Utility of the SPROF-YV in Risk Assessments of Young Offenders

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Dedication
This thesis is dedicated to my grandmother, Jo-Ann Norma Jean Dalton, who has been by my side for every step of my life and always believed I could do more than I thought. She always believed I would be the one to make something of myself.
Abstract

Sixteen percent of all young offenders, classified as chronic offenders, are responsible for half of court related activity including hearings, bail and paperwork (Statistics Canada, 2005). Changing the trajectory of these chronic offenders would be beneficial to society and the process starts with a thorough risk/need assessment (Hannah-Moffat et al., 2003). A new protective factor measure, the Structured Assessment of Protective Factors for Violent Risk- Youth Version (SAPROF-YV), was assessed for construct validity and predictive ability for variations in a measure of antisocial features. The SAPROF-YV was correlated with four other risk and protective factor measures and a two-stage hierarchical regression analysis was completed. While the SAPROF-YV showed highly significant convergent and discriminant validity, it only uniquely predicted 0.7% of the variance in a measure of antisocial features. While the rest of the model was significant, the SAPROF-YV contribution was not. This difference in results may reflect the static nature of the dependent variable versus the dynamic considerations of the SAPROF-YV. Further research regarding the predictive ability of the SAPROF-YV using outcome data of both static and dynamic nature may uniquely contribute to the administration of risk/need assessments for young offenders.
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Chapter One: Introduction

Since the introduction of the Youth Criminal Justice Act (YCJA, 2003), youth crime rates have continued to drop, from 6,914 per 100,000 to 6,147 per 100,000 (Statistics Canada, 2005). Due to interventions such as extrajudicial measures, fewer youth are being brought into the justice stream as first time offenders (Dauvergne, 2013). Sixty percent of court referrals are now for youth classified as chronic offenders, meaning that they have been charged with five or more separate incidences (Statistics Canada, 2005). While these offenders only account for 16% of all young offenders, they are responsible for more than half of court-related activity (Statistics Canada, 2005). Repeat offenders, charged with two to four separate incidences, account for 28% of all young offenders, chronic offenders represent another portion of court referrals (Statistics Canada, 2005).

Changing the trajectory of these repeat and chronic offenders would be beneficial in many ways. Identifying and responding to the rehabilitative needs of the young person is one of the goals of the YJCA (Dauvergne, 2013). Risk/need assessments facilitate the identification of which youth are likely to become repeat or chronic offenders and the criminogenic needs present in these youth (Hannah-Moffat et al., 2003). This allows the youth justice system to match interventions to an individual’s level of risk and specific criminogenic needs (Ridgeway et al., 2014). To complete these assessments, a youth’s risk, need, and protective factors are considered and compiled to arrive at a cumulative risk level (Ridgeway et al., 2014). A criminogenic risk factor is a characteristic of the individual that increases the likelihood of reoffending. Risk factors can be both static, meaning that a factor is an unchanging characteristic, or dynamic, meaning that a factor is changeable. Need factors is another term for dynamic risk factors. These factors are characteristics that can change and increase or decrease the individual’s risk of recidivism. Protective factors, while still disputed, are characteristics that can diminish that person’s chance of reengaging in crime. While many assessments identify risks and needs that predict the likelihood of future criminal offending (Hannah-Moffat et al., 2003), the potential value of protective factors has been relatively overlooked (de Ruiter et al., 2011).

To address this oversight, some assessment measures now consider protective factors. The Structured Assessment of Violent Risk in Youth (SAVRY; Borum et al., 2006) considers six protective factors on a nominal, yes or no, scale in addition to 24 risk and need factors. The Short Term Assessment of Risk and Treatability (START; Webster et al., 2004) considers 20 items and allows for a factor to be identified as a risk, need, or a protective one. While these scales show good predictive validity for violent behaviour, there has been little research on the dynamics of protective factors (De Vries Robbé et al., 2015). This has led to the creation of two assessment measures consisting of only protective factors: the Structured Assessment of Protective Factors for Violence Risk (SAPROF; De Vries Robbé, 2011), and the Structured Assessment of Protective Factors for Violence Risk- Youth Version (SAPROF-YV; de Vries Robbé, 2015).

As the SAPROF still does not have a solid psychometric base, the present study will investigate two main questions about the SAPROF:

1) Does the SAPROF show concurrent validity with other risk assessment tools, as evidenced by an inverse correlation with them?

2) Does the SAPROF increase the predictive validity of a risk/need assessment, as evidenced by a significant correlation between a measure of antisocial behaviour and protective factors after risk assessment totals are considered?

Toward this end, the following chapter will review the research on the Risk-Need-Responsivity (RNR) model, protective factors and the SAPROF. In addition, the SAPROF scales
and items will be explored in depth. The method will be described, the statistical analyses. The results of these analyses will follow. Finally, a discussion will present conclusions, strengths and limitations, application and contribution to the behavioural psychology field, and implications for further research.
Chapter Two: Literature Review

The Risk-Need-Responsivity (RNR) framework first emerged in the 1990s from the research of Andrews and Bonta, though it was not published in its full form until 1994 (Polaschek, 2012). The purpose of this framework was to help the offender leave the system for the benefit of both the offender and the community (Andrews & Bonta, 2010). To arrive at what interventions would work, Andrews and Bonta (2010) examined the available literature on offender rehabilitation and converted all results into effect sizes. By doing so, Andrews and Bonta (2010) arrived at conclusions of what works to reduce recidivism. This research was distilled into a model covering that offered three points of consideration in assessments: risk levels, dynamic need factors, and responsivity (Andrews & Bonta, 2010).

The first consideration in the model is the offender’s risk level. Determining an offender’s level of risk to reoffend is an integral step in the process as people differ in their likelihood to reoffend (Andrews & Bonta, 2010). Level of risk must be determined from factors shown to be related to recidivism (Andrews & Bonta, 2010). The greater the number of factors an offender possesses, the higher the level of risk as each factor is considered equally severe (Andrews & Bonta, 2010). Assessment using actuarial or structured professional judgement tools is crucial (Andrews & Bonta, 2010). After the offender’s level of risk is determined, it is important to match the level of intervention to the level of risk (Andrews & Bonta, 2010). A low-risk offender does not require intervention (Andrews & Bonta, 2010). A study by Singh, Desmarais, Sellers, Hylton, Tirotti, and Van Dorn (2014) demonstrated that over-intervening actually increases risk while also reducing protective factors. Providing intensive services to low risk offenders can actually increase their risk to reoffend (Andrews & Bonta, 2010). Moderate risk offenders do require services such as accommodation support and weekly counseling, but high risk to very high risk offenders require intensive services (Andrews & Bonta, 2010). The need principle guides target for interventions.

The second consideration in the model is the need factors that can be targeted for change. Andrews and Bonta (2010) identified the ‘Central Eight’ through their research. The Central Eight are further broken down into the ‘Big Four’ and the ‘Moderate Four’ (Andrews et al., 2011). The Big Four include a history of antisocial acts, antisocial peers, antisocial cognitions and attitudes, and antisocial personality (Andrews & Bonta, 2010). These four areas are highly related to the risk of recidivism. While an antisocial history is a static factor, and therefore unable to be changed, the other three factors are key targets for correctional intervention (Andrews & Bonta, 2010). Other target areas include the Moderate Four of substance abuse, family circumstances, leisure and recreation, and school and work (Andrews & Bonta, 2010). All eight areas, known as criminogenic need areas, must be targeted in interventions to reduce the risk of recidivism (Andrews & Bonta, 2010). While other need areas may increase an offender’s quality of life, only these areas will reduce the risk of recidivism (Andrews & Bonta, 2010). Minor risk factors, such as mental illness and self-esteem, while often discussed in the literature, do not reduce the risk of recidivism when targeted (Andrews et al., 2006). It may be that these factors only have an influence through the modification of the Central Eight risk factors (Andrews et al., 2006). Targeting the right areas is a key step in the intervention process, as is targeting them in a way that will produce change.

The third consideration in the model is responsivity. The responsivity principle encompasses how to target an individual’s criminogenic need areas (Andrews & Bonta, 2010). The responsivity principle can be further broken down into general responsivity and specific
responsivity (Andrews & Bonta, 2010). General responsivity corresponds with using effective interventions (Andrews & Bonta, 2010). This means using interventions and techniques that have been shown to facilitate change in the literature (Andrews & Bonta, 2010). Cognitive behaviour therapy is generally what is recommended when working with offenders as it is one of the only effective ways to produce changes in behaviour and cognitions (Andrews & Bonta, 2010). In further studies, offenders who received CBT had one and a half times higher odds of not reoffending (Usher & Stewart, 2014). Specific responsivity refers to tailoring these general techniques to an individual’s circumstances (Andrews & Bonta, 2010). Tailoring involves consideration of an offender’s learning style, life circumstances, and motivations (Andrews & Bonta, 2010). This may include reducing barriers such as transportation or providing written material in an audio format (Singh et al., 2014) It is also important to responsivity to build the intervention on the strengths and protective factors an offender already possesses such as support networks or commitment and persistence (Singh et al., 2014). Indeed, building on strengths is another principle underlying the framework.

Additional principles in the RNR framework include offender’s strengths, professional discretion, and breadth of the program. A program built on an offender’s strengths has a greater chance of success (Andrews & Bonta, 2010). Doing this can increase an offender’s protective factors while decreasing his or her risk factors and overall risk of recidivism (Andrews & Bonta, 2010). It is also important that the professionals working with offenders work within the bounds of their expertise and only use interventions that have been shown to work (Andrews & Bonta, 2010). By not staying within the bounds of professional competence or incorrectly applying the RNR principles, it is possible to increase risk or reduce effective changes (Polaschek, 2012). Finally, the breadth of the program is an important factor. A program that incorporates all of the principles of the RNR framework has better outcomes than a program that incorporates only one or two of the principles (Andrews & Bonta, 2010; Pendergast et al., 2013). The more principles a program adheres to, the greater the effect (Andrews & Bonta, 2010).

Further research has been done on the validity of this framework and its application in the real world. Programs based on the RNR framework have shown substantial treatment gains and reductions in recidivism in comparison to other treatment frameworks (Usher & Stewart, 2014). The use of the RNR framework has been shown to work with different ethnicities (Usher & Stewart, 2014) and with both males and females (Vitopoulus et al., 2012). Grieger and Hosser (2014) have also shown that the Central Eight are applicable in other cultures, though the ordering of effects may differ across cultures. The importance of prosocial values and behaviours increases, violent recidivism decreases, and responsivity to further treatment increase (Stewart et al., 2014). The RNR framework now stands as the only effective framework for working with offenders (Polaschek et al., 2012) and is the model used by Correctional Service Canada (CSC; Usher & Stewart, 2014). However, there are limitations due to this model being a framework and not a designated program. Peterson-Badali (2015) found that many youth interventions did not target criminogenic need areas and did not use the most effective intervention methods available. Polaschek (2012) identified many deficits in a review of programs modelled on the RNR framework. He found many programs are based on more subjective viewpoints and information rather than empirically validated research (Polaschek, 2012). Many programs did not incorporate a component to increase motivation for change, and did not encourage the growth of prosocial skills and alternative behaviours (Polaschek, 2012). Often, the responsivity principle of tailoring an intervention to strengths was lacking (Polaschek, 2012). Others also found that while a program based on the RNR principle would work for males, there was less effect for females.
believed to be due to the lack of responsivity factors (Vitopoulus et al., 2012). Most important, all these programs required accurate structured risk assessments that assessed both risks and strengths (Polaschek, 2012).

**Risk Assessments**

Risk assessments have evolved through several generations of development. The first generation consisted of unstructured professional judgement (Bonta & Wormith, 2008). For risk assessments, professionals would conduct an unstructured clinical interview focusing on the factors they believed were related to the risk to reoffend (Bonta & Wormith, 2008). This form of risk assessment lacked validity as the factors chosen to be the focus of the interview were not proven to have any relation to the risk to reoffend (Bonta & Wormith, 2008). There was also a lack of consistency as the factors and the weight assigned to them varied across each professional (Bonta & Wormith, 2008). These deficits led to horrible outcomes for the offenders and the community (Andrews et al., 2006), and as a result, lead to the rise of actuarial measures for risk assessments (Andrews & Bonta, 2010). Actuarial measures consist of structured interviews focusing on factors shown to be related to the risk to reoffend (Bonta & Wormith, 2008). This structured allowed for more validity and reliability in risk assessments (Bonta & Wormith, 2008). However, second generation risk assessments, while using structured and actuarial measures, focused only on static risk factors such as age at first offense and past conduct (Andrews & Bonta, 2010). This approach had better predictive validity, but did not identify (Andrews et al., 2006) targets for intervention (Bonta & Wormith, 2008). This deficit has, in turn, led to the rise of third generation risk assessments.

The third generation of risk assessments integrated criminogenic need factors (Andrews et al., 2006). By assessing these areas, a level of risk was still determined, but assessments could also inform treatment decisions (Andrews et al., 2006). This approach gave rise to more than 120 different risk assessment tools (Singh et al., 2010). While none were found to be more effective than the others, the widespread acceptance and use of these tools have necessitated a regular review of the evidence for these tools (Singh et al, 2010). One such tool, the Level of Service Inventory (LSI; Bonta, 2000), showed very good predictive validity (Khanna et al., 2014) though this varies across studies (Andrews et al., 2011). An in-depth examination of this phenomenon found that it arises from variations in the populations studied and research designs (Andrews et al., 2011). This tool showed the highest predictive validity with a Canadian sample, and with women (Andrews et al., 2011). The Level of Service Inventory, and its youth version, were based on the RNR model and are purely actuarial measures (Andrews et al., 2011). Incorporating the Central Eight, it was intended to predict offending and reoffending (Andrews et al., 2011). However, more information is needed regarding responsivity and strengths factors, as risk assessments now inform many decisions in the justice system such as treatment, probation, parole, and community supervision (Singh et al., 2010).

Longer-term planning required a tool that could predict the life course risk of an offender. This led to the rising popularity of the Psychopathy Checklist (PCL; Hare, 1998); and its youth version (McCuish et al., 2014). According to the definition provided by the checklist, psychopathy is a label that indicates an offender is at high risk of recidivism and has a low likelihood of rehabilitation (Hare, 2003). This measure assesses risk factors for a life course of offending behaviour, which are different from those that predict adolescent offending behaviour (McCuish et al., 2014). Based on stable neuropsychological deficits that differentiate career offending from a more moderate trajectory, the PCL is considered the ‘gold standard’ for predicting life course offending (McCuish et al., 2014). It is known for its reliability, and for its
concurrent and predictive validities. (McCuish et al., 2014). With its focus on behavioural components, it highlights important targets for treatment to prevent recidivism (McCuish et al., 2014). However, the PCL is a risk-based tool (McCuish et al., 2014). While it performs its job admirably in predicting recidivism, it does not provide information on how to target criminogenic needs nor necessarily reflects any growth or gains an offender obtains (Peterson-Badali et al., 2015). Responsivity factors are often overlooked in the PCL and other third-generation risk assessments (Peterson-Badali et al., 2015). There is little to no emphasis on protective factors or strengths, which has led to the rise of fourth-generation risk assessment measures (de Vries et al., 2013).

Fourth-generation risk assessment tools were created to inform and monitor treatment as well as consider other treatment factors than just risk assessment (Bonta & Wormith, 2008). Due to demand, new measures assess both risk and protective factors, along with strengths and responsivity factors, were developed (Andrews et al., 2006; de Vries et al., 2013). A protective factor is a social or personal characteristic that predicts a low probability of a negative outcome (Portnoy et al., 2013). These tools are generally employed to assist with strength-based treatment planning (Childs et al., 2013) which follows the responsivity principle of building interventions on strengths (Singh et al., 2014). This application was uncommon until recently and, previously, there were few tools that allowed for strength-based assessment (Singh et al., 2014). Now, however, there are several such tools, including the Structured Assessment of Violent Risk factors for Youth (SAVRY), the Short-Term Assessment of Risk and Treatability: Adolescent Version (START:AV) and the Structured Assessment of Protective Factors for Violent Risk (SAPROF) (de Vries et al., 2013). The SAVRY has been shown to have good predictive validity for the behaviour of youths, both in and out of the justice system (Khanna et al., 2014; Childs et al., 2013). In some studies, the SAVRY had the best predictive ability of all tested assessment measures (Singh et al., 2014). This tool increases the accuracy of behaviour prediction over that of measures that only assess risk (Khanna et al., 2014). Risk and protective factors interact to provide a more accurate prediction of risk (Childs et al., 2013). The protective factors on the SAVRY are predictive of desistence from crime, with the resiliency item being most predictive (Rennie & Dolan, 2010). While this measure is not as accurate for different cultures (Rennie & Dolan, 2010), it has more robust psychometric data than the other measures currently available. The START:AV looks at both vulnerabilities and risk for every item meaning an item can be both a risk and a strength (Singh et al., 2014). The measure can be useful for treatment planning as it identifies key vulnerabilities and strengths (Singh et al., 2014), the protective factors do not in any way add to the predictive validity of the tool (Troquete et al., 2015). It was also found that those who score higher on this measure receive more strength-based interventions, while those that score lower do not (Troquete et al., 2015). So far, strength-based assessment has shown mixed results in regards to criterion validity and utility, which led to the development of the newest protective factor measure, the SAPROF (de Vries et al., 2013). This measure is meant to be used in conjunction with a structured professional judgement (SPJ) risk-based tool, allowing the SAPROF to focus exclusively on protective factors (de Vries et al., 2015).

Protective Factors

While risk factors have been the focus of research for many years, there is a new focus on protective factors (Portnoy et al., 2013). There is hope that by studying desistence, or the cessation of antisocial or criminal activity, the role of protective factors will become clearer (Portnoy et al., 2013). However, research has been hampered by definitional, operational, and measurement inconsistencies (Walker et al., 2013). Protective factors have gone by many terms
in the literature, including resilience, promotive factors and strengths (Portnoy et al., 2013). Occasionally, protective factors are seen as simply the absence of risk factors (Portnoy et al., 2013). Some studies of protective factors have found that the only factor that predicts desistance is a lack of risk factors (Carr et al., 2001). The absence of characteristics such as aggression (van der Put et al., 2014), maternal depression (Sirikantraporn, 2013), perceived threats to safety (Sirikantraporn, 2013), and antisocial attitudes (van der Put et al., 2014) have come to be defined in the literature as protective factors. Also, protective factors vary depending on the subject matter. Protective factors for antisocial behaviour can also be risk factors for anxiety and depression (Portnoy et al., 2013; Furgure et al., 2007). This lack of consistency has led to confusion in the literature and in the use of protective factors in assessment (Portnoy et al., 2013). To help clear this confusion, the Centers for Disease Control and Prevention released a definition of protective factors (Portnoy et al., 2013). A protective factor is a social or personal characteristic that predicts a low probability of a negative outcome (Portnoy et al., 2013). However, the confusion about definition remains in the literature. Future research should focus on defining protective factors (Farrington, 2004).

A protective factor can have either a direct or indirect effect (Fergusson et al., 2007; Portnoy et al., 2013) A protective factor can directly influence the outcome, independently of other environmental and personal factors present (Fergusson et al., 2007; Portnoy et al., 2013). A protective factor can also have an indirect, buffering or moderating effect (Fergusson et al., 2007; Portnoy et al., 2013). This means a protective factor is only operative when there is a risk factor present (Fergusson et al., 2007; Portnoy et al., 2013; Brennan et al., 1997). An example of this effect is that among high-risk youth, a high level of anxiety acts as a protective factor (Brennan et al., 1997). Interactions have also been observed between protective factors and risk factors as in the case of the risk factor of a weak bond with parents being mitigated due to having a mentor or other close adult (Jones et al., 2015; Stattin et al., 1997). Interestingly, despite this confusion, protective factors are a better predictor of criminal behaviour than environmental risk factors (Stattin et al., 1997). Those with high levels of protective factors start committing crimes at a later age, commit fewer crimes over their lifetime, and have fewer psychological problems over their lifetime (Rennie & Dolan, 2010). Those with more protective factors live fuller, and more enriching lives than those that possess fewer protective factors (Sirikantraporn, 2013). For these reasons, research should focus on identifying, measuring, and integrating protective factors into risk assessments (Farrington, 2004).

Many risk factors have already been identified and validated. These risk factors can be classified as environmental, social, individual, and biological. The most commonly found environmental factor is a caring, structured home environment (Sirikantraporn, 2013; Mullis et al., 2013; Barnert et al., 2015; Carr et al., 2001). This includes warmth, stability, discipline, rules and consequences (Sirikantraporn, 2013; Mullis et al., 2013; Barnert et al., 2015; Carr et al., 2001). Success in school, along with commitment to achieving success, is another environmental factor (van der Put et al., 2014; Kandel et al., 1988; Henry et al., 1999). While some define success as achieving well in school (Kandel et al., 1988; Henry et al., 1999), others have found that just being committed to doing as well as possible has the same effect (van der Put et al., 2014). Community activities have a similar effect (Mullis et al., 2004). While some see participation in community activities as enough (Mullis et al., 2004), others believe success in these activities is another important factor (Mahatmya & Lohman, 2011). Others have found that even employment shows the same effect (Walker et al., 2013). These four factors also have an impact on social factors. A caring environment can often lead to another protective factor, a
good, caring and supportive relationship with at least one caretaker (Sirikantraporn, 2013; Mullis et al., 2004; Bernert et al., 2015; Walker et al., 2013; Carr et al., 2001). Even a mentor outside of the home can have the same impact on a youth (Bernert et al., 2015; Walker et al., 2013). This can also help develop the skills for the other social factor of having many prosocial friends (Salekin and Lochman, 2008; Walker et al., 2013; Carr et al., 2001). However, the development of many of these factors can depend on the biological and individual traits of the youth.

Biological and individual protective factors are some of the strongest supported factors in the research. The most well-supported protective factor is IQ (Portnoy et al., 2013). High IQ and skills in executive functioning have been shown to decrease the risk of offending (Portnoy et al., 2013; Kandel et al., 1988; Stattin et al., 1997). Autonomic arousal and other physiological characteristics tied to anxiety are more contentious. While many studies found anxiety was a protective factor for criminal behaviour (Portnoy et al., 2013; Fergusson et al., 2007), some find it is only a protective factor when risk is present (Brennan et al., 1997). Interestingly, some factors, such as anxiety, can inhibit the development of other factors. One such factor is social competence, which is one of the most strongly supported individual factors in the literature (Sirikantraporn, 2013; Salekin and Lochman, 2008; Mullis et al., 2004; Stattin et al., 1997; Fergusson et al., 2007). The ability to develop and sustain relationships can increase both the resistance and desistence to criminal behaviour (Mullis et al., 2004). High levels of self-esteem, self-efficacy, and optimism and planning for the future also reduce future criminal behaviour (Sirikantraporn, 2013; Mullis et al., 2004; Carr et al., 2001). These traits can also help or hinder the development of an internal locus of control and emotional control that decrease the likelihood of crime (Sirikantraporn, 2013; Mullis et al., 2004; Barnert et al., 2015; Stattin et al., 1997; Henry et al., 1999). This, in turn, can foster another protective factor: problem solving skills (van der Put et al., 2014). While this factor has not yet been well documented, it shows promise as another target of intervention that ties in with many other skills (van der Put et al., 2014). With this body of research on many possible protective factors now available, de Vries (2013) developed a new measure to assess only protective factors: the Structured Assessment of Protective Factors for Violent Risk (SAPROF).

**Structured Assessment of Protective Factors for Violent Risk (SAPROF)**

The SAPROF is a new measure intended to give a more balanced and accurate judgement of risk compared to risk-based assessment measures (de Vries et al., 2013). Designed to complement a risk-based structured professional judgement tool, the SAPROF assesses positive factors that can be changed upon intervention (de Vries et al., 2015). Intervention planning and the growth of strengths are important targets of this assessment (de Vries et al., 2015). The SAPROF defines protective factors as characteristics about the individual, situation or environment that reduce the risk of future violent behaviour (de Vries et al., 2013). While some of these factors are the opposite of well-known risk factors, such as stress and coping or self-control and impulsivity, others, such as social competency, have no corresponding risk factors (de Vries et al., 2013). The SAPROF consists of sixteen items that are arranged in four scales: resilience, motivational, relational, and external (de Vries et al., 2013). These items are rated on a three point scale of 0-2 and provide a final protection judgement (de Vries et al., 2013). When used with a risk-based measure, there is also a final combined risk judgement on a five-point scale of low to high (de Vries et al., 2013). Many settings have reported utility in areas such as treatment goals and progress monitoring (de Vries et al., 2015).

While research is scarce, there have been some efforts to assess the psychometric properties of the SAPROF. Initial research has shown good interrater reliability and convergent
validity with the Historical-Clinical-Risk Management-20 (de Vries et al., 2013), and the Sexual Violence Risk-20 (Yoon et al., 2011), both of which are predictive of violent or sexual recidivism (de Vries et al., 2013; Yoon et al., 2011). While the SAPROF showed statistical significance in predicting the desistence of violent behaviour, the combined integrated risk judgement was more predictive than the final score of the SAPROF alone (de Vries et al., 2013). Interactions between the risk-based measures and the SAPROF have been observed (de Vries et al., 2015; Yoon et al., 2011); however, only the protective factors are still predictive of desistence at the three-year follow-up (de Vries et al., 2013). Despite high negative correlations between the SAPROF and risk-based tools, there has been no observed collinearity between items and those with the same risk rating, and higher protective scores show higher levels of desistence (de Vries et al., 2013). This suggests that protective factors may be independent of/different consideration from risk factors (de Vries et al., 2015). However, actuarial tools have not shown the same correlations with the SAPROF as structured professional judgement (SPJ) measures (Yoon et al., 2011), and no research has been conducted to observe how changes in protective factors affect the prediction of desistence (de Vries et al., 2015). There is still much to be figured out in regards to the SAPROF.
Chapter Three: Method

Participants
Participants for this study were selected from the population of youths between the ages of 12 and 18, of either gender, who were referred to the Hotel Deu Hospital (HDH) Family Court Clinic for a risk/need assessment by a psychologist due to their interactions with the court system between June 30, 2005 and April 2, 2015. To be referred, the youth must have been charged with a crime, had a suspected mental health concern, and the judge must have believed that a risk/need assessment was necessary to provide appropriate care and consequences. At the beginning of the assessment, participants were provided with a consent form (Appendix A) allowing for the collection and use of information for assessment and research purposes. Informed consent procedures were followed by providing participants the limits of confidentiality, the purpose of the assessment, and the uses of the collected information. The participants were then prompted to ask questions, and confirm their understanding of the procedure before giving their written consent. This procedure was retrospectively approved by the Research Ethics Board at St. Lawrence (Appendix B).

Study Design and Analyses
The present study used a retrospective cohort design to assess the associations between the SAPROF and other risk assessment measures. Descriptive statistics, in the form of counts and percentages, were used to summarize the personal characteristics of the participants.

As the final scores of the assessment measures are ratio data, Pearson correlations were used to determine the concurrent validity of the SAPROF. There were five variables used in this analysis. The first variable is the protective score, or the final numerical value of the SAPROF. This variable was compared to the following four variables:

(a) The criminal career risk variable was defined as the final numerical total of the Psychopathy Checklist.
(b) The Juvenile recidivism risk variable was the final numerical total of the YLS/CMI.
(c) The violent risk variable was the final numerical total of the risk portion of the SAVRY.
(d) Finally, the protective factor variable was the final numerical total for the protective portion of the SAVRY. The SAPROF was compared consecutively to each of the preceding variables.

Statistical hierarchal regression analysis was used to assess the utility of the SAPROF in predicting the degree of antisocial behaviour in the risk assessment battery. The dependent variable was the degree of current antisocial behaviour as measured by the fourth scale in the PCL-YV. This variable was chosen as the closest representative to outcome data that a risk assessment is attempting to determine. The independent variables in this analysis were the three other subscales of the PCL-YV, the final total of the YLS/CMI, the final total of the SAVRY risk portion, the final protective scale of the SAVRY, and the final total of the SAPROF. These variables were added to the model in the order above. This form of analysis was chosen due to the large sample size and the number and type of concepts being examined. Results from this analysis were displayed in both tables and figures.
File Review

Archival data were used in this study. These data were gathered through interviews at either St. Lawrence Youth Services or the Family Court Clinic at Hotel Dieu Hospital. Case-related documents were also gathered and completed at the time of the interview. The completed files were reviewed to abstract data on the participants and their results on the four assessment measures. Each participant had a form consisting of background and personal information and four assessment tools completed based on file review of data that was collected at a single point in time. SPSS was used to complete the correlational statistics work.

Measures

Using the archival data gathered through interviews and file reviews, four assessment measures were completed for each participant. The Youth Level of Service and Case Management Inventory (YLS/CMI), the Psychopathy Checklist- Youth Version (PCL-YV), the Structured Assessment of Violent Risk in Youth (SAVRY) and the Structured Assessment of Protective Factors for violence risk- Youth Version (SAPROF-YV) were coded based on the information provided in the risk/need assessments of each youth.

The YLS/CMI (Hodge & Andrews, 2011) is an actuarial risk assessment measure consisting of eight scales. These scales cover the risk and need factors of prior and current offenses, family and living circumstances, education and employment, peer relations, substance abuse, leisure and recreation, personality and behaviour, and attitudes and beliefs. Each scale provides items to be checked off when that behaviour was reputedly observed or recorded with each check scoring as a one. A final risk level is determined by totalling the checkmarks and comparing the score to norms based on gender.

The PCL-YV (Forth, Kosson, & Hare, 2003) is a structured professional judgement measure used to predict adult antisocial behaviour, consisting of four scales assessing the presence of interpersonal, affective, behavioural and antisocial characteristics. Items are scored between zero and two from interviews and collateral information. The items for each scale are totalled to provide a scale score. The scale scores are then summed to provide a total score that is compared to relative norms.

The SAVRY (Borum, 2006) is a structured professional judgement measure of risk, need and protective factors. Twenty-four items are arranged in three scales for risk and need factors. These scales are: (a) historical factors, (b) social and contextual factors, and (c) individual and clinical factors. The items in these scales are rated on an ordinal scale of low, medium or high. Six protective factors are included that are rated on a nominal scale of present or absent. As the SAVRY is not designed to operate as a numerical scale, consideration of every item provides structure for a final risk level on an ordinal scale determined by structured professional judgement.

The SAPROF-YV (de Vries Robbé, 2014) is a structured professional judgement tool that consists of 16 items arranged in four scales. These scales are resilience, motivational, relational and external factors. Each item in these scales is rated on an ordinal scale of 0 to 2. The three highest-rated protective factors are identified as strengths, while the three lowest scored items are considered as need areas. A final protective level is determined by consideration of each items and scales scores.

Procedure

After all forms were completed for the participants, the data were entered into an SPSS data file for analysis.
The concurrent validity of the SAPROF was assessed by correlating its total score with total scores on other risk assessment measures. Total scores on the SAPROF were negatively correlated with the total scores on the PCL-YV, the YLS/CMI, the total risk score of the SAVRY, and positively correlated with the total protective score of the SAVRY. A significant negative correlation was expected from these analyses, excepting the protective score on the SAVRY which was predicted to be positively correlated.

The unique predictive utility of the SAPROF was assessed through the use of hierarchical regression analysis (Tabachnick & Fidell, 2001). The dependent variable was the antisocial subscale of the PCL-YV. The independent variables entered at the first step were the interpersonal, affective and behavioural subscales of the PCL-YV, the final score of the YLS/CMI, the risk score of the SAVRY, and the protective score of the SAVRY. The order of entry at the first step was determined by the relative weight of each measure in court-ordered assessments. At the second step the SAPROF final score was added to the model. It was predicted that the SAPROF-YV would contribute significant unique covariance to the prediction of antisocial behaviour.
Chapter Four: Results

The sample consisted of 169 participants, of whom 74% were male (n=125) and 26% were female (n=44). The average age of the sample was 15.6 years, with a range of 12 to 18 and a standard deviation of 1.3 years. However, more than half of the participants were 16 years of age or older. The average age of first arrest was 14.2 years, with a standard deviation of 1.6 years. The average number of previous convictions was 3.7, though with a wide range (0-22), and a standard deviation of 4.9 years. Altogether, 30% of the participants had no previous convictions. Fully 69.2% of the sample had an individual education plan (IEP) at school; however, only 37.3% had previous interventions for behavioural concerns and less than 20% of the sample had received any interventions outside of the school. Participants were more likely to receive supports at school than through agencies in the community. The frequency of alcohol and drug use was also examined. Drug use being more common than alcohol, with 50% of participants scoring as often or severe use (Figure 1).

Figure 1. Frequency of alcohol and drug use in the sample.

While 78.7% of participants had previous received mental health diagnoses, fully 77.5% of participants were either given, had removed, or had a changed diagnosis as a result of the FCC assessment. Nonetheless, the proportion of Attention Deficit Hyperactivity Disorder remained almost identical, with 65.7% reported in prior diagnoses versus 66.3% after assessment at FCC. However, the percentage of conduct disorder diagnoses increased from 34.3% in previous
diagnoses to 80.5% at FCC assessment. Chi square tests were conducted to test for differences between rates of diagnoses before and after the assessment. While the difference in ADHD diagnoses was not significant, $X(1) = 88.41, p=.000$, the increase in diagnosis of conduct disorder at FCC assessment was significant, $X(1) = 8.964, p < .003$.

To assess the convergent and discriminant validity of the SAPROF-YV, scores on the SAPROF-YV were correlated with the PCL-YV, the YLS/CMI, the SAVRY Risk total score and the SAVRY Protective total score. The results of the correlational analyses, along with variable means and standard deviations can be seen in Table 1. The SAPROF-YV was significantly correlated with risk (YLS/CMI, PCL-YV, SAVRY Risk Factors) and protective (SAVRY Protective Factors) factor assessment measures with a two-tailed test at a level of $p < 0.01$.

Table 1. The results of the Pearson correlation analyses, means and standard deviations.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>$Sd$</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SAPROF-YV</td>
<td>10.77</td>
<td>5.252</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. PCL-YV</td>
<td>22.34</td>
<td>7.424</td>
<td>-.673*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. YLS/CMI</td>
<td>24.65</td>
<td>8.310</td>
<td>-.683*</td>
<td>.829*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SAVRY Risk</td>
<td>27.37</td>
<td>8.902</td>
<td>-.621*</td>
<td>.805*</td>
<td>.799*</td>
<td></td>
</tr>
<tr>
<td>5. SAVRY Protective</td>
<td>1.65</td>
<td>1.641</td>
<td>.747*</td>
<td>-.729*</td>
<td>-.727*</td>
<td>-.752*</td>
</tr>
</tbody>
</table>

*p<.01

A two stage hierarchal regression was conducted with antisocial features subscale of the PCL-YV as the dependent variable. At stage one, the three other subscales of the PCL-YV, the final total of the YLS/CMI, and the risk total of the SAVRY were entered. The order of entry followed the weight given and sequence of the measures in a court-ordered assessment. For stage two, the SAPROF-YV was added. The SAPROF-YV was not significant when added to the model after risk factors were considered $F(6)= 43.657, p < .05$. The inter-correlations among the assessment measures are presented in Table One above. The regression statistics are presented in Table 2.
Table 2. Hierarchal regression analysis.

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>t</th>
<th>Sr²</th>
<th>R</th>
<th>R²</th>
<th>∆R²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step One</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCL-YV Subscale One</td>
<td>-.207</td>
<td>-3.567</td>
<td>-.275</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PCL-YV Subscale Two</td>
<td>.275</td>
<td>3.566</td>
<td>.275</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCL-YV Subscale Three</td>
<td>.106</td>
<td>1.295</td>
<td>.103</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YLS/CMI Total Score</td>
<td>.275</td>
<td>2.838</td>
<td>.222</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAVRY Risk Total</td>
<td>.314</td>
<td>3.496</td>
<td>.270</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step Two</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCL-YV Subscale One</td>
<td>-.182</td>
<td>-3.050</td>
<td>-.238</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCL-YV Subscale Two</td>
<td>.281</td>
<td>3.665</td>
<td>.282</td>
<td></td>
<td></td>
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<tr>
<td>PCL-YV Subscale Three</td>
<td>.134</td>
<td>1.613</td>
<td>.128</td>
<td></td>
<td></td>
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<tr>
<td>YLS/CMI Total Score</td>
<td>.313</td>
<td>3.162</td>
<td>.246</td>
<td></td>
<td></td>
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<tr>
<td>SAVRY Risk Total</td>
<td>.324</td>
<td>3.622</td>
<td>.279</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPROF-YV Total</td>
<td>.122</td>
<td>1.677</td>
<td>.134</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

The hierarchal multiple regression revealed that at stage one, all risk assessment variables contributed significantly to the prediction of antisocial features, F(5, 156) = 51.231, p < .0001 and accounted for 61% of the variation in antisocial features. Adding the SPROF-YV to the prediction model at stage two explained an additional 0.7% of the variation in antisocial features which is not significant, F(6, 155) = 2.813, p < .096. Together, the five independent variables accounted for 61% of the variance in antisocial features.
Chapter Five: Discussion

Conclusions and Implications

The sample was predominantly male and over the age of 15. Most experienced their first arrest at 14 years of age, with 70% of the sample having previous convictions in the justice system. While a similar proportion of the sample had an ADHD diagnosis and assistance through the school in the form of an IEP, only 34% had a pre-existing diagnosis of conduct disorder and less than 20% received services outside of the school. As 80% of the sample received a conduct disorder diagnosis by the end of the FCC assessment, there appears to be an under-identification of conduct disorder in the community, which may influence the low rates of assistance these youth receive.

The SAPROF-YV demonstrated convergent validity by being significantly positively correlated with the protective factor subscale on the SAVRY. Discriminant validity was also shown through significantly high negative correlations with all the risk factor assessment measures. These findings provide evidence that the SAPROF-YV captures the concept of protective factors. This assessment measure is valid for assessing protective factors as seen through these findings matching the concept conveyed by Portnoy (2013), and the Centres for Disease Control and Prevention definition that protective factors predict a low probability of a negative outcome. The risk assessment measures were also significantly positively correlated with each other, showing convergent validity. The risk assessment measures were also significantly negatively correlated with the other protective factor measures, thereby showing discriminant validity. Taken together, these results strongly support the validity of the concepts of risk and protective factors.

However, the SAPROF-YV did not contribute significantly to the prediction of an individual’s level of antisocial behaviour. After all risk assessment measures were considered, protective factors did not significantly add to the prediction of level of antisocial behaviour, uniquely predicting only 0.7% of the variance in antisocial features. However, this is without consideration of interaction effects between protective factors and risk factors that has been theorized in the literature. Some have stated that protective factors work through a moderating or buffering effect on a present risk factor, and those buffering effects have not been further researched (Fergusson et al., 2007; Portnoy et al., 2013; Brennan et al., 1997). Also, the antisocial features measure is a static variable based on information that cannot be reduced. This is an important distinction as the SAPROF-YV measures more dynamic features of violent crime and treatment. A dynamic dependent variable, like outcome measures such as treatment success or standard of living, may be more highly correlated with the SAPROF-YV. The SAPROF-YV may add to the predictive value of these dynamic outcome measures, which would benefit the trend occurring in risk/need assessments that focuses on dynamic variables to be able to reassess and measure progress.

Overall, these results both supported and added to current literature on the SAPROF-YV. As seen in the literature, there was evidence of convergent and divergent validity with risk-based measures. However, these results did not show predictive utility. This could be due to the static factor used to measure antisocial features. That variable was based on static historical factors such as number of convictions and versatility of crime. In the literature, de Vries (2015) theorized and supported the belief that the SAPROF-YV was useful due to the ability to measure dynamic factors that would change during treatment.
Strengths and Limitations

This study had many areas of strength. A predetermined risk/need assessment and the relevant outcome measures had already been conducted and a large sample was available for analysis. The sample appeared to represent the diversity of young offenders in Kingston. The results of the present study also highlight the need for further research into protective factors and how they interact with risk factors before protective factors can be used efficiently in assessment and intervention.

There were also a number of limitations in the study. While the sample might be representative of Kingston’s young offender population, the sample may not be representative of youth justice clients across Canada, such as in areas with a high Aboriginal population. While the information was gathered over several years, the assessments were completed over 8 non-consecutive months, which resulted in limited consideration for the scoring of each assessment. There may be history or testing effects due to the length of time during which these assessments were gathered. Due to the information being gathered over many years, societal events that occurred between the beginning and the ending of the gathering period could alter the scoring of items on the assessments between participants. For example, the availability of cell phones grew through these years, which could have altered the information gathered on social competence and other related scales. Testing effects could also be present due to information being gathered over several interviews, which allowed participants an idea of the questions being asked in the interviews and how to answer the assessor. There were three different assessors during the course of gathering the information, which could also be reflected in the data. Potential variability among multiple assessors scoring the same participant in some instances could not be assessed. Finally, all assessments were based on archival data, as opposed to direct observation which is the recommended information gathering strategy for these assessments.

Challenges and Ethical Issues

There were many challenges at the individual level in this study. As the results of the assessments could influence the sentencing of the clients in the justice system, the clients may have been motivated to monitor and modify information for social desirability. While collateral information was gathered where possible, the unknown quality of veracity in the clients’ information could influence and alter the results of risk/need assessments.

Due to the amount of comprehensive assessments that are completed at Family Court Clinic, there was limited time to gather information and consolidate it for risk/need assessments. This limited the amount of collateral information gathered, and this may also have skewed the results. This time limit also reduced the amount of risk/need assessments that could be completed in a reasonable time.

Society’s view of antisocial behaviour also presented a challenge. Different labels and explanations were given for the same behaviour depending on the contact or client. Thorough and comprehensive interviewing was required to differentiate concerns and behaviours.

Contributions to the Field

This study added to the literature pertaining to protective factors for antisocial behaviours. The concept of protective factors was validated by these results. The SAPROF-YV’s concurrent and divergent validity was upheld in this study. Information concerning how protective factors and risk factors interact to arrive at a level of antisocial behaviour was uncovered. This study also adds to the demographic information on antisocial youth such as how many have a diagnosis and how many are appropriately diagnosed. The assessments tailored for
youth were analyzed for validity and utility. The results provide new insight for further research into the factors specific to youth antisocial behaviour and possible avenues to change outcomes.

**Further Research**

There are many possible avenues of further research on the nature of protective factors in and the evolution of antisocial behaviour. Information regarding the interactions between protective factors and risk factors is necessary to continue assessing risk. Studies that explore the ability of protective factors to predict antisocial behaviour and what factor is most highly correlated with different outcomes are other areas in need of further research. Studies that assess the predictive ability of the SAPROF-YV regarding a dynamic outcome variable such as success in treatment, recidivism, or standard of living in necessary. Finally, how the assessment of protective factors can increase the efficacy of interventions also needs to be explored.
References


Portnoy, J., Chen, F. R., & Raine, A. (2013). Biological protective factors for antisocial and


Appendix A
Consent Form

Consent to Disclose, Access, and Gather Information for a S.34 Assessment

I, __________________________, have been referred to the Family Court Clinic (FCC) for an assessment by the Youth Courts. It has been explained to me that in the process of conducting an assessment the staff of the FCC will need to collect personal health information from a variety of collateral sources. I have given my consent for FCC to collect information for the purpose of a psychological assessment. I realize that the FCC will contact family members, guardians, and teachers for the purpose of acquiring information for the psychological assessment, and subsequent treatment recommendations, and I am agreeable to this. Further, I have given my permission to the FCC to contact and collect information, such as reports or case summaries from any of the following sources, if applicable, for the purpose of the assessment; schools, social service agencies (e.g., CAS, children’s mental health and social workers), mental health professionals (e.g., psychologists and psychiatrists), and criminal justice personnel (e.g., crown attorney, police, and probation).

I understand that any information gathered by the FCC on my behalf will not be disclosed to other parties unless required by law. I am aware that this assessment will become property of the courts and be disclosed to myself or my legal representative and the crown attorney. It may be given to others at the discretion of the court. I recognize, however, that individuals receiving this information may need to share information with colleagues in the normal course of their duties. I have spoken with the psychologist or designate about issues of consent and disclosure and the limits placed on access to my file by outside parties. I have been explained the limits of confidentiality.

It is also understood that the information supplied and provided during the course of the assessment may be utilized for administrative reporting (e.g., Ministry), program evaluation, or research purposes. In such events, under no circumstances will my name be released or specifically identified.

The following restrictions have been requested:

Robert C. Rowe, Ph.D., C.Psych.                        Signature                        Date

Client (print)                                          Signature                        Date

Date: Nov 2011
FCC Disclosure

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Appendix B
Research Ethics Board Approval

October 15, 2015
Kelsie Mahoney
Apartment 2, 559 Albert Street
Kingston, ON  K7K 4M5

SLC REB Reference Number: 2015-REC-32
Project Title: Utility of the Inclusion of the SAPROF-YV in Risk Assessments of Young Offenders

Dear Kelsie:

I am writing to advise you that the Research Ethics Committee – Psychology (REC-P), a subcommittee of the Research Ethics Board (REB) of St. Lawrence College, has granted Approval to the above-named research study. Your research may now begin.

You have one year to complete the project from the time of approval. Should you require more time to complete your project, you will be required to submit a request for ongoing ethics approval for your project. This must be submitted prior to REB approval expiry.

Please review St. Lawrence College's Policy on Research Integrity, which is attached for your convenience. You are obligated to keep your files up to date and inform the REB of any changes to your study. Any changes to the approved protocol or consent materials must be reviewed and approved through the amendment process prior to its implementation. Both a Request for Amendment of an Approved Project form and a revised application must be submitted to the research office for review by the REB.

Any adverse or unanticipated events during the course of your research must be reported to the REB as soon as possible. The REB reserves the right to review your file at any time to ensure that research is being conducted in accordance with all SLC policies.

Once your project is complete, you are required to complete a Project Termination form (included with REC-P approval documents). This form must be submitted as a final report about your research to the REB.

Best wishes for the successful completion of your project.

Best Regards,

Alison Tucker
Chair, Research Ethics Board

cc. Cam McEachern, Director, Research
Christian Kerestzes, faculty supervisor