which the stages of change questionnaire was applied to this offender group. In the current study, offenders were asked to rate their criminal behaviour in general. But, as Casey et al. (2005) suggested in their assessment of stage of change tools used in offender populations, it may be that the “problem behavior is not clearly identified” (p. 162). Furthermore, treatment providers know that individuals may be in one stage of change for behaviour A but in another stage of change for behaviour B. For example, someone might be taking active steps to curb their addiction to heroin but unwilling to admit that alcohol is also a problem for him. Many of the offenders in this study had diverse criminal histories, meaning that they not only engaged in crimes against property but also against persons. Additionally, 73% of the entire sample admitted to abusing drugs and/or alcohol in their lives. Therefore, the individuals in this study may also have struggled with substance abuse problems that led to criminal involvement on top of other criminal behaviour. Consequently, asking offenders to answer questions about their criminal behaviour in general may have led to a leveling off effect whereby the scores reflect an average of readiness for change across many types of behaviour. Researchers have attempted to solve this problem by altering the original questionnaire to specifically address the behaviour they want to measure. For example, Levesque, Gelles, and Velicer (2000) changed the stages of change questionnaire to specifically inquire about
behaviours associated with domestic violence. The authors were able to demonstrate that their measure had sound psychometric properties and provided support for the use of TTM concepts in domestic violence perpetrators. Tierney and McCabe (2001) also successfully altered the wording of the stages of change questionnaire to add the term “sexual” in order to address sexual criminal offending. However, McMurran et al. (1998) attempted to change the wording from “my drinking” to “my offending” and could not find support for the new measure but concluded that the wording was too vague.

There is further reason to be cautious when interpreting stage of change data because this model was originally created for smoking, a more simple behaviour (see Casey et al., 2005; McMurran et al., 1998). Attempts to quit smoking are very cyclical and smoking is typically a frequent behaviour. When this model has been successfully adapted, it has often been to other behaviours that occur frequently and efforts to reduce the behaviour similar in nature to quitting smoking, such as weight loss and exercising. As McMurran et al. (1998) point out, unlike smoking or unhealthy eating, criminal behaviour occurs much less often. Plus, while smoking and unhealthy eating occurs as the result of a craving, the types of criminal behaviour found most in CO is often reactive in nature, not planned or instrumental. Not only is the behaviour often reactive, but many incidences of crime occur within an interpersonal dynamic rather than isolation (McMurran et al., 1998). This means that the occurrence of some types of crime depend on the interactions between the offender and other individuals, not solely on the intentions of the offender himself. Similarly, Burrowes and Needs (2009) argued that the TTM “over simplifies and over emphasizes the role of decision making by the individual, and under emphasizes the role of contextual factors” (p. 42). As a result, it is possible that criminal offending may be too
complex a behaviour to adequately be explained by the TTM as has been suggested by other authors (see McMurran et al., 1998).

The arguments above that touch on stages, measurement, and simplicity have been applied to many types of behaviour and are not necessarily specific weaknesses of applying the TTM to criminal activity. However, there are other possible factors to consider that may have influenced the results in this study that are more unique to criminal offenders. A characteristic of criminal offenders that differentiates them from other individuals attempting behaviour change is the artificial environment that they are often found in. Living in a correctional setting undoubtedly affects the dynamics of change and one’s thoughts about his readiness for change. This criticism was highlighted by both McMurran et al. (1998) and Tierney and McCabe (2001) in their assessment of the usefulness of stages of change in offenders. These authors note that incarceration limits the opportunities for offenders to use all of the processes of change that may be helpful in transitioning from one stage to the next, as well as applying their intentions to change in a real-world situation. This is particularly true for individuals in the later stages of change when change becomes more active in nature. For example, true maintenance cannot be assessed if the individual has few chances to engage in the behaviour (DiClemente et al., 2004). It may be that some offenders feel that they have changed because they are not exposed to the triggers, negative influences, and stresses they normally encounter in their daily lives in the community. This would be true for the sample of offenders in this study. Many of the participants were in the action stage of change but few could be given the label of in maintenance possibly because of the fact that they were incarcerated and unable to fully transition into the last stage of change in a realistic manner. Again, efforts have been made to
adapt the stages of change questionnaire to offenders in correctional settings by eliminating the maintenance items; however, the research does not indicate that this is an appropriate avenue (Burrowes & Needs, 2009).

Another factor that may have influenced the results of the current study is forced change: do the pressures of jail force change for some individuals yet not actually produce meaningful behaviour changes? Inmates receive strong pressure and are even coerced to enter treatment and/or participate in correctional programming – often as a prerequisite to receiving early release. This pressure may actually work to reduce offenders’ willingness to engage in treatment (e.g., Day et al., 2004; Williams & Strean, 2002). Moreover, these offenders could be responding to inquiries about their readiness for change in a way that suggests actions are being taken despite the fact that real change is not occurring. There are tremendous benefits for criminal offenders who are able to convince others that they are making efforts to change their ways and work on their problem. Day et al. (2004) suggest that pre-treatment programs designed to improve readiness for change may work to increase the outcome for offenders who feel coerced into participating in treatment. Overall, the fact that inmates are under intense pressure to change should be considered when attempting to interpret readiness for change data.

In summary, the current study found that most offenders could be categorized dichotomously as either contemplative or taking action according to the stages of change component of the TTM. Categorically, stage of change was unsuccessful in differentiating offenders based on chronicity despite theoretical assumptions of differences in readiness for change amongst offenders with varying criminal histories. Conversely, profile scores did reflect slight differences between
groups at the extremes of the stages of change and would suggest that offenders are actually in
the preparation stage of change. Possible weaknesses in the stage of change tool used in this
study may have played a role in the findings and limited the ability to obtain a true
characterization of the readiness for change in the sample. Levesque et al. (2000) assert that
measure development is critical before one is able to accurately examine the validity of applying
the TTM to criminal populations. While efforts have been made to alter the original
questionnaire, more work needs to be done to adapt this measure to offender populations before
final decisions can be made on the usefulness of measuring stage of change in this group.
Several additional factors, namely, the pressures of the criminal justice system on offenders, the
artificial environment inmates are in, and the characteristics of criminal behaviour, may also play
into the complexity of measuring readiness for change – beyond tool development – in offenders
and limit the applicability of the TTM to these individuals.

This study also focused on the processes of change. According to the TTM, individuals will
utilize different processes of change as they progress through the stages of change. In this study
there was less differentiation of change status by the processes. Moreover, the correlations were
modest, meaning that stage of change scores were unable to predict much of the variance found
within the process of change scores. Specifically, higher precontemplation scores were
negatively correlated to self-liberation, self re-evaluation and social re-evaluation. This seems
consistent with the description of precontemplation in that individuals in this stage are less likely
to be evaluating the self and their social environments, and that they are not yet committed to
changing. The three remaining stages of change were positively correlated to many of the
processes. It seems that offenders who acknowledge that they have a problem, are taking action
and/or are making efforts to maintain changes in criminal behaviour are utilizing many of the processes of change outlined in the TTM. Previous research has shown that individuals who embark on behaviour change on their own tend to use more processes of change than individuals who are in formal treatment (Prochaska, 1979). Since the majority of offenders in this sample had not participated in treatment during their incarceration, the finding that many processes were used by this sample seems to be consistent with this research.

Only two processes of change differentiated the sample by chronicity: self liberation and helping. This indicates that CO have less confidence that they can change and are therefore less committed to making changes. This finding is validated by the results of the hope data in this study: CO scored lower on the agency subscale meaning that they rated their ability to reach their goals lower than FTO. Taken together, despite that most offenders in this sample acknowledge that they have a problem with criminal behaviour and may be actively working on their problem, CO have a lower appraisal of their capability to persevere in their efforts to reach their goals compared to FTO. Previous research has found self-efficacy, a psychologically similar construct, to increase linearly over the stages of change (Prochaska, Velicer, Guadagnoli, Rossi, & DiClemente, 1991). Yet, in this study, confidence for change and one’s sense of agency did not follow this pattern. It may be that the CO – those individuals who may have cycled through the stages of change at least once before – showed decreased levels of these constructs because they are on cycle two, three or four. Perhaps it is the case that the more cycles you go through, the lower your confidence that this will be the time that the change sticks. In other words, despite the fact that someone may be in a maintenance stage of change, it is possible then that they actually
have lower confidence than someone who is still contemplating change if they have relapsed before.

CO in this study also scored lower on the helping subscale indicating that they feel that they have less social support for healthy behaviours versus FTO. This is not surprising given that chronic involvement in the criminal justice system will have undoubtedly caused strain with family and friends.

Taken together, analyses of the processes of change in this study do provide some insight into behaviour change for offenders and may be helpful for treatment decisions. The three processes of change that are negatively correlated to precontemplation could be clues to the critical areas that treatment providers should focus on before treatment can begin for individuals who score highest in this stage. Similarly, therapeutic interventions aimed at CO should include a confidence boosting, hopeful approach to increase a sense of agency and therefore, commitment to the change process.

**Criminal Chronicity and the Possible Selves Model**

Another goal of the current study was to investigate Possible Selves (PSs) in a group of criminal offenders to see what offenders envision for their future and to do so in an adult sample, as most of the research to date has been conducted with young offenders. Therefore, criminal offenders were queried about their visions of themselves in the future, how likely these future selves were and the degree of emotion (hope or fear) that was attached to achieving these selves. Individuals in this study were also compared by chronicity to determine if they could be differentiated on
their vision of their future selves as outlined by the PSs Model. It was hypothesized that criminal chronicity would be negatively correlated with PSs variables. Based on the current literature available (Newberry & Duncan, 2001), it was thought that individuals chronically involved in criminal activity would have fewer positive PSs, fewer PSs in general, and less complex PSs because they would be more oriented to the ‘now’ and spend less time thinking about the future. Conversely, the results indicated that overall, offenders reported more hoped for PSs than feared PSs by approximately two PSs. Moreover, each group of offenders produced similar numbers of hoped-for and feared PSs and endorsed similar categories of responses. It seems that offenders do have hopes for the future in a variety of categories of life with little or no difference between individuals who vary on criminal history. It was hypothesized that CO would have less balanced delinquent possible selves since previous research has found that not having balance results in greater negative behaviour (Aloise-Young et al., 2001). In this study, approximately half of all offenders, regardless of chronicity, provided balanced responses between their PSs in the delinquent behaviour category. Therefore having balance does not seem to be related to actual criminal behaviour in this case. Lastly, it was proposed that CO would rate their positive possible selves less likely to come true and their feared selves more likely to come true as a result of lowered confidence and hope for the future; however, both groups rated their PSs similarly in terms of these variables. Most offenders rated their hoped-for PSs six out of seven or somewhat likely and their feared PSs just over three out of seven or slightly unlikely. One interpretation of these results is that they only hope for things that they believe will come true. Or, it may be that they are overly confident in the occurrence of their future goals. These results are slightly discrepant considering the outcome of the hope data collected in this study that found that CO had lower agency subscores revealing a poorer self perception of their ability to achieve their
goals. On one hand these offenders seem to have lower hope for the future in general yet when asked about specific possibilities for themselves, they have greater confidence. Offenders’ responses on the degree to which they hope for hoped-for PSs averaged four out of four, very hoped for, and three out of four, somewhat feared, for fear for feared PSs. These results indicate that offenders have strong feelings for the possibility of these future selves occurring. If offenders have unrealistic expectations of their future, plus strong emotions attached to these expectations, this may lead to frustration if things do not turn out as hoped. This could help explain some of the criminal activity if it is believed that frustration could contribute to such behaviour.

**Transtheoretical Model and Possible Selves Model**

In response to criticisms aimed at dismantling the TTM, researchers have attempted to improve and/or add to the model by incorporating other theories and models to help explain behaviour change. A main goal of this study was to investigate the possibility that the PSs Model could add meaningful and more objective change information to the TTM in light of a recent proposal that PSs can act as mechanisms of change in therapy (Dunkel et al., 2006). Based on the analyses that examined criminal offenders’ visions of their future selves in relation to their readiness for change and the processes they utilized, the findings can be interpreted as individuals who are less ready for change have less complex visions of their hoped-for futures. Conversely, higher scores on the contemplation and action stages were positively correlated to the total number of categories endorsed for hoped-for PSs. This pattern of responses suggests that once an individual moves beyond denial of the problem, begins thinking about and/or engages in change behaviours, his vision of the future becomes more complex. Furthermore, individuals in the later
stages of change also gave more responses for hoped-for and feared PSs indicating that greater readiness for change is related to having more visions of the self in the future. These findings are congruent with previous literature on juvenile delinquents that described young people who were more ambivalent about identifying negative behaviours in their lives as having more vague images of their future (Abrams & Aguilar, 2005).

An analysis of the processes of change questionnaire subscores with the PSs variables revealed that higher scores on processes were positively correlated to the number of hoped-for PSs generated and the total number of categories endorsed for hoped-for PSs. This finding points to growing complexity, and perhaps greater accessibility, of PSs for individuals who are more heavily involved in change processes.

A primary goal of this study was to assess the practical utility of using the PSs Model to improve our understanding of the change process as specified by the TTM. Analyses were conducted to examine the extent to which PSs could contribute to our knowledge about behaviour change above and beyond information provided by the TTM. The results of this study help to elucidate the relationship between these two models of change in addition to the theoretical and conceptual compatibility outlined in the introduction of this paper. The literature calls for greater research into the processes of change – a fairly neglected component of the TTM – as the processes have been heralded as the engines behind transitioning from stage to stage. The above results suggest that individuals who think more about what they hope will happen in their future tend to be engaging in more change processes. This could mean that by encouraging individuals to consider their goals, hopes, and dreams in a more concrete manner, and thereby affect their PSs, may
increase the degree to which they are engaged in the process of change. Similarly, the findings in this study that individuals with higher precontemplation scores have less complex hoped-for PSs and those with higher scores on the remaining stages have more PSs and greater complexity within these PSs, also supports a link between thoughts about the future and readiness for change. These results support the proposition that concepts within the PSs Model can help to explain readiness for change and a process by which transition through the stages occur, thereby adding to our understanding of change as currently elucidated by the TTM. Overall, this study provides both theoretical and practical evidence for the compatibility of the TTM and the PSs Model in describing the change process.

**Transtheoretical Model, Possible Selves and Institutional Behaviour**

Beyond investigating the compatibility of the TTM and PSs Models, analyses were conducted to examine the practical predictive value of these models for actual behaviour. McMurran et al. (1998) argued that it is difficult to measure real change in offending behaviour when individuals are incarcerated. They suggested that it may be more useful to take intermediate measures of change such as behaviour when incarcerated. Therefore, in the current study TTM and PSs variables were examined in relation to institutional behavioural indicators: misconducts and program participation. It was hypothesized that offenders in the earlier stages of change would engage in the most institutional misconduct and participate less in treatment programming. Furthermore, it was originally thought that offenders with many hoped-for PSs who believed these selves likely to come true and their feared selves less likely to come true would have fewer misconducts and participate in more treatment. Despite the fact that nearly a quarter of all offenders either received a misconduct and/or participated in some type of institutional
programming, there were no correlations found between readiness for change or PSs and institutional behaviour. Even the regression analyses were unable to highlight important factors in the prediction of these behaviours. None of the TTM or PSs variables accounted for any of the variance of misconducts in this sample. Only two variables acted to predict treatment participation: precontemplation and contemplation scores. Both stage of change variables showed negative relationships in the prediction meaning that higher precontemplation and contemplation scores would result in less participation. This means that while an individual is unwilling to or just beginning to acknowledge he has a behaviour that needs attention and has yet to take steps to change, he is less likely to participate in treatment offered.

The TTM’s failure to logically predict these behaviours is disappointing but perhaps should not come as a surprise given that “the predictive power of the [stages of change] rests on the ability to allocate individuals to stages accurately” (Burrowes & Needs, 2009, p.42). As was discussed earlier, the stage of change questionnaire was limited in its ability to categorize individuals into discrete readiness groups and profile scores may have been influenced by several factors that reduced the accuracy of the data. The lack of relationship between the PSs variables and institutional behaviour is less well understood except that the offenders in this study responded very similarly on the PSs questionnaire despite chronicity and readiness for change.

When we look to the offenders’ personal predictions about their behaviour using the Expectation of Time Incarcerated (ETI), it is clear that they were overly optimistic and unrealistic. For example, less than a tenth of the sample thought they would break the rules, yet formal data indicates that approximately a quarter were reprimanded for doing so. An overwhelming 74% of
offenders said that they intended to participate in some type of treatment, yet this number barely reached 25%. A large majority of offenders had no intention of reoffending, coming back to jail or breaching their probation and responded that they planned to work hard to stay out of trouble. Unfortunately, the current statistics suggest that many of these offenders will reoffend and return to a correctional institution within two years (MCSCS, 2008). The responses on the offenders’ expectations of behaviour are consistent with their responses on the PSs questionnaire that reflect optimism, good intentions and perhaps a denial of the barriers that lay ahead.

Examination of responses on the Release and Reintegration Inventory (RRI), however, revealed a different story about the CO – one that seems more in line with reality and their overall hope scores. The RRI was an excellent discriminator of chronicity and scores were different between groups on all but one subscale. This tool described CO as having concerns about their lives outside of jail in relation to finances, employment, relationships, and substance use. It showed that CO are more worried about social pressures from criminal associates and alienation that may occur as a result of ignoring these pressures. Moreover, CO indicated that they expect to have higher negative affect and impulsive behaviour compared to the FTO. Overall, this measure was able to capture a more realistic version of the future and could be used by practitioners to identify and address potential concerns pre-release for CO.

**Clinical Implications**

According to the TTM, individuals cannot make behaviour change without first contemplating, planning, and preparing to take action. Many studies have linked stage of change to treatment outcome. If the results in this study are accepted as valid, most offenders were thinking about
making changes in their criminal behaviour and/or actively taking steps to do so. But if half of the sample was only thinking about change, this indicates that offering treatment programs focusing on helping people make changes may not be appropriate for half of the incarcerated population. Other programming needs to be included with the primary aim of transitioning individuals into the action stage of change. For example, at the correctional facilities involved in this study, the focus of treatment programs offered were substance abuse, prosocial thinking, and anger management. All of these are highly relevant for criminal offenders who are ready to tackle their criminogenic needs and change their behaviour. However, it may be that other programs are needed for the other half of offenders that solely focus on increasing readiness for change.

It should be noted that offenders in this study indicated that they were using most of the processes of change, so treatments with varied approaches and techniques would be most suitable. For those individuals with high precontemplation scores, they were less likely to be activating three specific processes of change; therefore, programming and/or individual treatment should focus on these areas to help transition individuals and increase contemplation. CO had low self-liberation process of change scores, meaning that they felt less agentic in their attempt at changing, so treatment should attempt to scaffold their efforts to increase their commitment to the change process.

Fortunately, the majority of offenders believed in a future with more positive PSs than negative ones. However, individuals with higher precontemplation scores had less complex PSs. Therefore, programs aimed at these individuals could work on increasing the complexity,
quality, and accessibility of PSs in order to help offenders envision their future. Previous research has demonstrated that the motivational impact is greater when PSs are multifaceted in terms of the representation; therefore, the more complex the representation including semantics, images, and so on, the more this PS will influence one’s motivation to achieve the future self (Markus & Ruvolo, 1989). On a related note, for the majority of offenders who did have complex positive PSs, perhaps some efforts be made to reality-test these future selves. It may be that repeat offenders run into more problems in the future because their visions of themselves are unrealistic and highly unlikely due to their criminal behaviour.

Lastly, the behavioural indices suggest that while offenders have good intentions of participating in treatment, only half of those who say they are going to actually do so. Perhaps it could be that there are limited programs offered, work schedules get in the way or contemplation remains high. The RRI does reveal that CO have more concerns about their release than FTO, many of which could put them at greater risk for reoffending. In response, treatment groups aimed solely at CO should be offered to address these concerns.

**Limitations of the Study**

There are several factors when conducting research with criminal offenders that may create limitations and affect the validity of the results. For example, there is debate on the influence of social desirability on self-report measures in this population (Mills & Kroner, 2005). The accuracy of the data collected is also a concern as the offenders may have been apprehensive about the confidentiality of their responses. The very nature of the jail setting where individuals live in a communal environment added to the difficulty of conducting research and maintaining
privacy; however, this is inherent to the structure of the jail system and all other research conducted within it. As a result, great efforts were taken to ensure that worries were addressed and that confidentiality was preserved to the fullest extent possible. Specific to this study, it should be noted that while individual participants were not hand-picked by the researcher, access to offenders was limited to certain units within the correctional facilities. At both sites, permission was granted to recruit from units housing ‘good’ inmates: these offenders are sent there for demonstrating cooperative behaviour and appropriate conduct. Consequently, the participants in this study do not necessarily represent all criminal offenders but rather offenders who are able to control their behaviour enough to behave well while incarcerated. This may not affect the data from the FTO as they are often housed on these units but it may be a concern for the sample of CO. As for the FTO, this sample may have been skewed by including CO who had, until now, evaded the law, and therefore were not truly FTO, or individuals who had engaged in one criminal offence and did not actually have any type of ongoing criminal behaviour that needed to be addressed.

**Conclusion**

The Transtheoretical Model of behaviour change has been questioned and criticized in recent years as outdated, invalid and unhelpful (e.g., Armitage, 2009; Bandura, 1998; Burrowes & Needs, 2009; Casey et al., 2005; Sutton, 2001). In fact, an editorial in the journal *Addiction* went so far as to say, “there are serious problems with the model that…has held back advances in the field of health promotion,” (West, 2005, p. 1036). In response, researchers have attempted to add to the TTM with complementary models and related theory (e.g., Mendel & Hipkins, 2002; Williams & Strean, 2002). In this study, I was interested in testing the compatibility of concepts
found in the PSs Model with those outlined by the TTM. Additionally, steps were taken to examine the predictive ability of each of these models for actual behaviour of criminal offenders in correctional settings. According to this study, the vast majority of inmates were ready for change. However, results indicate that there may be weaknesses in the tool – and perhaps theory itself – used to measure readiness for change, particularly for criminal behaviour. It is also possible that criminal behaviour is too complex to follow the change pattern described by the TTM. While this model has been studied in specific offender groups such as sex offenders, further research needs to be conducted on a general offender sample before conclusions about the validity of this model can be made. Results of the PSs Model indicate that all offenders, regardless of chronicity, have similar hopes and fears about their future; therefore, the variables are unable to differentiate between groups. There was some connection between the models, namely that individuals in the earlier stages of change have less complex visions of their future. Moreover, individuals engaged in many change processes have more elaborate PSs as well. Due to the congruous nature of these change models and the results found in this study, it is reasonable to continue investigating the relationship between these two models. Overall, offenders responded optimistically to estimations of their short and long-term futures but did not necessary follow through with some good intentions, as was evident with treatment participation. Despite relative positivism, CO did report lowered agentic feelings and some concerns about their release from incarceration compared to FTO. Analyses revealed that the LSI-OR was the best predictor of misbehaviour in jail while both the TTM and the PSs Model failed to predict behaviour of inmates.
As has been concluded in many studies investigating the legitimacy of the TTM, this study supports further investigation on this model despite concerns raised. The outcomes here would suggest that research efforts to incorporate other complimentary theories of change into the TTM, like the PSs Model, may be helpful for understanding the process of change. Lastly, failure to predict institutional behaviour by these models demonstrates the complexity of behaviour by offender populations and speaks to the necessity of further research.
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