Self-Determination, Deviance, and Risk Factors

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Abstract

Deviant behaviours cost Canadian society billions of dollars and an immeasurable amount of emotional and physical damages every year (Office of the Parliamentary Budget Officer, 2018; The John Howard Society of Canada, 2018). There have been numerous studies on the role of risk factors in affecting deviant behaviours, however, none of these have examined the influence self-determination on deviance (Mann, Hanson, & Thornton, 2010; Murray & Farrington, 2010; Zara & Farrington, 2010). This study intends to fill this gap by investigating the interactions between self-determination, gender, risk factors, and deviance, which, prior to this study, had yet to be examined. Specifically, this study aims to explore the relationship between the separate types of self-determination (autonomous, controlled, and impersonal) and the contribution of each gender on these categories. In addition, this study also intends to analyze how the type of self-determination orientation and gender interacts with the number and severity of deviant acts an individual engages in, and the amount of risk factors present for each individual.

432 participants invited through the University of Saskatchewan's PAWS and SONA systems completed an online survey that asked questions relating to gender, self-determination, risk factors, and deviance. A Chi-square Test for Independence was utilized to explore the explicit relationships between the type of self-determination and gender differences. In addition, a two-way MANOVA was used to compare self-determination and gender together in relation to deviance and risk factors. A Chi-square test found that there was not a significant relationship between gender and self-determination. On the contrary, a MANOVA found a significant interaction effect between self-determination, deviance, and risk factors. However, when the interaction was examined further through univariate ANOVAs, no significant differences were found.

While not significant, patterns in the data were nevertheless evaluated. Implications, limitations, and suggestions for future research were also discussed.

Keywords: Deviance, antisocial behaviours, self-determination, risk factors, gender

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Without any further ado, please enjoy the compilation of my sweat, tears, loss of sleep, and too many years of my life. Thankfully, it was worth it.

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Chapter 1: Introduction

Overview of the Problem

Understanding deviant behaviour and why individuals engage in it is crucial in order to provide effective prevention, assessment, and treatment of such behaviours. While there are various definitions of deviant or antisocial behaviour, these behaviours typically involve any type of behaviour that is considered harmful (i.e. lying, bullying, stealing, assault, etc.), goes against the generally agreed-upon norms in society, and that elicits a negative response (Cho, Martin, Conger, & Widaman, 2010; Reavy, Stein, Paiva, Quina, & Rossi, 2012). For the purpose of this study, the terms antisocial and deviant will be treated as interchangeable.

Deviant behaviour includes both non-criminal and criminal acts that negatively impact society. As such, deviant behaviour has a number of undesirable consequences on society and on individuals – the financial, emotional, and potentially physical effects on victims, the financial cost of treatment, and the cost of preventative measures throughout society (i.e., security measures), just to name a few. To illustrate, criminal acts specifically have been shown to have a significant financial effect on society. For example, federal custody costs on average $114,587 per inmate per year, while approximately $20 billion is spent per year on policing, courts, and criminal institutions by the federal, provincial, and municipal governments in Canada (Office of the Parliamentary Budget Officer, 2018; The John Howard Society of Canada, 2018). In addition, the average cost per homicide was estimated at around $5.9 million in 2014 (including tangible and nontangible costs, such as pain and suffering) (The Government of Canada, 2015). However, what is currently unaccounted for, and potentially even more staggering, are the effects of more common behaviours that are not typically viewed as crimes, but that would still be viewed as deviant or antisocial actions. Behaviours such as lying, cheating, running away, and skipping work or class may not be defined as crimes and are difficult to measure, but they still have huge financial, emotional, and physical impacts on individuals and society every year. For example, the money that is spent on privately funded rehabilitation facilities for individuals addicted to alcohol and drug use, the overtime that is paid out by an employer when their employee covers for a co-worker who has skipped for the fourth time this month, or when an e-transfer for selling a used textbook does not go through and a student does not receive the money for selling it, just to name a few.

As for the emotional and physical impacts of antisocial behaviours, we have likely all been affected by bullying or lying, and can hopefully at least all appreciate the severity of things like the loss of a loved one to things such as drunk or distracted driving, or to violence. In Canada, distracted driving has surpassed impaired driving as the number one cause of vehicle related fatalities (Royal Canadian Mounted Police, 2014). Approximately four million motor vehicle accidents across North America each year are related to distracted driving (Royal Canadian Mounted Police, 2014). Depending on the law in specific locations, distracted driving could be an example of a deviant but non-criminal behaviour that could result in catastrophic financial, emotional and physical consequences.

By increasing the collective understanding of why individuals engage in antisocial behaviours, society can provide more effective preventive, assessment, and treatment techniques that target these behaviours. Both criminal and non-criminal deviant acts can have huge detriments on society, including financial, emotional, and physical impacts, as the most apparent consequences of these behaviours.

Research Significance

While there has been a multitude of research done on risk factors that may lead an individual to a criminal lifestyle, the impact of self-determination, along with gender, have not been widely researched in this way (Mann, Hanson, & Thornton, 2010; Murray & Farrington, 2010; Zara & Farrington, 2010). First, this study intends to examine the relationship between the contribution or weighting of separate genders on each type of self-determination. Secondly, this study also aims to investigate if the controlled and/or impersonal types of self-determination could be (a) risk factor(s) for engaging in deviant behaviours (Deci & Ryan, 2000; 2008b) and how they are related to other risk factors, as well as to examine the effect of gender on these phenomena. Finally, this study aims to combine research on self-determination and risk factor studies. Not only would this research be useful in preventing crime, but it could also play an important role in forensic risk assessments and treatments, as well as adding to the current literature in multiple areas.

Purpose of the Study

The purpose of this study is to understand how self-determination, otherwise known as motivation, gender, deviance, and risk factors are intertwined. Specifically, this study will first examine the relationship between gender (male and female) and each type of self-determination

orientation (autonomous, controlled, impersonal). Secondly, this study will inspect how self-determination and gender interact with antisocial behaviours (amount and severity) and risk factors.

Self-Determination Theory is described by Deci and Ryan (2008b) as a theory of motivation, which divides motivation into types based on a number of characteristics, rather than solely evaluating motivation by amount. Deci and Ryan (1985, 2000, 2008b) theorized that there are three types of motivation orientations: autonomous motivation, controlled motivation, and impersonal motivation. Autonomous motivation is described by Deci and Ryan (2008b) as the most internally regulated type of motivation, and individuals who possess this type of motivation typically feel satisfied and have the basic psychological needs of competence, autonomy, and relatedness met. This type of motivation is often seen as synonymous with internal motivation, although Deci and Ryan (2008b) argue that they are not completely equal. This type of motivation is known to have the highest amounts of self-determination. Conversely, controlled motivation is mainly externally regulated, and those who possess this type tend to have most of their psychological needs met, minus autonomy (Deci & Ryan, 2008b). This orientation often includes external motivation and has slightly less self-determination than the first. Finally, impersonal orientation refers to a lack of motivation in any way, and these individuals typically do not have any of their basic psychological needs met and have the lowest amount of self-determination (Deci & Ryan, 2008b). Subsequently, this orientation includes amotivation. According to Deci and Ryan (2008b), the more basic psychological needs an individual has met, the more psychologically healthy that individual is, and the more they can function effectively. As well, Deci and Ryan (2008b) theorize that at any given time individuals tend to fall into one type of motivation orientation more than the others. Understanding the role of an individual's self-determination (or motivational orientation) as a risk factor would then allow for improvements in deviant behaviour prevention, assessment, and treatment.

This study will focus on assessing if the controlled orientation or impersonal orientation types of self-determination are a risk factor for engaging in not only more deviant behaviours, but also more severe deviant behaviours. Deci and Ryan (2000) believe that it is possible that those with these types of self-determination could engage in more crime, due to their psychological needs not being met.

In addition, gender has been well known to play a significant role in crime statistics, with females only accounting for approximately 25% of the police-reported crime in Canada in 2017 (Savage, 2019). This disparity has been shown as a general trend that has occurred historically time after time, unbiased of race or ethnicity (Steffensmeier & Allan, 1996). The reasoning for such a substantial discrepancy is still widely unknown, although there are numerous diverse theories (Abajobir, Kisely, Williams, Strathearn, Clavarino, Najman, 2017; Daigle, Cullen, & Wright, 2007; Fagan, Van Horn, Hawkins, & Arthur, 2007; LaGrange & Silverman, 1999), which will be examined in greater depth in chapter two of this paper. However, due to this phenomenon, this study will also examine the effects of gender on self-determination, deviance, and risk factors in order to explore any significant associations. Specifically, gender and self-determination will be included in a Chi-square Test for Independence to observe if a particular gender contributes significantly more to a certain type of self-determination than the opposing gender. This may illuminate an effect that has not been previously studied in self-determination research, therefore, adding more to the understanding of motivation and deviance. Gender will also be incorporated in a secondary analysis including self-determination, deviance, and risk factors in the form of a MANOVA.

Risk factors such as age, the stability of the environment as a child, and patterns of violence will also be examined in order to examine the convergent validity between self-determination and other well-known risk factors (Wong & Gordon, 1999-2003)

Research Questions

1) Is there a significant relationship between each of the types of self-determination (autonomous, controlled, and impersonal) and gender?
2) How do the types of self-determination orientations (autonomous, controlled, and impersonal) and gender interact with the number and severity of deviant acts an individual engages in, and the amount of risk factors present for each individual.

Methods

432 adults, ages 18 and over were included in this study. Demographic information was collected on the participants' gender, age, ethnicity, program and year of study. Participants were invited from the University of Saskatchewan's undergraduate research participation pool (SONA) and the University of Saskatchewan PAWS online student centre and were compensated

either through bonus course credits or entered into a draw for a $10 Tim Hortons e-gift card, respectfully.

The participants were invited to fill out three surveys: The General Causality Orientations Scale (GCOS) (Deci and Ryan, 1985), the Delinquent Activities Scale (DAS) (Reavy et al., 2012), and a Likert type survey consisting of risk factors taken from the Violence Risk Scale (VRS) (Wong & Gordon, 1999-2003). The GCOS was used to determine an individual's main type of self-determination, either autonomous motivation, controlled motivation, or amotivation. The DAS was used to measure both the number and severity of deviant activities an individual has been involved in during the last 12 months. Finally, items from the VRS were used to identify other well-known risk factors. The VRS (along with its variations) has been well researched and used in the treatment and assessment of offenders (Dolan & Fullam, 2007; Lewis, Olver, & Wong, 2012). Each of these surveys were completed in an online, self-report manner. Each of these measures has been shown to be effective in applied settings and have good validity scores. The VRS and GCOS have also been shown to have high reliability (Deci & Ryan, 1985; Lewis et al., 2012; Reavy, Lewis, Olver, & Wong, 2013).

A Chi-square Test for Independence was used to examine if type of self-determination orientation and gender are dependants. Secondly, a two-way MANOVA analysis was used to determine the interactions between each type of self-determination and gender, and the number and severity of deviant acts an individual engages in and the amount of risk factors present for each individual.

Chapter 2: Literature Review

Overview

This chapter summarizes the current research on Self-Determination Theory and risk factors associated with deviant behaviour. It will begin by describing what Self-Determination Theory is, including the history, types of motivation, and factors that can influence them. Following the discussion on Self-Determination Theory, this chapter will then focus on gender and deviance, followed by some of the known risk factors that can influence deviant behaviours. Subsequently, a theorization of why certain types of self-determination could potentially be associated with risk factors to influence antisocial behaviour will be provided. Finally, this chapter will end with a summary of central terms and their definitions used throughout this study.

Self-Determination Theory

In the spring of 1980, Edward L. Deci and Richard M. Ryan introduced Self-Determination Theory to the academic world. Deci and Ryan first hypothesized that, unlike previous theories, an individual's behaviour is related to not only to the personal (nature) and the environmental (nurture) factors in their life, but one must also consider the individual's conscious and unconscious cognitions – their thoughts, motives, and attitudes (Deci & Ryan, 1980). Based on these assumptions, Deci and Ryan (1980) introduced a theory of motivated behaviour titled Self-Determination Theory (SDT). The basic premise of this theory, at the time, was that while an individual's internal and external attributes impact their behaviour, so does their self-determined and automated mind. In other words, people could choose to do something deliberately, as well as engage in behaviours unconsciously, and that individuals would engage in behaviours for varying reasons, either intrinsic or extrinsic. Deliberate or self-determined behaviours would include conscious decision making, while unconscious or automated behaviours would include things we typically do without much thought, such as moving your spoon to your mouth or fidgeting in class. The theory of self-determination has since grown to focus more so on autonomous motivation, controlled motivation, and amotivation regulatory styles to help answer the question of why people act the way they do, among other questions (Deci & Ryan, 1985; 2000). Deci and Ryan (2000; 2008b) have also examined extrinsic and intrinsic motivation in relation to our actions and behaviours.

There are four main tenants that, according to the work of Deci and Ryan (1985; 2000; 2008a; 2008b), are most fundamental to their theory; first, that the type of motivation an individual holds is more central in predicting outcomes than the amount of motivation; second, is that there are three basic, universal human psychological needs related to motivation - competence, autonomy, and relatedness; third, there are three types of motivation orientations or regulatory systems – autonomous, controlled, and impersonal, and three corresponding types of motivation – intrinsic, extrinsic, and amotivation; fourth, that all people have each of the motivation orientations, but to varying degrees, and that each individual typically has more of one type than the others. Deci and Ryan (1985: 2000; 2008a; 2008b) also discussed how different internal and external factors can affect these basic needs and, in turn, affect which motivation orientation an individual primarily holds. Finally, autonomous motivation has recently been shown to lead to multiple positive life outcomes, such as better psychological well-being, better learning, health, and relationship outcomes. Each of these points will be discussed in more detail below.

Self-Determined Behaviour

Self-determined behaviour relies on inputs from one's environment and memory. These inputs are then processed, and in this, we become consciously aware of some of the information around us. We then use this conscious information to make decisions based on which outcome would give us the most satisfaction. Deci and Ryan (1980) illustrate that this conscious behaviour involves two parts: the first is that we make choices in order to mediate or facilitate behaviour; the second is that we can put things that we want on hold if they are not able to be satisfied at that time or if there is something which would result in more satisfaction. For example, an individual wants to buy new shoes but also wants to save money. Initially, they would take in information from their environment and from their memory. Information such as "I like these shoes" and "I should wait for a sale" are some examples of the information this individual may become consciously aware of. At this moment, this individual has two main choices – do they buy the shoes now, or later? Say this individual makes a deliberate decision to wait until later and chooses to save money now instead – this shows conscious self-determined behaviour. This also illustrates how individuals can prioritize which outcomes would maximize satisfaction, given the situation. Deci and Ryan credit our ability to make these decisions to intrinsic motivation and our need for competent, self-determined interactions. As well, they

hypothesize that many of the behaviours we choose to participate in lends themselves to intrinsic gratification, hence the intrinsic motivation for participating in those activities.

Automatic/Automatized Behaviours

Contrary to consciously motivated behaviours, automatic and automatized behaviours are those that operate unconsciously to meet unmet needs and happen without much conscious attending. For example, activities like turning off the stove or nail biting both tend to be unconscious behaviours. Automatized behaviours are initiated due to conscious awareness, such as wanting to drive a race car. However, once you learn how to drive the car, much of the process becomes unconscious. In other words, you may start the car, put your seatbelt on, etc., without much conscious thought. Automatized behaviours can be either intrinsically or extrinsically motivated, and hence, can have either intrinsic or extrinsic rewards. Using the race car example, an individual may want to drive a race car for pleasure (intrinsic reward) or for money (extrinsic reward).

However, automatic behaviours are inflexible and difficult to control and are initiated unconsciously as a response to specific needs not being met. For example, if an individual does not have a conscious and healthy way to cope with stress, their unconscious mind may try to deal with stress through nail biting, jaw clenching, or pacing. These behaviours often occur without any conscious thought and can be difficult to change. Self-determined, automized, and automatic behaviours account for the actions we do – however, they do not account for why we do those things. This is where the rest of SDT comes into play.

Intrinsic Behaviours

Deci and Ryan (1985; 2000; 2008b) noted that there are three ways that an individual can be motivated to engage in an action – through intrinsic motivation, extrinsic motivation, and amotivation. Intrinsic motivation involves participating in activities because they are inherently interesting and satisfying to the individual, rather than due to separate, external outcomes. In other words, individuals engage in these activities because they find them fun or challenging, and not for external rewards, such as prestige or money. Intrinsic motivation is regarded to Deci and Ryan (2000) as a volitional, or self-determined activity. In other words, individuals exercise complete freedom in deciding whether or not they want to engage in an intrinsically motivated activity, as there are no outside rewards or pressure to engage in any certain behaviours. Intrinsically motivated activities are often done to meet the innate, basic human psychological

needs of competence, autonomy, and relatedness, which will be discussed more following extrinsic motivation and amotivation. In sum, these individuals would rather drive the race car from the previous example for pleasure, rather than for money.

Extrinsic Behaviours

According to Deci and Ryan (1985; 2000; 2008b), individuals participate in extrinsic behaviours in order to attain a separate, external outcome. In other words, these individuals organize their behaviours due to external controls rather than personal interests. However, Deci and Ryan (2000) made an important clarification regarding extrinsic motivation – there are multiple types of extrinsic motivation. More specifically, Deci and Ryan (2000) identified four types: external regulation, introjection, identification, and integration.

External regulation is what is most commonly imagined when thinking of extrinsic motivation. Individuals who are externally regulated tend to view events as controlling them, and therefore have an external locus of control. They depend on external controls, such as deadlines, rewards, or demands to engage in an activity. For example, a child doing chores for his allowance.

The second type of extrinsic motivation is introjection. This type of motivation is still quite extrinsic, as it has to do with performing actions because of feeling pressure to avoid anxiety, to enhance self-esteem or pride, or to follow societal norms. Behaviours such as cleaning to minimize personal anxiety over how messy your house is or going out of your way to complete a task at work in order to receive praise from your boss are possible examples of introjected regulation. These individuals still feel controlled to behave in a certain way but are not as pressured by tangible external outcomes, such as deadlines or promotions. Therefore, they would still have an external perceived locus of causality and hence would be lacking in self-determination.

The third type of extrinsic motivation is identification. Identification is when an individual has recognized the importance of a behaviour, and thus adopted it as a valued activity, while still being driven by an external outcome. For example, a graduate student who is writing her thesis even though she does not enjoy writing, but is doing it because it is relevant to her life goal of being a psychologist, is experiencing identification.

The last type of extrinsic regulation is integrated regulation. This occurs when an externally motivated action becomes congruent with an individual's values and needs. This form

of motivation is similar to intrinsic motivation in many ways, however, it is still considered extrinsic motivation because the behaviour is still done with respect to some external outcome and not purely for the individual's own enjoyment. For example, a new graduate works at an entry-level job that he enjoys, but also in hopes that it will look good on his resume in order to get his dream job later on. The latter two types of extrinsic motivation, identification and integration are composed of a person's own self-determination and volition. In general terms, extrinsically motivated individuals would rather drive a race car for money or prestige than for pleasure.

Amotivation

Amotivation is considered by Deci and Ryan (1985; 2000) to be the absence of motivation. Deci and Ryan (2000; 2008a) continued on to explain that amotivation occurs when an individual does not value an activity, does not perceive that they are competent enough to accomplish it, or that they do not believe a behaviour will result in a desired outcome. Just as every one of us has experienced intrinsic and extrinsic motivation, we have also all experienced amotivation. Perhaps you were invited to join a friend's softball team, but you have no desire to play sports. Alternatively, perhaps there was a time in college where you chose not to take a certain class because you felt incompetent regarding the subject matter. Deci and Ryan (1985) also liken amotivation to depression or other periods of low interest and energy. In short, these individuals would rather not drive a race car at all, either because they do not think they would be able to, they may think it would not result in money or fame for them, or they simply just may not find it interesting.

The Three Basic Psychological Needs

Deci and Ryan (2000; 2008b) postulate that there are three basic, innate psychological human needs required for effective functioning and psychological health– competence, autonomy, and relatedness. The presence of absence of each of these needs also influences an individual's motivational orientation. Previous research has supported the existence of these needs, and that they are consistent across cultures and worldviews (Deci and Ryan, 2008b).

Competency is largely known as the feeling that one can successfully and efficiently complete a task or activity. According to Deci and Ryan (2000), an individual's feelings of competence can be increased through things such as optimal challenges, positive feedback, and freedom from demeaning evaluations. If an intrinsic activity results in positive feedback, Deci

and Ryan (2008a) note that this feedback is taken as an affirmation of an individual's competence, rather than acting as an extrinsic reward. Autonomy is commonly known as 'the ability for one to make their own decisions' and is synonymous with self-determination, choice, and volition. As expected, autonomy can be increased through choice and self-direction and thwarted by controllers of behaviour, such as rewards based on task performance, deadlines, threats, directives, and competition. Finally, relatedness is considered by Deci and Ryan (2000) as the primary reason why individuals are willing to engage in extrinsically motivated behaviours. Since extrinsically motivated behaviours are not inherently rewarding, Deci and Ryan (2000) postulate that the primary reason why we engage in these behaviours is because they are valued by those who are important to us and who we feel (or would like to feel) connected to. Engaging in these behaviours provides us with a sense of belongingness to a person, group, society, or culture. When individuals feel respected and cared for, their need for relatedness has been met.

Motivational Subsystems

While there are three main types of behaviours, intrinsic, extrinsic, and amotivation, Deci and Ryan (1985) proposed that there are also three types of motivational subsystems which guide said behaviours. These subsystems are all-encompassing and include an individual's beliefs, attitudes, and perceived locus of control. The motivational subsystems (or orientations) theorized by Deci and Ryan (1985) are autonomy orientation, control orientation, and impersonal orientation. Most individuals have aspects of each of the three subsystems, however, individuals tend to have differing levels of each of the orientations (Deci & Ryan, 1985). It is more accurate to describe the orientations as sliding scales rather than determinant groups. It is important to note here that Deci and Ryan (1980; 2000) hypothesized that the type of motivation, more so than the amount of motivation, is what guides our actions and behaviours. In other words, understanding an individual's motivation orientation (also known as their regulatory system), rather than just saying someone is "highly motivated" or "not motivated", can assist themselves and others in understanding why they behave in the ways they do. As well, a person's motivational orientation can help explain why individuals value different things, such as external approval or personal interest. Deci and Ryan (1985; 2000; 2008a; 2008b) offered a brief description of each type of motivation, which will be discussed below.

Autonomy Orientation

In the autonomy motivation orientation, individuals participate in activities in correspondence to their values and their own volition (Deci & Ryan, 2008b). These individuals hold a high degree of choice regarding the regulation of their own behaviours; therefore, they have a strong internal locus of control. These individuals are driven by their need for personal satisfaction and competence, hence they tend to organize their priorities based on their personal goals and interests. As such, these individuals are more self-determined than those primarily within the controlled or impersonal orientations. They also choose to seek out opportunities that strengthen their autonomy, competence, and relatedness to others such as jobs that require a high level of initiative and have a large amount of freedom (Deci & Ryan, 1985; 2000; 2008b). Individuals are able to be autonomous when all three basic needs of competence, autonomy (also known as self-determination), and relatedness are met. As reasonably expected, intrinsic motivation is an example of someone behaving in an autonomous way. However, the extrinsic principles of identification and integration are also prototypes of autonomous regulation due to the internalization of the values connected to the behaviours and because the behaviours are done with volition and choice (Deci & Ryan, 2008b).

Control Orientation

In the control motivation orientation, individuals act on extrinsic motivation, leaving them to have an external locus of control and be less self-determined than the autonomous orientation; however, with more self-determination than those within the impersonal orientation (Deci & Ryan, 1985). These individuals view factors such as pay and status, for example, as very important when making decisions or choosing jobs. Deci and Ryan (2008b) state that those who fall into this category have at least somewhat met their needs of competence and relatedness, but have not met their need for autonomy. The control orientation includes the motivational systems of external regulation and introjection (Deci & Ryan, 2000; 2008b). Behaviours within this orientation are controlled through external pressures and lack volition and agency.

Impersonal Orientation

Finally, the impersonal orientation involves individuals that believe they cannot regulate or determine their own behaviour, and who tend to view outcomes to be independent of their behaviour (Deci & Ryan, 1985; 2000). These individuals believe they cannot change or master a situation and that many things are out of their control. Behaviours in this orientation are neither

motivated by intrinsic or extrinsic rewards, but rather by detached, or impersonal, forces. Individuals that suffer with depression and/or anxiety often have these cognitions and may believe that they are unable to control or change their situation. These individuals often follow expectations, not because they are controlled by them, but because they lack the intentionality needed to do something different (Deci & Ryan, 1985).

Again, it is important to re-iterate that individuals do not solely fall into one of these three categories. Everyone has components from each of these categories, however, according to Deci and Ryan (1980; 2008b), we tend to be higher on the scale for one of these types than the others (see Figure 2.0). For instance, if someone is mostly intrinsically motivated, that does not mean that they will find everything inherently interesting or be willing to work for free just because they enjoy their job. Similarly, just because someone is mainly extrinsically motivated does not mean that they never do things just for the enjoyment. In sum, there will almost always be times when a person's motivation is situation specific, hence the postulate that self-determination is on a continuum. Nevertheless, Deci and Ryan (1980, 1985, 2008b) argue that an individual's motivational characteristics tend to fall into one of the three categories more so than the others.

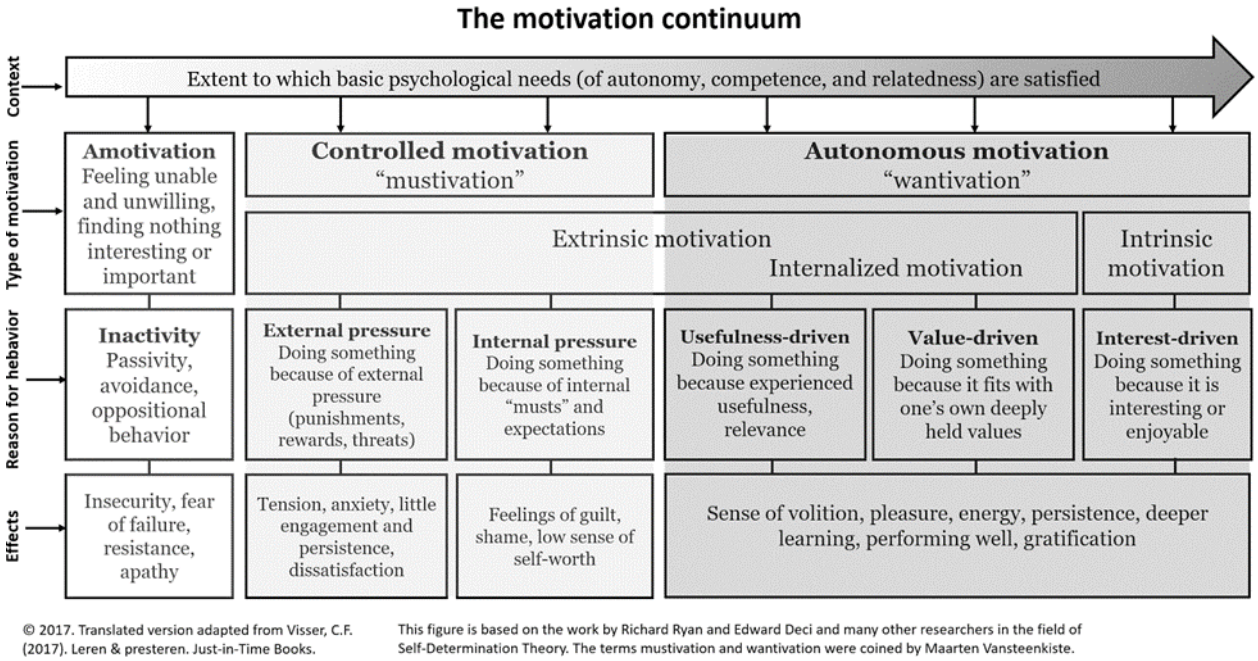

Figure 2.0. A taxonomy of human motivation according to Self-Determination Theory (Visser, 2017).

Deci and Ryan (1980, 1985; 2000) also hypothesized that there is a range of different phenomena that are related to an individual's motivation orientation, including, but not limited to, their perceived locus of control, perceived competence, the presence or absence of salient rewards, and self-esteem. These are each expanded on below.

Perceived Locus of Control

Deci and Ryan (1980, 1985) note that the experiences that people have and how they perceive them can affect which motivational subsystem is the strongest for that individual. Deci and Ryan (1985) discussed several factors that are related to each orientation. The researchers stated that the main factor in each orientation is the individual's perceived locus of control. Locus of control speaks to whether people believe that outcomes are controllable by them, or if outcomes are controlled by others. Individuals can have either an internal or external locus of control, which, as mentioned above, reflects the autonomy orientation, and the control and impersonal orientations, respectfully. Those who are able to make decisions in the absence of external controls and rewards, but instead are able to make decisions based on what is most fulfilling to them, would have an internal locus of control. On the contrary, those who tend to make decisions based on external rewards, such as money, or external expectations, such as coming to work on time, would have an external locus of control.

Perceived Competence, Ego Development, and Salient Rewards

Perceived competence, or ego development, also greatly determines each of the orientations. When an individual has a high level of ego development, they perceive themselves to be more competent over their own autonomy. These individuals tend to have an integrated sense of self and are well connected with their inner motives (Deci & Ryan, 1985). Deci and Ryan (1980) also mentioned that an individual's perceived competence can affect which orientation of motivation they more strongly connect to. According to Deci and Ryan (1980), the more experiences an individual has that raises their perceived competence, the more intrinsically motivated they will be, such as with the autonomous orientation. Hence, the more experiences that an individual has that leaves them feeling incompetent, the more extrinsically motivated they will become.

As discussed earlier, feeling incompetent is a characteristic of the control and impersonal orientations. In addition, the authors asserted that feelings of competence and motivation are also influenced by the presence or absence of salient rewards. If salient rewards are present, such as

money, gifts, or other material rewards, then the intrinsic motivations of that individual will become weakened and that individual would be more likely to consider extrinsic rewards more central. As well, Deci and Ryan (1980; 2000) state that intrinsically motivated individuals will likely begin to feel less self-determined, less able to control their own outcomes and will become more dependant on external factors to regulate their behaviours in the presence of tangible rewards. If salient rewards are not present, an individual's intrinsic motivations will become strengthened, which will, in turn, will encourage a stronger internal locus of control and will result in more self-determining, autonomous behaviours. A similar effect to what is described by Deci and Ryan (1980) has also been described by Festinger and Carlsmith (1959).

Festinger and Carlsmith (1959) researched a phenomenon called cognitive dissonance. When people are experiencing cognitive dissonance, it is because their actions and their beliefs do not align. For example, when an individual smokes cigarettes but is distinctly concerned about the dangers of smoking – this individual is suffering from cognitive dissonance. It has been shown that when individuals are experiencing dissonance, they try to reduce this unpleasantness.

There are three main ways in which individuals can attempt to reduce dissonance: forced compliance, decision making, and effort (Aronson & Mills, 1959; Festinger, 1964; Festinger & Carlsmith, 1959). Each of these three ways includes changing the individual's thoughts and beliefs to fit their experiences. For example, Festinger and Carlsmith (1959) conducted an experiment on forced compliance. In this study, they asked participants to complete monotonous tasks for one hour, with the explicit purpose of making the experiment a boring and somewhat negative task for the participants. When the one hour was completed, two of the three participant groups were given either $1 or $20 and asked to explain the experiment in a positive and engaging manner to a fellow student who was posing as the next participant. At the end of the experiment, participants in the $1 group rated the experiment as significantly more positive and enjoyable than those in the $20 condition. Festinger and Carlsmith (1959) hypothesized that this is because those only given $1 felt the need to change their beliefs to justify and match what they told the next participant. Since those in the $20 condition received a much more salient reward, they were able to justify their dissonance and actions due to external motivations and rewards. On the contrary, those who were given a small, non-salient reward, needed to find justification for their actions elsewhere – i.e., through changing their beliefs. This is similar to the phenomena of salient and non-salient rewards hypothesized by Deci and Ryan (1980). In the presence of

salient external rewards, individuals will justify their actions through these rewards, and, over time, begin to use these rewards as their main source for motivation, which in turn affects their feelings of competence. However, when there is a lack of salient external rewards, individuals will justify their behaviours through their beliefs, which therefore creates more internal motivation and higher levels of competence. A similar effect is also found through the ways of decision making and effort in lessening cognitive dissonance.

Self-Esteem

Deci and Ryan (1985) also theorized that an individual's self-esteem and motivational orientations are related. According to these researchers, individuals who hold mostly an autonomous orientation are more likely to have higher self-esteem, since they view themselves as being competent and have a strong sense of self. Opposingly, those with an impersonal orientation are more likely to have low self-esteem, since they do not view themselves as competent and do not have a strong sense of self. Accordingly, those in the control orientation may either have high or low self-esteem. Since this orientation is centred around external rewards, their self-esteem is dependant on the input that they are receiving from others around them.

Outcomes Related to Autonomous Orientation

Multiple studies have shown that there is a wide range of positive life and behavioural outcomes related to the autonomous orientation of motivation. Studies by Chirkov, Ryan, Kim, and Kaplan (2003) and Sheldon et al. (2004) have both found that acting in a more autonomous way relates to better psychological wellbeing, across many distinctly varied cultures (Deci & Ryan, 2008a).

Previous studies have also shown a significant importance for encouraging autonomous regulation. Vansteenkiste, Simons, Soenens, and Lens (2004) have illuminated that autonomy-supportive environments increased students' learning and performance outcomes when compared to control orientated environments. In addition, Chirkov and Ryan (2001) also found that autonomy supporting classrooms lead students to have more internalized motivation for schoolwork, to be better adjusted, and to have higher self-esteem. These effects have been found to be consistent across cultures and educational levels (Deci & Ryan, 2008a).

Similar effects to what have been found within schools with respect to autonomous regulation have also been found within workplaces. Workplaces that support autonomy have

been shown to have employees who are more intrinsically satisfied with their work, more trusting of management, more engaged in their job, have higher performance ratings and experience greater psychological wellbeing (Baard, Deci, & Ryan, 2004; Deci, Connell, & Ryan, 1989; Lynch, Plant, & Ryan, 2005).

Lastly, studies have also shown that when parents encourage autonomy within their children, these children perceive themselves as more competent, are better adjusted, and are more autonomously motivated than children who are raised in control orientated homes (Grolnick & Ryan, 1989). Autonomy supported children have also been shown to be less shy and anxious, act out less, have fewer learning problems, get better grades, do better on tests, and go on to develop stronger intrinsic aspirations for personal growth, meaningful relationships, and community contributions (Grolnick & Ryan, 1989; Williams et al., 2000; Deci, 2000). As well, teenager's parental autonomy support has been shown to be negatively correlated to TV viewing, drinking alcohol and using marijuana, and having sexual intercourse (Williams, Hedberg, Cox, & Deci & Ryan, 2000).

These are just a sample of the outcomes that result from an autonomous motivational orientation. Deci and Ryan (2008a), also reported positive life and behavioural differences in healthcare, sport and leisure, and friendships and relationships.

In summary, Deci and Ryan (1980; 1985) discuss how the environment, such as rewards and perceived competence, and an individual's beliefs and personality, such as their locus of control and sense of self, interact to determine a person's primary motivational orientation, as well as their behaviours, either self-determined (conscious) or not. In this, they discuss that people have different causality orientations (autonomous, control, or impersonal) which form a framework for the individual's world, and these personality orientations interact with their experiences to result in their motivational orientation. SDT could be related to deviance and risk factors due to the possibility that certain causality orientations (such as the controlled and impersonal orientations) may act as risk factors for engaging in deviant behaviours. In addition, SDT could help in regard to understanding why individuals engage in the behaviours that they do. Finally, SDT provides an explanation of how the factors of autonomy, competence, and relatedness are integrated with each orientation, giving those who work with individuals who engage in deviant behaviour a model for increasing self-determination and autonomy. This, in

turn, would theoretically lead to lower engagement in deviant behaviours as these individual's needs would then be met within themselves instead of seeking outside satisfaction.

Gender and Deviant Behaviour

As mentioned previously, a significant difference between males and females engaging in criminal activities has been recorded consistently for decades (Steffensmeier & Allan, 1996). Recently, females have been reported to account for approximately 25% of the police-reported crime in Canada (Savage, 2019).

According to LaGrange and Silverman (1999), gendered differences are partially due to males generally maintaining a lower level of self-control and having higher amounts of potential opportunities. These researchers defined low self-control to include risk-seeking, impulsivity, temper, being present-oriented and careless, which align with some of the characteristics in Deci and Ryan's (1985, 2000) controlled and impersonal orientations. Although self-control and opportunity were found as significant factors for deviance, the authors found that gender in itself also remained a significant factor. In other words, according to LaGrange and Silverman (1999), that there is something about being male or female that is unaccounted for in their theory.

To further support and build on the result shown by LaGrange and Silverman (1999), Daigle et al. (2007) found that specific risk factors influenced males and females differently. Daigle et al. (2007) found that many of the risk factors studied were stronger predictors of deviance for males than females. Factors such as attention deficits and attachment to peers were shown to be stronger risk factors for males, whereas factors such as depression, forced sex and attachment to school were shown to be more significant predictive factors for females than males. Although there are gender differences, Daigle et al. (2007) have also found that there are common factors between the two genders. Factors such as victimization and stress (such as negative life events and unhealthy relationships) are considerable factors for both males and females.

In a similar study to the ones above Fagan et al., (2007) suggested that males' greater involvement in delinquent behaviours is due to a higher association for certain risk factors to lead to delinquency in males than they are associated with for women. Fagan et al. (2007) also found that males self-reported higher levels of risk exposure and lower levels of risk protection than females. According to these researchers, the gender difference in delinquency could be due

to males experiencing more risk factors than females, while also having fewer protective factors than females.

Finally, Abajobir et al. (2017) examined this effect specifically by focusing on the risk factor of maltreatment in one's childhood in order to explain participation in deviance. These researchers found that of the children who were exposed to substantial maltreatment, this risk factor only made a significant difference in the number of males engaging in deviance. Maltreatment (physical abuse, emotional abuse, neglect) alone resulted in a deviance rate for males over three times higher than the non-maltreated subjects. These researchers did not find any difference in the deviance rates for females that have been maltreated. These studies taken together illuminate that there are fundamental differences in what drives males and females and that risk factors do not act equivalently for each gender. In addition, it has been shown that males are more likely to have significantly lower levels of self-control across many domains, and to also be affected by this loss of self-control more than women are. Extrapolating from this, since there are fundamental differences in the critical risk factors for males and females, it could be theorized that males and females are likely to represent different self-determination orientations, with males showing dominance in the control and impersonal categories, and females in the autonomous category.

Risk Factors and Deviant Behaviours

Risk factors are generally described as "those characteristics, variables, or hazards that, if present for a given individual, make it more likely that this individual, rather than someone selected from the general population, will develop a disorder" (Mrazek & Haggerty, 1994, p. 127). Some well-known examples of risk factors are that smoking is a risk factor for developing cancer, distracted driving is a risk factor for getting into an accident, and not brushing your teeth is a risk factor for getting a cavity. Similarly, there are also known risk factors that are directly related to engaging in deviant and/or criminal behaviours.

Any number of risk factors can increase an individual's chance of engaging in deviant and/or criminal behaviour, however, they do not determine if someone will engage in those behaviours with any certainty whatsoever. Nevertheless, with each additional risk factor an individual has, the likelihood that they may participate in deviant behaviours increases (Shader, 2001). For example, an individual who has experienced ten risk factors is approximately ten times more likely to behave in a deviant manner than someone who has only experienced one.

However, Wong and Gordon (2006) argued that certain risk factors could be considered stronger influencers than others for any given individual. Within the Violence Risk Scale (VRS) and its' varieties, Wong and Gordon (2006) included a Likert-type scale (0-3) for each risk factor they identified. Individuals are then rated on how closely a certain risk factor applies to them. For example, within the VRS one of the risk factors that could lead to violent, criminal behaviour is identified as "substance abuse: substance abuse problems that have been linked to violence" (Lewis et al., 2012, p. 162). For this particular example, someone could have a lot of drug use that is related to violence (and therefore would be scored a 3), or they could have very little drug use that is related to violence (for a score of 0). This shows that it is important to remember that it is not only the quantity of risk factors that matters – it is also the quality.

Wong and Gordon (2006) also discussed how risk factors could either be dynamic or static. Dynamic risk factors are things that individuals can change – for better or worse. The previous substance abuse example is considered to be a dynamic factor. On the other hand, static risk factors are factors that individuals cannot change – such as childhood trauma or their age. Other risk factors that have been identified that increase the risk of engaging in deviant and/or illegal behaviours include associating with deviant peers (Fergusson, Swain-Campbell, & Horwood, 2002), an unstable upbringing (Shader, 2001; Webster-Stratton & Taylor, 2001; Lewis et al., 2012), and living in poverty (Shader, 2001), among many others.

Webster-Stratton and Taylor (2001) theorize that all of the risk factors currently known regarding antisocial behaviours are related to one of four categories: parenting factors, individual (or child) factors, contextual and/or family factors, and school and/or peer factors. Shader (2001) adds one more distinct category to this list: community factors. According to Webster-Stratton and Taylor (2001), parenting factors include things such as harsh and ineffective parenting skills, which matches with Lewis et al.'s (2012) factor of stability of family upbringing. Individual factors include things such as poor social skills and impulsivity, while contextual and/or family factors include poverty and parent deviance, among many others. According to Lewis et al. (2012), Shader (2001), and Webster-Stratton and Taylor (2001) school and/or peer factors include things such as deviant peers, stability of relationships and academic failure. Finally, community factors include community support and neighbourhood disorganization (Lewis et al., 2012; Shader, 2001). As illustrated, there are many unique risk factors that can increase the likelihood of an individual engaging in deviant and/or criminal behaviours.

Just as there are a multitude of potential risk factors, there are also a multitude of theories related to risk factors and deviance. Out of all of the possible theories, the Risk-Need-Responsivity model and the Good Lives model are two well-known models of applying risk factors to offender treatment (Andrews, Bonta, & Hoge, 1990; Ward & Stewart, 2003). While this particular study does not focus solely on criminal offenders, the models which are used in offender treatment are equally applicable to instances of less severe antisocial behaviours. These models illustrate how risk factors interact with an individual's world in a way that ultimately could lead said individual to engaging in deviant and/or criminal activities.

Risk-Need-Responsivity Model of Offender Rehabilitation

The Risk-Need-Responsivity (RNR) model of offender rehabilitation was introduced in 1990 by Andrews et al., (1990), and in the early 2010s was referred to as the "only empirically validated guide for criminal justice interventions" by Andrews, Bonta, and Wormith (2011) and Polaschek (2012, pg. 1).

Within this model, there are three main tenants: 1) Risk: The level of programming and intensity of intervention used should match the risk level of the individual. For example, intensive treatment should be reserved for high-risk offenders, while low-risk offenders respond better to minimal intervention. Examining relevant risk factors is often used to help determine risk. 2) Need: Treatment for offenders should include targeting the offender's criminogenic needs which are related to criminal behaviour. In other words, interventions should include examining and meeting the needs that the individual is attempting to satisfy through offending. When these needs are met in other ways, the likelihood of recidivism will decrease. 3) Responsivity: Interventions should be matched to the offender's learning styles and abilities.

Within the risk principle, there are two parts. The first is that at any given time, people are not equivalent in their likelihood to engage in criminal behaviour. In addition, this likelihood can be determined by examining the risk factors that are pertinent to a given individual. Consequently, focusing treatment on those who are high-risk offenders will result in a larger decrease in crime, rather than focusing on low-risk offenders. The second aspect of the risk principle is that treating high-risk offenders requires longer, broader, and more intensive treatment (Andrews et al., 1990; Polaschek, 2012).

As discussed above, the need principle focuses on the offender's criminogenic needs. More importantly though, this principle focuses on the targets of change. These are needs and/or risk

factors which can be changed, and when changed, will result in a reduction in recidivism (Andrews et al., 1990). According to Andrews et al., (2011), there are eight central types of risk and/or need factors, which encompass anti-social attitudes, anti-social activities, anti-social temperament/personality, a history of anti-social behaviour, family/marital circumstances, social/work, leisure/recreation, and substance abuse. Within these factors, RNR theory only included one static factor – a history of anti-social behaviour. This means that each of the other needs are dynamic and therefore, can be changed (Polaschek, 2012).

Lastly, Andrews et al., (1990) stated that interventions should match the offender's abilities and learning styles. As well, interventions should be interactive and designed for each individual in a way that will engage them. For example, programs for women or youth should be centred around their needs, experiences and preferences, rather than being centred around men's needs (Polaschek, 2012).

Other important-to-note aspects of RNR include its' propensity for professional override, where clinicians are able to determine which aspects of RNR are best for a given situation, which allows for flexibility within the model, its' recognition of the importance of offender motivation, and its' strength-based approach to enhancing self-management and problem-solving abilities within individuals (Andrews et al., 2011).

Good Lives Model of Offender Rehabilitation

A second well-known model of offender treatment is the Good Lives Model of offender rehabilitation (GLM) (Ward & Stewart, 2003). The GLM is similar to RNR in many ways, but is also distinctly different. Both the GLM and RNR models depend on the basic principle of examining the offender's needs. However, the GLM argues that the offender's innate psychological needs, such as those for relationships, competence, and autonomy that enhance an individual's life should be the focus of treatment. Ward and Stewart's (2003) explanation of needs is directly based from Deci and Ryan's (2000) set of basic psychological needs. Parallel to Deci and Ryan (2000), Ward and Stewart theorize that when an individual's basic psychological needs are met, they will become internally motivated. However, Andrews et al. (2011) commented that just because an individual is internally motivated and have these needs met, does not inherently mean that they will behave in a prosocial fashion. On the contrary, individuals can be internally motivated and still engage in harmful activities, such as finding creative ways to get away with criminal pursuits, or having fulfilling relationships with other

deviant peers or through abusing significant others. Due to this, the GLM now also includes a second postulate: to also manage offender risk (Ward, 2010). Both GLM and RNR are also comparable in this way, in addition to managing offender needs.

The GLM operates on the premises of integrating the offender's personal preferences and values, which are intended to help motivate individuals to live more prosocial lives, and providing offenders with the internal and external abilities and supports to be able to remain committed to their treatment plan (Whitehead, Ward, & Collie, 2007). A large majority of the GLM is focused around primary goods – these are defined by Whitehead et al., (2007) as "activities, experiences, or situations that are sought for their own sake and that benefit individuals and increase their sense of fulfillment and happiness. Examples of primary human goods include knowledge, relatedness, autonomy, play, physical health, and mastery" (pg. 3). In other words, primary goods are those that meet human's innate psychological needs as suggested by Deci and Ryan (2000) of relatedness, competence, and autonomy, and that would, in theory, lead an individual to become more intrinsically motivated, and less interested in crime. As well, by integrating the offender's preferences and values, treatment is more likely to be seen as applicable and useful to them, which in turn would lead to higher levels of participation in treatment (Whitehead et al., 2007).

While the main focus of GLM is based on offenders attaining these primary goods, the GLM does not refute risk factors or criminogenic needs. However, contrary to RNR, the GLM views criminogenic needs as obstacles to possessing primary goods, rather than being a direct influencer of offending (Andrews et al., 1990; Whitehead et al., 2007). According to the GLM, individuals become involved in crime because they are attempting to acquire primary goods through anti-social methods. The GLM attempts to transform those anti-social methods to achievable, prosocial ways to meet the offender's psychological needs (Whitehead et al., 2007).

In the case example provided by Whitehead et al. (2007) it was demonstrated that the GLM focused on two aspects: 1) motivating the client to examine his/her goals and how attaining these goals would impact them, and 2) examining how the offender's criminogenic needs relate to their ability to achieve said goals. In short, GLM states that although the offender's goals in treatment may not necessarily be criminogenically related (i.e. to feel accepted), the methods that these individuals were using to attempt to achieve those goals were criminogenic in nature (i.e. being a member of a gang). Consequently, according to GLM, if you teach offenders and others

who engage in deviant behaviours how to achieve their goals in prosocial, attainable ways, it will eliminate the criminogenic behaviours on part of the offender (Ward & Stewart, 2003; Whitehead et al., 2007).

Although RNR and GLM differ on specificities, the importance of motivation, as described above, is apparent in both of these theories. The integration of the importance of offender motivation in RNR is primarily present within the responsivity and professional override principles, whereas GLM is directly tied to Deci and Ryan's (2000) Self-Determination Theory. Although RNR does not consider any motivational theory in particular, one could easily integrate SDT. In addition, each of the three theories, STD, RNR, and GLM, all postulate that if the offender's needs are met in a pro-social way (whichever needs those may be), the offender's motivational subsystem may shift and they will begin to engage in society in more prosocial ways. Subsequently, it could be predicted that an individual's specific motivational characteristics could act as a risk factor for engaging in deviant behaviours.

Definitions

This section will provide operationalized definitions for the central terms used throughout this study.

Deviant or antisocial behaviours: Behaviours that are harmful (i.e. lying, bullying, stealing, assault, etc.), go against the generally agreed-upon norms in society, and that elicit a negative response (Cho, Martin, Conger, & Widaman, 2010; Reavy et al., 2012).

Self-Determination Theory (SDT): A theory developed by Deci and Ryan (1980, 1985, 2000, 2008, 2008b) intended to explore the phenomena of intrinsic motivation, extrinsic motivation, and amotivation. Furthermore, SDT examines how each type of motivation interacts with an individual's personality (i.e. locus of control, self-esteem) to create three distinct motivational orientations (or subsystems), known as the autonomous orientation, the controlled orientation, and the impersonal orientation, which co-exists on a spectrum, ranging from most to least self-determined, respectfully. Self-determination is described as synonymous with autonomy, fruition, and self-empowerment. Deci and Ryan (1980) postulate that at any given time, each individual has at least some of each orientation, as well as a dominant orientation.

Intrinsic motivation: Intrinsic motivation involves participating in activities because they are inherently interesting and satisfying to the individual and are often engaged in in order to meet the innate psychological needs of competence, autonomy, and relatedness (Deci & Ryan, 2000).

Extrinsic motivation: Extrinsic motivation involves participating in an activity in order to attain a separate, exterior outcome or due to external controls, rather than due to personal interest (Deci and Ryan, 2000).

Amotivation: Amotivation is the absence of motivation. This occurs when an individual does not value an activity, does not perceive that they are competent enough to accomplish it, or that they do not believe a behaviour will result in a desired outcome (Deci and Ryan, 2000).

Autonomous orientation: Autonomous motivation is the most internally regulated type of motivation, and individuals who possess this type of motivation have the basic psychological needs of competence, autonomy, and relatedness met. Individuals who are autonomous also have an internal locus of control and organize their priorities based on their personal goals and interests (Deci & Ryan, 1985; 2000; 2008b).

Control orientation: Control motivation is mainly externally regulated, and those who possess this type have most of their psychological needs met, minus autonomy. Individuals who are primarily control orientated have an external locus of control and organize their priorities based on external factors, such as prestige and pay (Deci & Ryan, 1985; 2000; 2008b).

Impersonal orientation: Individuals that fall within the impersonal orientation believe that many things are out of their control and that they cannot control their own lives. These individuals often follow expectations, not because they are controlled by them, but because they lack the intentionality needed to do something different (Deci & Ryan, 1985; 2000).

Risk factors: Risk factors are specific constructs that, when present, increase the likelihood that a given individual will develop a disorder or behave in a certain way (Mrazek & Haggerty, 1994).

Risk-Need-Responsivity model of offender rehabilitation (RNR): A three-part model devised by Andrews et al. (1990) as a treatment protocol for criminal offenders which includes examining relevant factors in order to determine the offender's risk of reoffending, targeting the offender's criminogenic needs which are related to the criminal behaviour, and matching interventions to the offender's learning styles and abilities.

Good Lives Model of offender rehabilitation (GLM): A model of offender rehabilitation developed by Ward and Stewart (2003) that follows the ideology that the offender's innate psychological needs, such as those for relationships, competence, and autonomy should be the focus of treatment, as well as offender risk management. According to the GLM, once an

individual's basic psychological needs are taken care of, they will become prosocial and responsible citizens.

Criminogenic needs: An individual's needs which are related to engaging in criminal behaviour in order to meet said needs (Norwood, n.d.).

Primary goods: Activities that provide individuals with an increased sense of fulfillment and that are sought out specifically for that reason. Primary goods, in theory, would lead an individual to become more intrinsically motivated, and less interested in crime (Whitehead et al., 2007).

Chapter 3: Methods

Overview

Chapter 3 will discuss the methodology that was used in the present study, beginning with an overview of the study, followed by descriptions of the measures used for data collection and analysis that was used to test the proposed hypotheses. The purpose, the motivational orientations considered, and the hypotheses for this study are all outlined within the overview section of this chapter. Data collection methods involving an online survey and data investigation consisting of a Chi-square Test for Independence and a multivariate analysis of variance (MANOVA) are also examined in detail in their respective sections below.

The Proposed Study

This study intended to examine the relationships between the weighting of specific genders on certain types of self-determination. In addition, this study also aimed to identify which motivational orientations could be considered a risk factor for engaging in deviant and/or criminal behaviours through exploring the interactions between the type of self-determination orientation (autonomous, controlled, and impersonal) and gender, and the number and severity of deviant acts an individual may engage in and the amount of risk factors present for that individual.

As discussed in the previous chapter, there are three types of motivational orientations as described by Deci and Ryan (1985, 2000): autonomy, control, and impersonal. According to Deci and Ryan (1985; 2000), individuals possess variations of each of the three orientations, however, at any given time, individuals tend to possess one dominant orientation over the others. Due to this supposition, Deci and Ryan (1985) were able to create the General Causality Orientation Scale, which will be explained in further detail below.

This study aimed to merge what is known about Self-Determination Theory, gender, deviance, and risk factors. Gender was shown to have differing effects on deviance, due to factors such as a disparity in determinant risk factors for males and females, and due to males engaging in more control or impersonal behaviours (i.e. lower levels of self-control) (Abajobir et al., 2017; Daigle et al., 2007; Fagan et al., 2007; LaGrange & Silverman, 1999).

Two of the possible risk factor theories (RNR and GLM) were also discussed in detail above. In both of these, motivation is considered a powerful influencer in the treatment of antisocial behaviour in varying ways (Andrews et al., 2011; Ward & Stewart, 2003). Extrapolating from

this, it could be reasonable for motivation to play a role as a risk factor in deviance as well (Deci & Ryan, 2000).

Although there has been a multitude of studies done on gender, deviance, and risk factors, there have been few or no published articles that examine the relationship between self-determination as a potential risk factor, gender, and antisocial behaviours. As outlined at the beginning of this study, deviant acts have a propensity for leaving financial and emotional damages in their wake. As well, little is known regarding gender differences regarding both self-determination and deviance. Therefore, research that propels the collective knowledge forward on risk factors and deviance is continuously valued. The relationship between self-determination and risk factors will be examined in order to ensure convergent validity between the two concepts. In addition, the relationship between gender and self-determination will be isolated and examined in more depth. By examining if certain types of orientations are contributed to more by certain genders may provide some insight on the discrepancy of reported crimes committed between males and females. Finally, the relationship between self-determination and gender together, and deviance will also be examined. Deviance will be measured as both the severity of deviant acts and the number of deviant acts committed in the past year. While this particular study is intended as exploratory research, it is hoped that this study can inspire supplementary studies in the forensic psychologic field in the future.

Research Questions

This study aims to explore the relationship between each self-determination category (autonomous, controlled, and impersonal) and gender. This includes examining the weighting of each gender on each of the types of self-determination, as well as exploring the interactions between type of self-determination orientation and gender with the number and severity of deviant acts an individual may engage in and participant's amount of risk factors. Subsequently, this study contains three main hypothesizes and two sub-hypothesizes: first, there will be a significant relationship between gender and self-determination. More so, it is hypothesized that the autonomous orientation will be made up primarily of females, while the other two orientations (controlled and impersonal) will primarily consist of males.

Relating to the second research question, it is argued that there will be a significant relationship between an individual's amount (or otherwise known as type) of self-determination (measured by their dominant motivation orientation) and their engagement in deviant activities.

In particular, it is hypothesized that lower levels of self-determination will result in higher amounts of deviant or antisocial behaviours. Further, not only will specific types of self-determination lead to more antisocial behaviours, but they will also lead to more extreme antisocial behaviours as well. Specifically, it is theorized that two motivation orientations in particular that will be associated with these effects: the control and the impersonal orientations. It is also hypothesized that gender will interact with self-determination and deviance, in particular, decreasing the strength of the relationship between self-determination and deviance for females. Lastly, it is theorized that there will also be a significant interaction between the type of self-determination and the number of risk factors present. Specifically, it is hypothesized that lower levels of self-determination (such as the controlled and impersonal orientations) will result in higher amounts of self-reported risk factors. Gender is also hypothesized to interact with this relationship in a similar way as described above.

Participants

According to a sample power calculation done in G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) using $p = 0.05$ and a power of 0.80 a minimum number of 128 participants should be included in this study for a medium effect size of 0.25. A medium effect size was chosen due to the actual effect size being unknown until after data is analyzed, and a medium effect size being the middle of the range.

However, data from a convenience sample of 432 participants was collected for this study in order to produce the most accurate results. Participants included were 18 and over, and both males and females were able to participate in an online self-report survey through Survey Monkey.

The survey package consisted of four parts: demographic information, the GCOS, a modified version of the DAS, and a modified version of the VRS. Due to the type of data being collected, an online self-report survey package was the most likely method to ensure the greatest participant engagement possible, as participants were not be required to attend a physical study and could complete the survey on their own time. Participants were invited from the University of Saskatchewan's undergraduate research participation pool (SONA) and the University of Saskatchewan PAWS online student centre. The SONA system allows undergraduate students to sign up for studies that interest them in exchange for bonus credits in one of their classes and allows for unbiased data collection from the researchers. Since students are only required to be

taking a least one course in psychology to access the SONA systems, it is possible for students from many different interest areas to participate in these studies. Students who participate through PAWS (online student centre) were entered into a draw for a $10 Tim Hortons e-gift card.

Measures

Self-Determination

The General Causality Orientations Scale (GCOS) was used to measure a participant's relative degree of autonomy, controlled, and impersonal orientations (Deci & Ryan, 1985; see Appendix A). The GCOS is a survey that consists of a number of vignettes and three items for each vignette. Each of the three items corresponds with a motivation orientation. The participant is instructed to read to vignette and then rate how likely they would be to respond in each of the three ways on a Likert scale from 1 – 7 (1 being least likely, 7 being most likely) (see Figure 3.0). Ultimately, within each vignette, the respondent is indicating how likely they would be to respond in an autonomous, controlled, and impersonally consistent manner. At the end of the survey, respondents are given a score for each of the orientations. The highest score is that individual's dominant orientation at that time, followed by the other two scores and orientations, respectfully.

For the purpose of data collection, each participant's dominant orientation was given a score of 1, with the other types receiving scores of 0. There are two versions of the GCOS; the 12-vignette version (with 36 items) and the 17-vignette version (with 51 items). The 17-vignette version was created to also include an additional five vignettes that focused on social interactions, such as "when you and your friend are making plans for Saturday evening, it is likely that you would…" (see Appendix A). In order to ensure the most accurate and generable results, the 17-vignette version of the GCOS was utilized for this study (see Appendix A). The GCOS has been shown to be internally consistent (α = .75), have good test-retest reliability (r = .74) over two months, and behave as expected in correlation with other theoretically related constructs (Deci & Ryan, 1985).

10.You are embarking on a new career. The most important consideration is likely to be:

a) Whether you can do the work without getting in over your head.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) How interested you are in that kind of work.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Whether there are good possibilities for advancement.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

Figure 3.0. An example of a vignette and three items from the GCOS (Deci & Ryan, 1985).

Deviant/Antisocial Behaviours

The Delinquent Activities Scale (DAS), which is used as a binary self-report measure of delinquency, was used as a baseline source for identifying the amount and severity of deviant behaviours (Reavy et al., 2012). However, since the current study is more concerned about deviant rather than criminal behaviours, this scale was modified slightly to match the needs of this study. Severely antisocial items such as 'been involved in gang fights' were changed slightly to more pertinent items such as 'been involved in multiple fights' and items such as 'engaged in any other potentially minor illegal or deviant activities that have not been discussed above (i.e. drinking in public, not following posted rules, parking in no-parking areas, etc)' were added in order to supplement the questionnaire (see Appendix B.1). As well, this scale is interested in whether or not these actions were done under the influence of alcohol or drugs. This particular study is not interested in this, so that aspect of the DAS was removed. Participants were instructed to indicate if they either have or have not participated in the given activities in the last 12 months. The DAS does not account for how frequently an individual participates in the same activity.

The amount or frequency of deviant behaviours was found by calculating the mean number of times any given participant answered "yes" to engaging in any of the activities. In order to assess for severity, items from the DAS were weighted according to current Canadian penalties, such as getting a warning for skipping work to a fine for distracted driving to incarceration for dealing drugs or theft, by separating them into five categories (Government of

Canada, 2019) (see Appendix B.2). Participant's answers were coded, respectfully, into one out of the five categories. Finally, the mean severity of behaviours was calculated for each participant with the coded values.

The DAS has been shown to have an internal consistency of $\alpha = .69$ for generalized delinquency and significant test-retest reliability ($r = .204$, $p = .006$). The researchers did note, however, that the low retest score could be due to a number of factors: a long retest interval (eight months), intervening treatments, or that the scales were intended to measure current and easily changeable behavioural patterns, not relatively stable personality traits. The DAS showed evidence of good construct validity when examined in relation to other relative factors (Reavy et al., 2012; Reavy, Stein, Quina, & Paiva, 2014).

Risk Factors

In order to assess the role of self-determination as a risk factor, its' relationship to other risk factors should be considered in order to examine its' convergent validity. In other words, if self-determination acts in a similar way as other risk factors, and therefore could potentially be considered a risk factor, it should have a distinct relationship with other well-known risk factors. Specifically, in order to show support for convergent validity for this, low self-determination should be related to an increased number of risk factors (Sage Publications, 2018).

In order to measure convergent validity, participants completed a modified version of the Violence Risk Scale (VRS) (Lewis et al., 2012). The VRS consists of 6 static and 20 dynamic factors, which are rated on a Likert type scale from 0 (very rarely) – 3 (very often). Typically, the items on this scale are rated by clinicians, but for the purpose of this study, they will be self-reported by participants. Similar to the DAS, since the current study is interested in deviance in the general population, rather than violent behaviours in criminal populations, some of the VRS items were modified slightly or may be replaced with more appropriate items. For example, items such as "are there any substance abuse problems linked to violence?" will be modified to read "do you have any substance use problems to the point where it creates issues, causes violence, or prevents you from fulfilling your responsibilities?", and items such as "age at first violent conviction" will be modified to "number of times you've been convicted of an offence?" to match the needs of the current study and its intended population. As well, items such as "prior release failures" and "security level at release" were removed from the survey, while more pertinent risk factors examining participants' outlook on education and family stress were added

(see Appendix C). Nevertheless, the VRS still acts as a strong primary source for the identification of other possible risk factors, with an internal consistency of $\alpha = .93$ and interrater reliability of $r = .93$ and $r = .84$ (Gordon, 1998; Wong & Gordon, 2006). As well, the VRS has been shown to be successful in predicting recidivism anywhere from 1 to 4 years later (Wong & Gordon, 2006).

Due to the VRS being a Likert-type scale which is typically administered by clinicians, participants were given the descriptions of each of the values (0-3), instead of the values themselves. These descriptions were taken from the explanation of the VRS provided by Wong and Gordon, initially provided in the VRS manual (1999-2003) and later in a study assessing the validity and reliability of the VRS (2006). For example, for the question "do you have any substance use problems to the point where it creates issues, causes violence, or prevents you from fulfilling your responsibilities? (i.e. substance dependence, substance abuse)" the participants were given the following options: No (0), I occasionally use substances to the point where it creates problems or prevents me from fulfilling all of my responsibilities (1), I sometimes use substances to the point where it creates problems or prevents me from fulfilling all of my responsibilities (2), Yes - I often or always use substances to the point where it creates chronic problems and prevents me from fulfilling my responsibilities (3).

All items or modified versions of the items (dynamic and static) were included in the present study. When the VRS is used for clinical purposes, the static scores would be scores that would remain the same over time, while the dynamic scores are items that can be used to inform effective treatment, as these are things that can be changed (Wong & Gordon, 2006). However, both dynamic and static scores are included each time the VRS is used, as both types of risk factors always have a possibility of being present in an individual's life. Therefore, both were included in this study and all risk factors were treated equally.

In regards to the above modifications, every time items from a scale are changed or omitted, it can affect the validity and reliability of said questionnaire (Sauro, 2016). However, it was chosen to add, change, or omit certain items in the DAS and VRS in order to increase content validity (Sauro, 2016). In regards to the DAS, there were not any items removed. However, items were changed and added to better fit the context of the research and the population. Items were also added in order to measure additional items that could be considered deviant and that were associated with items that were already in the questionnaire (i.e. excessive

drinking or using certain drugs). In regards to the VRS, items were removed or changed to again better fit the population (offender population vs the general public). Two items were added that were also found to be considered risk factors in other research, however, were not included in the VRS (perceived importance of education and familial stress) (Shader, 2001). Although removing and adding items would change the validity and reliability of the VRS in the context of offender risk assessments, this scale was not being used in a context to predict an individual's re-offending, but rather solely to measure the risk factors an individual may have.

Procedure

Convenience sampling through the University of Saskatchewan's PAWS and SONA systems was utilized to recruit participants. Before participants began the study, they were ensured that their data would be de-identified and kept strictly confidential. As well, participants were informed that they could quit the study and ask to have their data withdrawn at any time, without any consequences, and would still receive appropriate compensation for their time. Finally, participants received a full explanation of the study and its' importance before they were given the opportunity to electronically sign an informed consent or to cease with the study. Once the informed consent process was complete, students were then welcomed to complete the survey package described in the *participants* section above. The survey package took participants approximately 15 minutes to complete.

Data Analysis

In order to investigate the hypotheses, two distinct data analysis methods were used. The Chi-square Test for Independence was calculated by hand using the book *Using Basic Statistics in the Behavioral Sciences* (2nd ed), (Evans, 1992). The Chi-square was computed by hand due to researcher preference. SPSS Version 26 (IBM Corp., 2019) was used to calculate the MANOVA and its' assumptions. A Chi-square analysis was chosen due to its' non-parametric characteristics, which "allows us to make inferences about population frequencies from sample frequencies" (Evans, 1992, pg. 309). Chi-square is also used to test the frequencies of categorical variables, meaning that it compares the expected outcome to the observed outcome (Evans, 1992). In particular, the Chi-square Test for Independence was chosen in order to analyze if self-determination and gender are dependent. In this case, the expected hypothesis would be that self-determination and gender are independent, meaning that there is no significant relationship

between them, and the alternative hypothesis would be that gender and self-determination are dependent, meaning that there is a significant relationship.

A two-way MANOVA was also chosen for this analysis due to its ability to compare multiple independent variables with numerous levels to multiple dependent variables. As well, MANOVA allows researchers to compare independent variable levels to each other (i.e. autonomous orientation to control orientation), which is essential in this analysis to determine which type of self-determination results in the highest amount and severity of deviant acts comparative to the other motivation orientations. For this analysis, the independent variables were the type of self-determination, which is comprised of three levels: the autonomous orientation, the control orientation, and the impersonal orientation, and gender, which has two levels: female and male. Subsequently, the dependent variables were the number of deviant behaviours engaged in, the severity of the deviant behaviours engaged in and participant's scores on the VRS. By examining participant's scores on the VRS, it is possible to observe the interactions between self-determination, gender, deviance and other well-known risk factors in order to have a more complete view of the relationship between self-determination and deviance.

As part of the data analysis, the statistical assumptions for a MANOVA were checked to see if they were met (Field, 2013). Box's Test of Equality of Covariance was used to determine that the assumption of homogeneity of covariance matrices was met. Levene's Test of Equality of Error Variances was also checked for non-significance ($p<0.5$). Multivariate normality of residuals and random sampling have also been assumed. Finally, Wilk's Lambda was chosen to determine the differences of variances between groups.

Chapter 4: Results

Overview

This chapter is intended to analyze and present the results of the data collected for this study. Specifically, this section will examine the interactions between type of self-determination orientation (autonomous, controlled, and impersonal) and gender, and the number and severity of deviant acts an individual may engage in and participant's amount of risk factors. An individual's self-determination orientation was measured by the General Causality Orientation Scale (GCOS) (Deci and Ryan, 1985), while the number and severity of deviant acts were measured through the Delinquent Activities Scale (DAS) (Reavy et al., 2012), and, finally, an individual's amount of risk factors was measured by the Violence Risk Scale (VRS) (Wong & Gordon, 1999-2003). This author made three main hypotheses and two secondary hypotheses which were tested:

1) Gender (male, female) will contribute to each of the self-determination orientations in a distinct way. Specifically, the autonomous orientation will include primarily females, while the control and impersonal orientations will include males as the majority.
2) Lower levels of self-determination (i.e. the control and the impersonal orientations) will result in higher amounts and severity of deviant behaviours.
    a. Gender will interact with self-determination and deviance, in particular, decreasing the strength of the relationship between self-determination and deviance for females.
3) Lower levels of self-determination (i.e. the controlled and impersonal orientations) will result in higher amounts of self-reported risk factors.
    a. Gender will also interact with self-determination and risk factors by decreasing the strength of the relationship between self-determination and risk factors for females.

Descriptive Statistics

442 individuals participated in this study. However, eight participants requested for their data to be withdrawn and two participants were excluded from the data analysis due to indicating they were under 18 years of age. Descriptive statistics including gender, age, ethnicity, year of study, and program of study were collected in order to be able to describe the sample population in detail. The remaining sample (N=432) was predominantly female (77%, N = 333), Caucasian (64%, N=275), in either their first (26%, N=111) or second (28%, N=119) year of university, in

either Arts (33%, N=142) or Science (37%, N= 157) as their field of study, and had a median age range of 18-24 years with age groupings ranging from 18 to 54 years (see Appendix D).

Missing Data

18 participants were removed due to a significant amount of missing data, leaving 414 viable participants. Since the removed participants were a part of the population sample, they were included in the demographic statistics.

Outliers

Out of the 414 participants whose data was considered for analysis, nine participants had scores were over three standard deviations above the test means for the number of deviant acts, the severity of deviant acts, and the number of risk factors, leaving 405 participants to be included in the analyses below. These outliers were identified through a box plot graph. Therefore, these data points have been excluded from the Chi-square Test for Independence and the MANOVA analysis below, although they have also been included in the demographic analysis above.

Chi-Square Test for Independence

Research Question 1) Is there a significant relationship between each of the types of self-determination (autonomous, controlled, and impersonal) and gender?

Research Question One Results

The results for the Chi-square Test for Independence showed that there was not a significant result when comparing self-determination and gender, X^2 (2, N = 405) = 1.33, $p < .05$, critical value = 5.99. In other words, this means that self-determination and gender are independent and there is no one type of self-determination that any one gender is more likely to be included in. Table 4.1 and 4.2 show the observed and expected frequencies for this analysis, respectfully.

Table 4.1.

Observed Frequencies for Gender and Self-Determination

Gender	Autonomous	Controlled	Impersonal	Total
Female	292	11	11	314
Male	81	4	1	86
Total	373	15	12	400

Table 4.2.

Expected Frequencies for Gender and Self-Determination

Gender	Autonomous	Controlled	Impersonal	Total
Female	293	12	9	314
Male	80	3	3	86
Total	373	15	12	400

MANOVA Analysis

MANOVA Assumptions

Since a MANOVA is the intended method of analysis for research question two, the MANOVA assumptions must first be checked to ensure that running a MANOVA is recommended.

Box's Test of Equality of Covariance Matrices was not significant (p = .119), meaning that the assumption of homogeneity between groups was met for this analysis. Levene's Test of Equality of Error Variances (p<0.5) also showed non-significant results in all three variables assessed (number of deviant acts; p = .893, severity of deviant acts; p = .447, and the number of risk factors; p = .855), further supporting that the assumption of homogeneity between groups has been met. Due to a large sample size, the assumptions of multivariate normality of residuals and random sampling have been assumed.

Pillai's Trace was used to determine the differences of variances between groups, as all the assumptions of a MANOVA were met but the sample sizes were unequal. According to Field

(2013) in such situations, Pillai's Trace is the most robust test statistic when working with unequal sample sizes and the MANOVA assumptions are met. Due to these assumptions being met, a MANOVA can be used to examine the following research question:

Research Question 2) How do the types of self-determination orientations (autonomous, controlled, and impersonal) and gender interact with the number and severity of deviant acts an individual engages in, and the amount of risk factors present for each individual?

Research Question Two Results

The composite scores for self-determination by gender show a significant interaction effect (Pillai's Trace = .056, (F = 9, 1191) = 2.538, p = .007, Eta^2 = .019) (see Table 4.3). Examining this interaction closer shows that the effect of self-determination on the dependant variables was significant (Pillai's Trace = .032, F (6, 792) = 2.153, p =.046, Eta^2 = .016), meaning that self-determination accounts for 1.6% of variance in deviance and risk factors.

When between-subject tests were run, the interaction specifically between self-determination by gender and the number of deviant acts was shown to be significant F (3, 397) = 3.38, p = .018, Eta^2 = .025.

Separate univariate ANOVAs indicated non-significant self-determination effects on the number of deviant acts F (2, 397) = 1.91, p = .150, Eta^2 = .01, the severity of deviant acts F (2, 397) = 1.47, p = .231, Eta^2 = .007, and the amount of risk factors present F (2, 397) = .461, p = .631, Eta^2 = .002. Field (2013) explains that this phenomenon is due to the multivariate test considering the correlation between dependant variables, meaning MANOVA, rather than univariate ANOVAs, has more power to determine group differences. Additionally, the effect of the dependant variables on self-determination is further examined in a discriminate function analysis below. Gender does not show a significant interaction (Pillai's Trace = .0.21, F (6, 792) = 1.373, p = .223, Eta^2 = .01).

Table 4.3.

MANOVA Results

Variable		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Self-Determination	Pillai's Trace	.032	2.153	6.000	792.000	.046*	.016
	Wilk's Lambda	.968	2.148	6.000	790.000	.046*	.016
	Hotelling's Trace	.033	2.143	6.000	788.000	.047*	.016
	Roy's Largest Root	.019	2.504	3.000	396.000	.059	.019
Gender	Pillai's Trace	.021	1.373	6.000	792.000	.223	.010
	Wilk's Lambda	.979	1.371	6.000	790.000	.046*	.016
	Hotelling's Trace	.021	1.370	6.000	788.000	.224	.010
	Roy's Largest Root	.016	2.169	3.000	396.000	.091	.016
Self-Determination x Gender	Pillai's Trace	.056	2.538	9.000	1191.000	.007*	.019
	Wilk's Lambda	.944	2.541	9.000	961.477	.007*	.019
	Hotelling's Trace	.058	2.536	9.000	1181.000	.007*	.019
	Roy's Largest Root	.036	4.731	3.000	397.000	.003*	.035

*$p < .05$

Discriminant Analysis

A discriminant analysis was run on self-determination to further examine which level(s) or predictor variable(s) significantly affects the dependant variables. This analysis revealed two discriminant functions. The first function explained 67.3% of the variance, with a canonical R^2 = .0038, while the second function explained 32.7% of the variance, with a canonical R^2 = .0018 (see Table 4.4). Together these discriminant functions did not significantly differentiate the treatments groups (Wilk's Λ = .994, χ^2 (6) = 2.30, p = .890). Removing the first function also indicated in a non-significant result (Wilk's Λ = .998, χ^2 (2) = .754, p = .686) (see Table 4.5). The discriminate function plot showed that the first function discriminated the autonomous orientation group from the control orientation group, and the second function differentiated the impersonal orientation group from the prior two. However, as noted above, there were no significant differences found when comparing the two groupings. The F-ratios, means (M) and standard deviations (SD) are shown in Table 4.6 and Table 4.7, respectfully.

Table 4.4.

Discriminant Function Analysis Eigenvalues

Function	Eigenvalue	Percent of Variance	Cumulative Percentage	Canonical Correlation
1	.004	67.3	67.3	.062
2	.002	32.7	100.0	.043

Table 4.5.

Discriminant Function Analysis Wilk's Lambda

Test of Function(s)	Wilk's Lambda	Chi-square	df	Sig.
1 through 2	.994	2.301	6	.890
2	.998	.754	2	.686

Table 4.6

Univariate Analysis of Variance: F Ratios for Three Dependent Variables

Variable	Self-Determination	Gender	Self-Determination x Gender
	($F_{2, 397}$)	($F_{2, 397}$)	($F_{2, 397}$)
Number of Deviant Acts	1.91	.831	3.38*
Severity of Deviant Acts	1.47	.284	2.11
Amount of Risk Factors Present	.461	1.57	1.63

*p < .05

Table 4.7

Observed Means and Standard Deviations for Gender and Self-Determination Groups

Variable	Gender				Self-Determination					
	Male n=86		Female n=314		Autonomous n=377		Controlled n=15		Impersonal n=13	
	M	SD	M	SD	M	SD	M	SD	M	SD
Number of Deviant Acts	.093	.075	.085	0.69	.087	.071	.088	.065	.081	.084
Severity of Deviant Acts	.165	.158	.138	.138	.146	.145	.145	.121	.121	.138
Amount of Risk Factors Present	.454	.164	.409	.160	.419	.163	.467	.156	.405	.141

*p < .05

Summary

Throughout this chapter, there were two distinct research questions and three corresponding hypotheses that were examined. The first research question, pertaining to the relationship between gender and self-determination was examined through a Chi-square Test for Independence. This test found that gender does not significantly contribute to any one type of self-determination over other types.

The second research question was analyzed by a MANOVA. This question was intended to explore the relationship between self-determination and gender as independent variables, and deviance and risk factors as dependant variables. The MANOVA indicated that there was a small but significant group difference for the effects of self-determination related to the number of deviant acts, the severity of deviant acts, and the number of risk factors present. However, upon further inspection, follow up contrasts and discriminate analysis show there that is not a significant difference between the levels of self-determination. Gender was also found to not be significant in this analysis.

Chapter 5: Discussion

Overview

The purpose of this study was: first, to examine the relationship between gender and self-determination and second, to explore the interactions between self-determination and gender, and risk factors and deviance. Self-Determination Theory from Deci and Ryan (1985, 2000, 2008b) served as the foundation for this study. According to Deci and Ryan (2000), it could theoretically be possible that an individual's amount of self-determination (or type of motivation) could lead them to be more likely to engage in deviant activities, although this hypothesis has not been tested in the published literature reviewed for this study.

Gender differences in crime rates were also a fundamental point of interest throughout this study. Substantially disproportionate crime rates for males and females have been found consistently over decades of criminality research, with males historically reported to commit a considerably higher amount of crime than females (Steffensmeier & Allan, 1996). Specifically, in 2019, males were reported to carry out 75% of the crime in Canada (Savage, 2019). It has been historically shown that lower-level property crime, such as larceny or theft, accounts for the highest proportion of crime committed by females, while males typically commit more serious or violent crimes, such as assault or robbery (Statistics Canada, 2017; Steffensmeier & Allan, 1996).

Finally, risk factor models were also used as a basis in this study. Concepts such as the Risk-Need-Responsivity model by Andrews et al., (1990) and the Good Lives Model by Ward and Stewart (2003) both support the importance of risk factors and their crucial role in deviant behaviours. Hence, this study was born out of a desire to fill a gap in the literature examining the relationship between self-determination, gender, deviance, and risk factors.

There were three main hypotheses assessed in this study. The general overarching theme was to examine the relationships between self-determination, gender, deviance, and risk factors. More specifically, this study initially explored the relationship between self-determination and gender, followed by the relationships between self-determination and gender together and separately, and deviance and risk factors. This author hypothesized that females would be associated more so with the autonomous orientation, while males would be associated with the control and/or impersonal orientations. The general expectation for the last research question was that lower levels of self-determination would be associated with higher amounts and severity of

deviant behaviours and more risk factors present for any given individual, and that this would subsequently be influenced by gender, with males being associated with higher amounts of each of these factors compared to females.

The sample population (N=432) was inclusive to adult University of Saskatchewan students. Participants were asked to complete an online questionnaire, which was designed to measure their type of self-determination, the amount and severity of deviant acts they have engaged in in the recent past, and the number of risk factors currently present, along with demographic data such as age, ethnicity, and gender. Data analysis methods included a Chi-square Test for Independence and a MANOVA, which was subsequently followed up with contrasts and a discriminant analysis. Contrary to the expectations set forth above, no significant effects were found for either analysis. A more in-depth interpretation of each of the findings are discussed in the following sections.

Findings

Research Question One:

A Chi-square Test for Independence found that there were no significant effects related to gender and self-determination. In other words, this result shows that neither males or females are more likely to be included in or contribute to any one particular orientation over the others. This shows that the gender differential in deviance may not be influenced by a specific gender being generally more or less self-determined (i.e. autonomously motivated vs control motivated). This suggests that there are bigger effects at play and that self-determination may not have as big as an effect on deviance as originally theorized by Deci and Ryan (2000), at least in a university population. All in all, self-determination is unlikely to significantly account for the gender differences in crime.

Research Question Two:

The MANOVA analysis utilized to explore the relationship between self-determination and gender, to deviance and risk factors originally showed a significant effect between the levels of self-determination on deviant behaviours and risk factors. Between-subject tests showed that more specifically, there was a significant relationship between self-determination and the number of deviant acts reported. However, after follow-up contrasts and discriminant analysis, it was found that there were no significant differences between each of the groups. This phenomenon occurs in research regularly, as MANOVA gives the original variable (i.e. self-determination)

more power when considered all together (as a MANOVA) than when it is considered after being split into three groups (as multiple ANOVAs) (Field, 2013).

Although the effects are not significant, the general outcomes of this analysis are intriguing. Contrary to the hypothesis, the control and the impersonal orientation were not associated with a higher amount and severity of deviant behaviours. Rather, these orientations were only associated with more deviant behaviours for certain groups. Specifically, the control orientation was only associated with an increase in deviance for females, while increasing deviant behaviours were only associated with the impersonal orientation for males. The autonomous orientation was generally related to higher amounts and severity of deviance, specifically for those who identified as their gender as 'other'. As an overview, the two groups related to the most deviant behaviours were found to be the 'other' autonomously orientated group and the male impersonally orientated group (see Figures 5.1 and 5.2). However, it is important to note is that the 'other' gender grouping included an extremely small sample size of five participants in total, and therefore cannot be generalized to outside of this study.

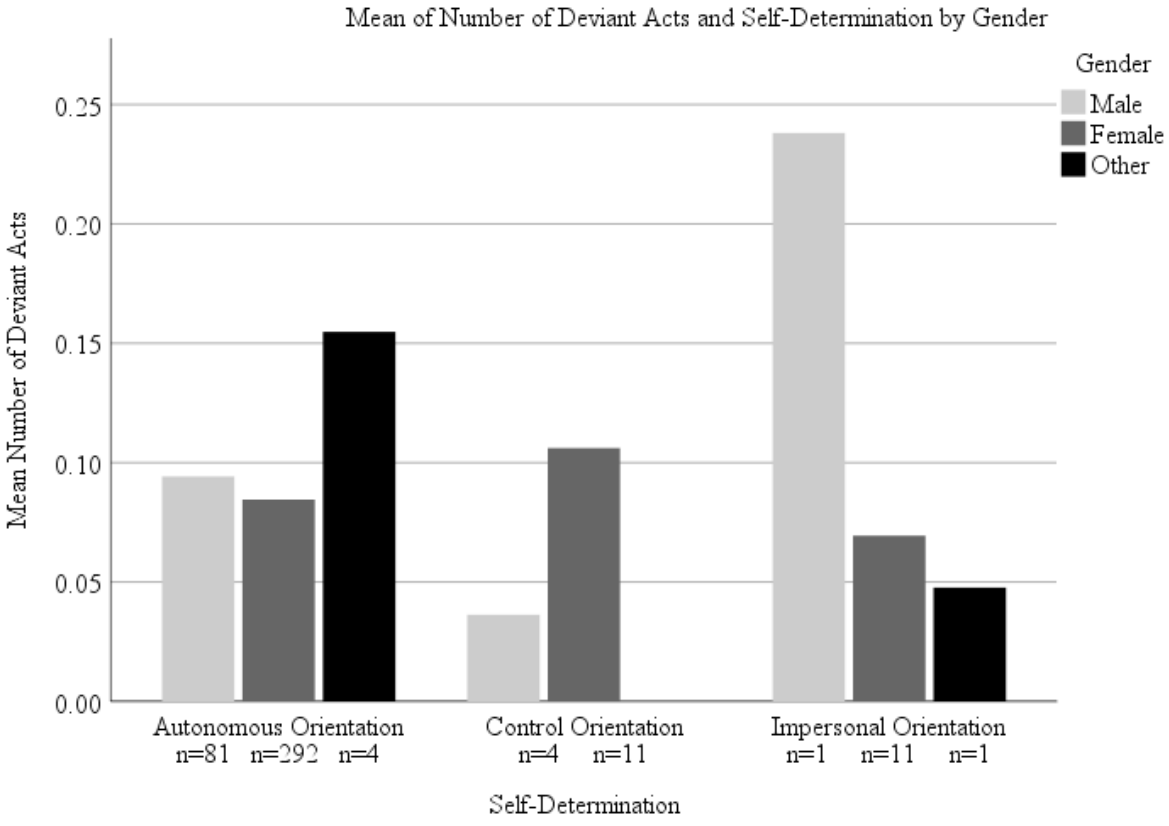

Figure 5.1. The mean number of deviant acts for each orientation, filtered by gender.

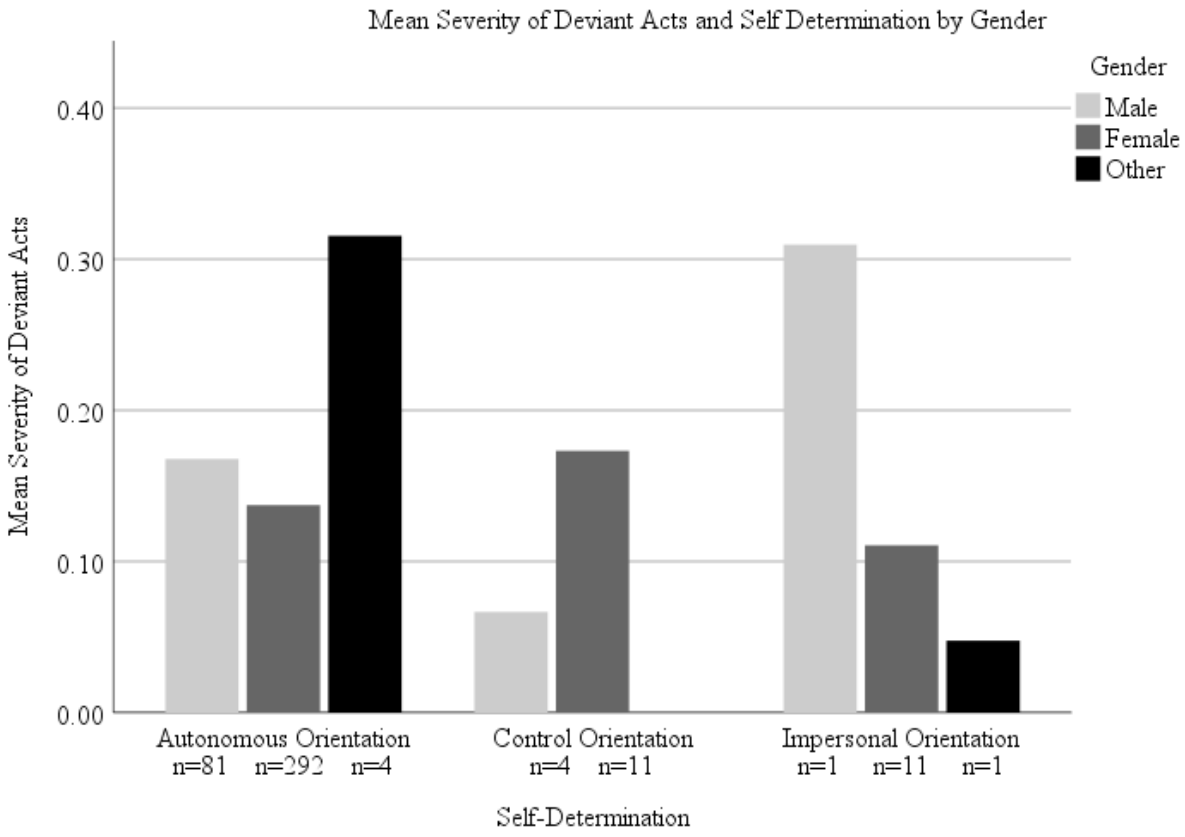

Figure 5.2. The mean severity of deviant acts for each orientation, filtered by gender.

The male impersonally orientated group was associated with the highest number of deviant behaviours, with the 'other' autonomously orientated group was associated with the second-highest number of deviant behaviours. However, the 'other' autonomously orientated group was associated with the highest severity of deviant behaviours, with the male impersonally orientated group following close behind. Another interesting item to note is that there was no data generated for the 'other' control orientated group. However, as mentioned above, the 'other' group only contained five individuals - four of which were categorized as autonomously motivated, leaving only one participant in the impersonally motivated category. The male gender sample was also quite small (N= 92) when compared to the female gender sample (N= 333). The sample sizes of these groupings may have an influence on the results found in this study.

These trends also show that this application of the Self-Determination Theory (SDT) does not follow what Deci and Ryan (2000) hypothesized. While supporting effects have been found in workplace and educational research, it may be that there are other, more heavily weighted variates that influence deviance, hence rendering the applicability of SDT to deviance limited

(Niemiec & Ryan, 2009; Manganelli, Thibault-Landry, Forest, & Carpentier, 2018). The majority of research regarding SDT has been limited to the educational or organization spheres, with little research examining the applicability of SDT outside of those areas. Finally, the absence of significant gender effects further supports the Chi-square test in that there are not significant differences in gender and motivational orientation.

When considering the relationship between self-determination, gender, and risk factors, there were no significant effects found for self-determination or gender. For the purpose of this study, risk factors were assessed using the Violence Risk Scale (VRS). The VRS is a measure of static and dynamic risk factors. In most applications, both types of risk factors would be scored, resulting in a total score. This study considered participant's total scores on the VRS as their amount of risk factors present. When examining the general trend, it is apparent that most of the categories are roughly equal in the amount of risk factors present (see Figure 5.3). Some risk factors were consistent between each self-determination orientation, such as being under 30 years old, justifying hurtful behaviour, and instability during childhood. Conversely, other risk factors such as having a pattern of violence, being convicted of an offence 2 or more times, and being convicted of a serious crime were only reported by individuals in the autonomous orientation. However, it is important to note that there were only a few individuals in the autonomous orientation who reported these risk factors, whereas the vast majority of the autonomous orientation individuals did not report having these risk factors present. In addition, there is no one orientation with significantly more risk factors than others. Although the 'other' impersonally orientated group has been reported to have more risk factors than the others, this group sample size is also extremely small (N=1) and therefore cannot be considered at a valid estimate of the population.

It was theorized by Deci and Ryan (1985) that those individuals who had or did not have specific life events (such as perceived loss of control or substantial emphasis on external rewards) would be more likely to be orientated in a certain way. The results from this study illustrate that an individual's orientation is not necessarily an indicator of the amount or type of risk factors a given individual has, or if they have or have not engaged in deviant behaviours. It could be that Deci and Ryan's (1985) factors of self-determination are distinctly different than the risk factors which have been studied here. In other words, the presence of more risk factors

(as described by the VRS) may not equal less self-determination, but rather, than there may be other concepts at play.

Research has also suggested that the risk factors that affect males and females can differ greatly on their level of importance (Belknap, & Holsinger, 2006; Thompson & Morris, 2013). There has been no published research on the influence of specific risk factors for those who self-identify as non-binary. Consequently, different weightings on specific risk factors for males and females may partly explain why deviance does not parallel the amount of risk factors present, as assumed earlier in this paper.

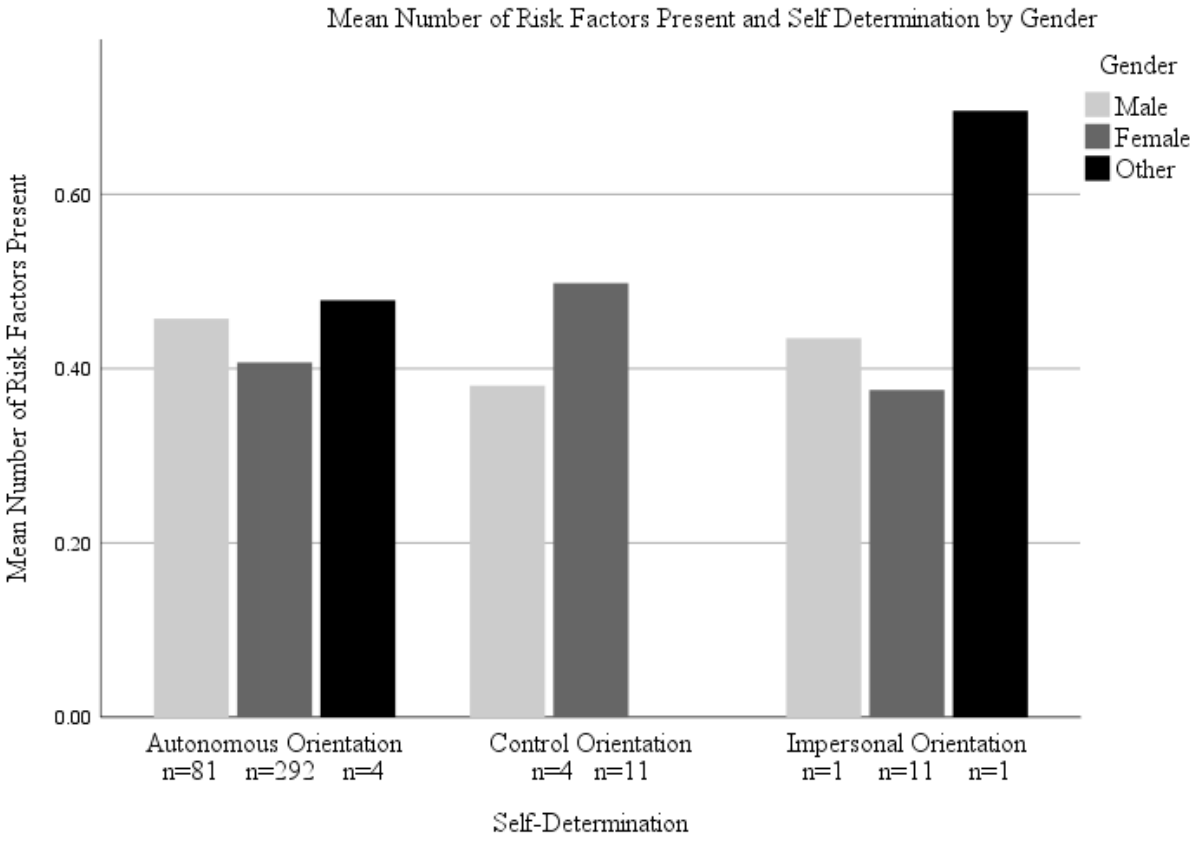

Figure 5.3. The mean number of risk factors for each orientation, filtered by gender.

Educational Implications

At the beginning of this study, it was theorized that the results may be able to provide more insight into why people engage in deviant behaviours. Although a significant effect was found for the relationship between self-determination, deviance and risk factors, self-determination was only shown to account for 1.6% of the variance in deviance and risk factors. While this relationship is indeed statistically significant, it offers little practical value. This

research may help illustrate the domains in which self-determination has significant effects, such as in work and educational settings as previously shown, and in which domains there may be other, more prominent factors involved, such as deviance (Baard et al., 2004; Deci et al., 1989; Deci & Ryan, 2008a; Lynch et al., 2005; Vansteenkiste et al., 2004). This is important in the educational realm in order to use research to guide the teaching of students, practitioners, and anyone else involved in the educational realm.

Research Implications

While the results found during this study did not yield any practical, useful interactions they could still help shape these domains by promoting future research. This particular study was intended to be exploratory in nature, with the hope that future studies would re-test and expand on the concepts discussed here (specifically self-determination and its' relationship to deviance). The findings of this study cautiously show that self-determination may not be associated with deviance in the ways that Deci and Ryan (2000) have previously specified. However, more research, especially with different populations (i.e. an offender population) is needed in this area to better define the relationship between self-determination, deviance, and risk factors.

Counselling Implications

As well as providing additional insight into deviant behaviours for educational or research purposes, it was also theorized that the results of this study could be used to enhance risk assessments and counselling tools. While these results show that there may be more prominent factors to address regarding deviance than self-determination, self-determination has been shown to have a meaningful place within the counselling domain. Deci and Ryan (2008c) illustrated how utilizing self-determination in counselling can help clients to autonomously explore and create change. Deci and Ryan (2008c) discuss the practice of using self-determination to support motivational interviewing techniques, as well as ensuring the client's three basic psychological needs are met. Finally, Deci and Ryan (2008c) show that integrating self-determination into the counselling process enhances the likelihood that treatment goals will be met and maintained.

Limitations

As mentioned previously, one limitation of this study is that the sample population included unequal sample sizes, with there being a substantially greater number of female participants (N=333) and autonomously orientated individuals (N= 377). Another limitation is

that the sample population was exclusively made up of University of Saskatchewan students, rather than the general public or an offender population. In addition, participants were recruited using convenience sampling rather than random sampling. Consequently, the results of this study are not generalizable to populations outside of this participant group. Convenience sampling was used to recruit participants through the University of Saskatchewan's SONA and PAWS systems. Even though the participants self-referred, not all students at the University of Saskatchewan had an equal likelihood of participating in the study. In other words, this study is biased towards students who self-referred and who had access to the study.

A final limitation of this study is that some of the measures used were altered to fit the sample population better, and therefore may not have retained their original measures of validity and reliability. Specifically, the VRS and the DAS were adapted for use in this study. The DAS was modified by changing or adding items. As well, the items on the DAS were given weightings which were based on the penalties laid out within the Canadian justice system, but that have not been validity tested for the DAS. The VRS was also modified to better suit the needs of this study. In addition, the VRS is a measure that is typically completed by trained professionals to assess violent offenders, but it was applied to a generally non-violent population in a self-report fashion.

Suggestions for Future Research

Recommendations for future research include repeating this study with a general or offender population and utilizing random sampling in order to ensure generalizability. As well, future research should examine what (if any) are the mediating factors in the relationship between self-determination and deviance. This study found significant but impractical effects, so it could be that there is another major factor involved in this interaction. Gender effects for those who self-identified as non-binary were included in this study, however, the sample size was extremely small (n=5). It would be beneficial for more studies, especially those dealing with SDT or deviance to delve more deeply into gender differences, including non-binary gender(s). Finally, there is more research needed into SDT, and its' roles in areas outside of education, work, and personal attributes. Specific to this study, more research is needed in areas such as deviance and risk factors in order to substantiate the effects of SDT in each of those spheres.

Conclusion

This research was completed as an exploratory study intended to examine the relationship exclusively between self-determination and gender, as well as the interactions between self-determination, gender, deviance, and risk factors. It is believed that this research is one of the first studies to bring together Self-Determination Theory, deviance, and risk factors. Self-Determination Theory (Deci & Ryan, 1985; 2000; 2008; 2008b) consists of three distinct types of self-determination orientations, or motivation types. The autonomous orientation is held by those who are primarily intrinsically motivated, while the controlled orientation predominantly consists of individuals who are extrinsically motivated. Finally, the impersonal orientation is made up of individuals who are largely amotivated – meaning they are neither motivated by intrinsic or extrinsic rewards or factors. Self-determination was further explored in terms of the three basic psychological needs of competency, autonomy, and relatedness, perceived locus of control, salient rewards, and self-esteem. This section ended with a look at the outcomes related to autonomous motivation, such as elevated levels of psychological well-being, better learning outcomes, and more job satisfaction.

This study continued on to explain deviance through the risk-need-responsivity (RNR) model of offender rehabilitation and the good lives model (GML) of offender rehabilitation. The RNR model states that there are three essential factors that need to be addressed in order to successfully encourage an individual to not engage in deviance (Andrews et al., 1990). These include matching treatment to each offender's risk level, addressing the individual's criminogenic needs, and responding in a way that utilizes interventions which take into account the offender's learning styles and abilities.

On the contrary, the GLM parallels Deci and Ryan's (2000) theory of basic psychological needs. Ward and Stewart (2003) postulate that the offender's innate psychological needs, such as those for relationships, competence, and autonomy, as well as managing the offender's level of risk, should be the focus of treatment. The GLM focuses on helping the offender obtain and maintain primary goods in a prosocial way, which are defined as things and experiences that meet the basic psychological needs of relatedness, competency, and autonomy (Whitehead et al., 2007). This, in turn, is hypothesized to lead to a reduction in crime.

Two research questions were created to be analyzed in this study: 1) Is there a significant relationship between each of the types of self-determination (autonomous, controlled, and

impersonal) and gender?, 2) How do the types of self-determination orientations (autonomous, controlled, and impersonal) and gender interact with the number and severity of deviant acts an individual engages in, and the amount of risk factors present for each individual.

Participants for this study were recruited using convenience sampling from the University of Saskatchewan's PAWS and SONA networks. 432 participants who indicated that they were 18 years of age or older were included in this study. The sample population was found to have a mean age range of 18-24 years, and was primarily composed of females (N=333). Each participant was asked to complete the General Causality Orientation Scale (GCOS), which was used to determine their dominant self-determination type, the Delinquent Activities Scale (DAS), which measured the amount and severity of deviant behaviours participants have engaged in the last 12 months, and the Violence Risk Scale (VRS), which measured the number of risk factors present for each participant.

A Chi-square Test of Independence and a MANOVA were employed to analyze the results for the first and second question, respectfully. The Chi-square test did not find a significant relationship between self-determination and gender, meaning that gender (male, female, other) was not found to be significantly related to a specific type of self-determination (autonomous, controlled, or impersonal). When analyzing the second question, a MANOVA did find a significant interaction effect between self-determination, deviance, and risk factors, with self-determination accounting for 1.6% of the variance in the amount and severity of deviant acts, and the number of risk factors present. Specifically, between-subject tests showed that there was a significant relationship between self-determination and the number of deviant acts. However, further univariate ANOVAs indicated non-significant self-determination effects on each of the dependent variables. The effect of finding a significant MANOVA result but non-significant ANOVA results is due to the MANOVA incorporating the correlation between the dependant variables in the result, whereas univariate ANOVAs do not. This means that the MANOVA, rather than the univariate ANOVAs, has more power to determine group differences (Field, 2013). Gender was not found to have a significant interaction regarding deviance or risk factors.

Although a significant interaction effect was found, when each variable was examined further independently, no other significant results were found. Although the distinct relationships between self-determination, gender, deviance, and risk factors were shown to be non-significant,

some interesting patterns in the data were observed and discussed. Specifically, the control and the impersonal orientations were not associated with an overall increase in the amount or severity of deviant behaviours, or the number of risk factors present as hypothesized at the beginning of this study.

Lastly, implications, limitations, and suggestions for future research were explored. Implications such as guiding teaching, promoting future research, and providing further insight into self-determination and deviance were discussed. Limitations of this study consisted of unequal sample sizes, a biased sample due to convenience sample and significantly more female participants, and altering the DAS and the VRS measures. Finally, suggestions for future research included repeating this study using random sampling and a general or offender population, exploring other possible factors in the relationship between self-determination, gender, and deviance, and to further explore self-determination in respect to gender differences and the role of self-determination in areas that have not yet been studied.

Ultimately, further expanding the field of research on deviant behaviours will allow for more informed work with offenders, which, in turn, will reduce the financial and emotional effects of antisocial actions on individuals and society. The results of this study indicate that there is more to learn about the relationship between Self-Determination Theory, deviance, and the influence of gender, as this relationship may not mirror the effects that have been shown between self-determination and other concepts.

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Appendixes

Appendix A

General Causality Orientation Scale (GCOS)

Note: The new items that appear in the 17 item version and that do not appear in the 12 item version have been identified with an Asterix (*).

On the following pages you will find a series of vignettes. Each one describes an incident and lists three ways of responding to it. Please read each vignette and then consider the responses in turn. Think of each numbered response option in terms of how likely it is you would respond in that way. We all respond in a variety of ways to situations, and probably each response is at least slightly likely for you. If it is very *unlikely* that you would respond in the way described in a given response, you would circle numbers 1 or 2. If it is *moderately* likely, you would circle a number in the midrange. If it is very *likely* that you would respond as described, you would circle the 6 or 7. Please circle one number on the scale for each item.

You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

1. What if I can't live up to the new responsibility?

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

2. Will I make more money at this position?

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

3. I wonder if the new work will be interesting?

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It's likely that you might think:

4. It's not what you know, but who you know.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

5. I’m probably not good enough for the job.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

6. Somehow they didn’t see my qualifications fitting their needs.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

7. Telling the three workers the situation and having them work with you on the schedule.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

8. Simply assign the times that each can break to avoid any problems.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

9. Find out from someone in authority what to do or what has been done in the past.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You have just received the results of a test you took and discovered that you did very poorly. Your initial reaction is likely to be:

10. “I can't do anything right,” and feel sad.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

11. “I wonder how it is I did so poorly,” and feel disappointed.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

12. “That stupid test doesn’t show anything,” and feel angry.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

***When you and your friend are making plans for Saturday evening, it is likely that you would:**

13. Leave it up to your friend; s/he probably wouldn't want to do what you'd suggest.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

14. Each make suggestions and then decide together on something that you both feel like doing.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

15. Talk your friend into doing what you want to do.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You have been invited to a large party where you know very few people. As you look forward to the evening you would likely expect that:

16. You'll try to fit in with whatever is happening in order to have a good time and not look bad.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

17. You'll find some people with whom you can relate.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

18. You'll probably feel somewhat isolated and unnoticed.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:

19. Take charge: that is, you would make most of the major decisions yourself.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

20. Follow precedent: you're not really up to the task so you'd do it the way it's been done before.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

21. Seek participation: get inputs from others who want to make them before you make your final plans.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

Recently a position has opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you are likely to think:

22. You didn't really expect the job; you frequently get passed over.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

23. The other person probably "did the right things" politically to get the job.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

24. You would probably take a look at factors in your own performance that lead you to be passed over.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You are embarking on a new career. The most important consideration is likely to be:

25. Whether you can do the work without getting in over your head.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

26. How interested you are in that kind of work.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

27. Whether there are good possibilities for advancement.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

A woman who works for you has generally done an adequate job. However for the past two weeks her work has not been up to par and she appears to be less interested in her work. Your reaction is likely to be:

28. Tell her that her work is below what is expected and that she should start working harder.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

29. Ask her about the problem and let her know that you are available to help her work it out.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

30. It is hard to know what to do to straighten her out.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

Your company has promoted you to a position in a city far away from your present location. As you think about the move you would probably:

31. Feel interested in the challenge and a little nervous at the same time.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

32. Feel excited about the higher status and salary that is involved.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

33. Feel stressed and anxious about the upcoming change.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

***Within your circle of friends, the one with whom you choose to spend the most time is:**

34. The one with whom you spend the most time exchanging ideas and feelings.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

35. The one who is the most popular of them.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

36. The one who needs you most as a friend.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

You have a school age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

37. Talk it over with your daughter to understand further what the problem is.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

38. Scold her and hope she does better.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

39. Make sure she does the assignments, because she should be working harder.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

***Your friend has a habit that annoys you to the point of making you angry. It is likely that you would:**

40. Point it out each time you notice it, that way maybe s/he will stop doing it.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

41. Try to ignore the habit because talking about it won't do it any good anyway.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

42. Try to understand why your friend does it and why it is so upsetting for you.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

A close friend of yours has been acting moody lately, and a couple of times has been very angry with you over "nothing." You might:

43. Share your observations with him/her and try to find out what is going on for him/her.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

44. Ignore it because there's not much you can do about it anyway.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

45. Tell him/her that you're willing to spend time together if and only if s/he makes more effort to control him/herself.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

***Your friend's younger sister is a freshman in college. Your friend tells you that she has been doing badly and asks you what s/he should do about it. You advise him/her to:**

46. Talk it over with her and try to see what is going on for her.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

47. Not mention it; there's nothing s/he could do about it anyway.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

48. Tell her it's important for her to do well, so she should be working harder.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

***You feel that your friend is being inconsiderate. You would probably:**

49. Find an opportunity to explain why it bothers you; s/he may not even realize how much it is bothering you.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

50. Say nothing; if your friend really cares about you s/he would understand how you feel.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

51. Demand that your friend start being more considerate; otherwise you'll respond in kind.

1----------2----------3----------4----------5----------6----------7

very unlikely moderately likely very likely

Appendix B

B.1 Delinquent Activities Scale (DAS)

Note: Items that have been modified are indicated by an Asterix (*) and include a description of how they have been modified.

Please select if you have engaged in any of the following activities within the last 12 months:

1. Stolen (or tried to steal) a motor vehicle, such as a car or motorcycle.
2. Stolen (or tried to steal) something worth more than $50.
3. Knowingly bought, stole, or held stolen goods (or tried to do any of these things).
4. Carried a hidden weapon other than a plain pocketknife.
5. Stolen (or tried to steal) something worth $5 or less.
6. *Attacked someone with the idea of seriously hurting or killing him/her.

    Changed to: Attacked someone with the idea of hurting them.

7. *Been paid for having sexual relations with someone.

    Removed this item to prevent bias as this is legal in Canada.

8. *Been involved in gang fights.

    Changed to: Been involved in multiple fights.

9. Added: *If you are a female, have you drank more than 10 drinks per week on consistent basis (i.e. at least 2 weeks every month)? If you are a male, have you drank more than 15 drinks per week on a consistent basis (i.e. at least 2 weeks every month?)

    This was added based on Canada's low risk drinking guidelines for males and females (Canadian Centre on Substance Use and Addiction, 2018).

10. Sold marijuana or hashish (pot, grass, hash).
11. * Added: Used marijuana (pot, grass, hash) 3+ times a week.

    This was added based on insurance smoking guidelines (Abrams Insurance Solutions, 2019).

12. *Hit (or threatened to hit) a teacher or other adult at school.

    Consolidated item with #14: hit (or threatened to hit) others.

13. *Hit (or threatened to hit) your parents.

    Consolidated item with #14: hit (or threatened to hit) others.

14. *Hit (or threatened to hit) other students

Changed to: Hit (or threatened to hit) others

15. Been loud, rowdy or unruly in a public place (disorderly conduct).

16. Sold cocaine or crack.

17. *Added: Used cocaine or crack.

18. Sold hard drugs such as heroin or LSD.

19. *Added: Used hard drugs such as heroin or LSD.

20. Taken a vehicle for a ride (drive) without the owner's permission.

21. Had (or tried to have) sexual relations with someone against their will.

22. *Used force (strong-arm methods) to get money or things from other students.

Changed to: Used force (strong-arm methods) to get money or things from others.

23. *Used force (strong-arm methods) to get money or things from a teacher or other adult at school.

Consolidated item with #22: used force (strong-arm methods) to get money or things from others.

24. Used force (strong-arm methods) to get money or things from other people (not students/teachers).

Consolidated item with #22: used force (strong-arm methods) to get money or things from others.

25. Stolen (or tried to steal) things worth between $5 and $50.

26. Broke into a building or vehicle (or tried to break in) to steal something or just look around.

27. Begged for money or things from strangers.

28. *Was arrested.

Changed to: 28. Have you been arrested for a summary offence?

29. Have you ever been arrested of an indictable offence?

29. Bullied, threatened or intimidated others.

30. *Initiated physical fights.

Changed to: initiated (at least one) physical fights.

31. *Used a weapon (bat, brick, broken bottle, knife, gun).

Changed to: Used a weapon (bat, brick, broken bottle, knife, gun) in a fight.

32. Been physically cruel to animals.

33. Been physically cruel to people.

34. *Added: Been emotionally cruel to people.

35. Set fires with the intention of causing serious damage.

36. Destroyed others' property on purpose (not by fire setting).

37. Lied to obtain goods or favors or to avoid obligations (cons others, *added: faking sick, etc).

38. Stayed out at night despite house rules not to.

39. Ran away from home overnight.

40. Skipped school.

41. Could not pay bills (loans, child support, etc.).

42. Done something (left school, a job, etc.) before thinking of what might happen if you did it (had no other plans).

43. * Got in trouble at work, was late for work, or missed work.

Changed: Got in trouble at work or school, was late for work or school, missed work or school.

44. Engaging in activities that could be dangerous to yourself or others (speeding, *added: distracted driving, reckless behaviour).

45. *Of the things we just discussed (theft, damaging others' property, fighting, etc.), do you feel that you did the right thing and would do the same thing again if you were in the same situations (check one)?

___Not appropriate (rare to check this one!) ___Probably do the same (probable lack of remorse)

___No, definitely not (definite remorse) ___Definitely the same (definite lack of remorse)

___No, probably not (probable remorse)

Item removed due to remorse not being an area of interest for this study.

46. *Added: Engaged in any other potentially minor illegal or deviant activities that have not been discussed above (i.e. drinking in public, not following posted rules, parking in no parking areas, etc).

47. *Added: Engaged in any other potentially major illegal or deviant activities that have not been discussed above (i.e. gang activities, assaults, murder)

B.2: Ranking of severity of the DAS items

1 – Legal but against societal norms

Done something (left school, a job, etc.) before thinking of what might happen if you did it (had no other plans).

If you are a female, have you drank more than 10 drinks per week on consistent basis (i.e. at least 2 weeks every month)? If you are a male, have you drank more than 15 drinks per week on a consistent basis (i.e. at least 2 weeks every month?)

Used marijuana (pot, grass, hash) 3+ times a week.

Begged for money or things from strangers.

Been emotionally cruel to people.

Lied to obtain goods or favors or to avoid obligations (cons others, *added: faking sick, etc).

Stayed out at night despite house rules not to.

Ran away from home overnight.

Skipped school.

Could not pay bills (loans, child support, etc.).

Got in trouble at work or school, was late for work or school, missed work or school.

2- Summary offences or tickets

Sold marijuana or hashish (pot, grass, hash).

Been loud, rowdy or unruly in a public place (disorderly conduct).

Have you been arrested for a summary offence?

Engaged in any other potentially minor illegal or deviant activities that have not been discussed above (i.e. drinking in public, not following posted rules, parking in no parking areas, etc).

Engaging in activities that could be dangerous to yourself or others (speeding, *added: distracted driving, reckless behaviour).

3 – Hybrid offences (up to 5 years imprisonment)

Stolen (or tried to steal) something worth $5 or less.

Stolen (or tried to steal) things worth between $5 and $50.

Used cocaine or crack.

Used hard drugs such as heroin or LSD.

Been physically cruel to animals.

Carried a hidden weapon other than a plain pocketknife

4 – Hybrid offences (over 5 years imprisonment, consequences can vary depending on the severity of the offence)

Hit (or threatened to hit) others.

Used force (strong-arm methods) to get money or things from others.

Bullied, threatened or intimidated others.

Broke into a building or vehicle (or tried to break in) to steal something or just look around.

Had (or tried to have) sexual relations with someone against their will.

Knowingly bought, stole, or held stolen goods (or tried to do any of these things).

Stolen (or tried to steal) something worth more than $50.

Destroyed others' property on purpose (not by fire setting).

Sold cocaine or crack.

Sold hard drugs such as heroin or LSD.

5 – Indictable offences

Attacked someone with the idea of hurting them.

Been involved in multiple fights.

Been physically cruel to people

Used a weapon (bat, brick, broken bottle, knife, gun) in a fight.

Initiated (at least one) physical fights.

Set fires with the intention of causing serious damage.

Stolen (or tried to steal) a motor vehicle, such as a car or motorcycle.

Taken a vehicle for a ride (drive) without the owner's permission.

Have you ever been arrested of an indictable offence?

Engaged in any other potentially major illegal or deviant activities that have not been discussed above (i.e. gang activities, assaults, murder)

Appendix C

C.1: Violence Risk Factors

Note: Items that have been modified are indicated by an Asterix (*) and include a description of how they have been modified.

Please answer the following questions as accurately as possibly for yourself currently. Please choose one answer for each question.

1. Current age (under 30; 30-39; 40-44; over 45)
2. *Age at first conviction (under 15, 15-19, 20-29, over 30).

   Changed to: Have you ever been convicted of a serious crime? (i.e. assault, theft over $5000, drug trafficking, manslaughter, etc) (yes, at under 15 years old; yes, between 15 - 19 years old; yes, between 20 - 29 years old; yes, at over 30 years old; no, never)

3. *Number of young offender convictions (over 2, 2, 1, 0)

   Changed to: Number of times you've been convicted of an offence? (0;1; 2;>2)

4. Have you had a pattern of violence throughout your life? (Yes, beginning in childhood; Only a few incidents; Only one or two incidents; No)
5. *Removed: Prior release failures (One or more escapes, breached twice, breached once, no failures).
6. Did you have stability in family upbringing during your childhood? (i.e. consistent parental figures, consistent rules/discipline/expectations, consistent access to food, clothing, etc, consistent living situation i.e did not move a lot) (Yes; For the most part; Somewhat unstable/inconsistent; Very little stability)
7. Would you say your overall lifestyle is characterized by violence? (Not at all; I occasionally become violent or fight; I often become violent or fight; I am almost always violent)
8. Would you say you care for others? (Yes, I am compassionate for everyone; I care about others sometimes; I only care about those who are close to me; No, I only look out for myself)

9. Do you believe in the importance of rules? (Do you find that you follow the rules?) (Yes, all of the time; Most of the time, depending on the rules; Not usually; Rarely, I do whatever I want)
10. How do you support yourself financially? (Part time or full time work, loans or grants, financial assistance from family, savings; Trading/selling personal services (escort, sex worker, etc) for money or items; Selling drugs; Stealing, conning, selling stolen items, etc.)
11. How would you best describe your close friends? (choose one) (Pro social, engages in pro social or community activities such as volunteering or clubs; Engages in some anti-social activities such as recreational (illegal) drug use; Engages in some minor criminal activities such as shoplifting; Engages in more serious criminal activities such as vehicle theft or gang activities)
12. How would you describe your level of aggression towards others? (physically or emotionally) (I am not aggressive towards others; I have been aggressive towards others a few times in the past, but nothing severe; I have been aggressive towards others several times in the past; I am often or always severely aggressive towards others)
13. Do you tend to under control or over control your emotions? (Cannot control your emotions - i.e. uncontrollable crying or anger or hold everything in?) (Yes, all the time; Usually; Not usually - I can typically express my emotions in a healthy way; No, I am almost always able to express my emotions in a healthy, balanced way)
14. *Removed: Violence during institutionalization (prove to violent behaviours during institutionalization).
15. Do you use weapons in a violent way towards others? (with intention to cause harm) (No, I have never used a weapon with the intention to hurt someone; I have used a weapon with the intention to hurt someone once; I have used a weapon with the intention to hurt someone a few times; I use weapons with the intention to hurt someone often)
16. If (and/or when) you engage in violent or aggressive behaviours (physical or mental), do you have insight into these behaviours? (i.e. are you able to figure out why you acted the way that you did?) (Not applicable - I never have violent or aggressive behaviours; Yes - I am usually able to understand why I acted the way I did; Most of the time; Occasionally; No - I never or almost never know why I acted the way I did)

17. Do you have a mental disorder that makes it difficult for you to control violent or deviant/criminal behaviours? (i.e. Oppositional Deviant Disorder, ADHD, etc) *Please note - individuals with mental illnesses are not inherently known to be more violent or criminal than individuals without. This question is not intended to be discriminatory or offensive, but is only intended to gather information* (No; Yes - it occasionally influences me to engage in more violent/deviant behaviour; Yes - it sometimes influences me to engage in more violent/deviant behaviour; Yes - it often influences me to engage in more violent/deviant behaviour)
18. Do you have any substance use problems to the point where it creates issues, causes violence, or prevents you from fulfilling your responsibilities? (i.e. substance dependence, substance abuse) (No; I occasionally use substances to the point where it creates problems or prevents me from fulfilling all of my responsibilities; I sometimes use substances to the point where it creates problems or prevents me from fulfilling all of my responsibilities.; Yes - I often or always use substances to the point where it creates chronic problems and prevents me from fulfilling my responsibilities)
19. Are you able to maintain stable relationships (friendships, romantic relationships, family) (Yes - my relationships with my friends, family, partner, etc are all stable and we rarely argue or fight; Usually - once in a while my friends, family, partner, etc and I will get into arguments; Not usually - I get into lots of fights with my friends, partner, family, etc and tend to get new friends or partners after a while; No - my relationships with my friends, partner, family, etc are filled with fights. I also often get new friends and partners quickly)
20. Do you feel you are adequately positively supported? (through people close to you, services, or your community?) (Yes - I have a large positive support network; There are a few people, services, etc that I am receiving positive support from, but I would like to receive more; No - I feel there are some supports or people I could ask for support, but I am not close to them or currently receiving support from them; No - I do not feel that I have anyone supporting me (or I feel there is no one supporting me in a positive way))
21. *Release to community (offender is planning or likely to be released to situations linked to violence).

Changed to: Are you currently or have you been around a lot of violent situations? (No; Occasionally; Often; Almost always)

22. * Removed: Violence cycle (Pattern of interpersonal, situational, and personal factors linked to violence).
23. Do you typically try to consider all relevant information before you act or react? (Yes - I always or almost always consider all relevant information; Often - I try to consider all relevant information before I react; Occasionally - I often react before considering all relevant information; No - I almost always react before considering all relevant information)
24. Do you try to justify or rationalize potentially hurtful or negative behaviour? (i.e. they deserved that, I did her a favour calling her dress ugly, what I did wasn't that bad, etc.). (Yes - I almost always justify my potentially hurtful or negative behaviours; Often - I often find myself justifying my potentially hurtful or negative behaviours; Occasionally - I find myself justifying my potentially hurtful or negative behaviours every once in a while; No - I rarely or never try to justify my potentially hurtful or negative behaviours)
25. *Added: Do you feel that education is important? (Yes; You can do fine with or without it; Some education is important, but you don't need everything they teach you (i.e. you only need to know what is interesting to you); No, not at all)
26. *Removed: Compliance with community supervision (Poor cooperation with community supervision)
27. *Removed: Security level at release (Release from higher security institutions is linked to violence)
28. *Added: Do you feel that your family as a whole is under a lot of stress? (i.e. financial stress, divorce, illness) (Yes - My family unit is under a lot of stress; Somewhat - My family unit is under a moderate amount of stress; Occasionally - my family unit is under the occasional or a small amount of stress; No - my family unit is not under stress)

Appendix D

Descriptive Statistics by Gender

Total		92	333	5
Age Range	18-24	75	293	4
	25-34	15	27	1
	35-44	1	10	0
	45-54	1	3	0
	55 and over	0	0	0
Ethnicity	White or Caucasian	52	220	3
	First Nations, Inuit, or Metis	4	27	0
	Hispanic or Latino	0	4	0
	Black or African American	6	14	0
	Asian, Asian American, or Pacific Islander	16	4	2
	West Central Asian or Middle Eastern Origin	10	14	0
	Other	3	7	0
Year of Study	First	21	89	1
	Second	27	91	1
	Third	21	73	1
	Fourth	13	48	1
	Fifth	6	21	1
	Sixth or more	2	9	1
Program	Arts	22	118	2
	Science	40	117	0
	Education	1	10	0
	Business	17	30	2
	Fine Arts	0	1	0
	Aboriginal Studies	0	1	0
	Medicine	1	5	0
	Other	10	50	1