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**THE PSYCHOPATHY CONSTRUCT IN A  
SWEDISH CONTEXT –  
CONCEPTUALIZATION AND VALIDATION  
OF DIFFERENT ASSESSMENTS**

Karolina Sörman



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THE PSYCHOPATHY CONSTRUCT IN A SWEDISH  
CONTEXT – CONCEPTUALIZATION AND VALIDATION  
OF DIFFERENT ASSESSMENTS  
THESIS FOR DOCTORAL DEGREE (Ph.D.)

By

**Karolina Sörman**

*Principal Supervisor:*

Håkan Fischer, Ph.D., Professor  
Stockholm University  
Department of Psychology

*Co-supervisor(s):*

Marianne Kristiansson, M.D., Ph.D.,  
Adjunct Professor  
Karolinska Institutet  
Department of Clinical Neuroscience  
Division of Social and Forensic Psychiatry

John F. Edens, Ph.D., Professor  
Texas A&M University  
Department of Psychology  
College Station, Texas, USA

Katarina Howner, M.D., Ph.D.  
Karolinska Institutet  
Department of Clinical Neuroscience  
Division of Social and Forensic Psychiatry

*Opponent:*

Kasia Uzieblo, Ph.D.  
University College Thomas More  
Department of Applied Psychology  
Antwerp, Belgium  
Visiting Professor  
Ghent University  
Department of Experimental-Clinical and Health  
Psychology

*Examination Board:*

Niklas Långström, M.D., Ph.D., Professor  
Karolinska Institutet  
Department of Medical Epidemiology and  
Biostatistics

Anders Sjöberg, Ph.D., Associate Professor  
Stockholm University  
Department of Psychology

Eva Lindström, M.D., Ph.D., Associate Professor  
Uppsala University  
Department of Neuroscience



**This journey had never been the same if it had not started exactly where it started. Till platsen med de silvriga vattenfallen, den svarta vulkansanden och den regntunga djungeln:**

**Kia Ora, New Zealand.**

Tid är ett falskt mått för liv. Tid är ett i grunden värdelöst mätinstrument, ty det når bara mitt livs utanverk. Men allt väsentligt som händer mig och ger mitt liv sitt underbara innehåll: mötet med en älskad människa, smekningen på huden, hjälpen i nöden, månskenet i ögonen, segelturen på havet, glädjen åt ett barn, rysningen inför skönheten, utspelas helt och hållet utanför tiden. Ty om jag möter skönheten en sekund eller hundra år är likgiltigt. Saligheten står inte endast vid sidan av tiden, den säger upp livets bekantskap med tiden.

(Stig Dagerman ur *Vårt behov av tröst är omätligt*)



## ABSTRACT

Psychopathy is a personality disorder that is associated with affective and interpersonal features (e.g., lack of empathy, egocentricity) in combination with behavioral deviance. Despite being extensively researched, formal criteria for classifying psychopathy are lacking, and some of its core features are intensively debated in the field (Skeem et al., 2011). One of the reasons behind the conceptual controversy is that during the past three decades, psychopathy has mainly been operationalized with one single measure, the Psychopathy Checklist-Revised (PCL-R; Hare 1991, 2003).

Alternative assessments and models of psychopathy have gained increased attention in international research. This dissertation project aimed to investigate the reliability and validity of traditional and alternative assessments and models of psychopathy, primarily in a Swedish context.

**Study I** aimed to investigate the field reliability of the PCL-R in a Swedish setting, involving life-sentenced offenders ( $N = 27$ ) undergoing court-ordered risk assessments. The results demonstrated good reliability for the antisocial Facet 4, but considerably lower reliability for the remaining facets.

The aim of **Study II** was to investigate the psychometric properties of the Swedish translation of the self-report measure Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) in a non-criminal sample ( $N = 227$ ). The results demonstrated solid reliability (test-retest and internal consistency) and somewhat mixed construct validity for the PPI-R. Factor analyses failed to confirm any of the proposed factor structures.

In **Study III**, we investigated perceptions of the Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke et al., 2012) model among Swedish forensic practitioners ( $N = 90$ ), using prototypicality analysis. The aim was also to investigate broader perceptions and attitudes about psychopathy. The results demonstrated support for the content validity of the CAPP, and findings were highly similar to those in previous international research.

**Study IV** aimed to investigate perceptions of the *Boldness* construct from the Triarchic model of psychopathy (Patrick et al., 2009) among professional and layperson raters from Sweden and the U.S. ( $N = 535$ ), using prototypicality analysis. The results demonstrated general support for the content validity of *Boldness*, even though the ratings varied across the subgroups.

In conclusion, this dissertation project demonstrated mixed findings regarding the field reliability of the PCL-R. It also demonstrated support for the reliability and validity of alternative assessments and models of psychopathy.

## LIST OF SCIENTIFIC PAPERS

- I. Sturup, J., Edens, J.F., **Sörman, K.**, Karlberg, D., Fredriksson, B., & Kristiansson, M. (2014). Field Reliability of the Psychopathy Checklist Revised Among Life Sentenced Prisoners in Sweden. *Law and Human Behavior, 38*(4), 315-24.
- II. **Sörman, K.**, Nilsonne, G., Howner, K., Tamm, S., Caman, S., Wang, H.X., Edens, J.F., Gustavsson, P., Lilienfeld, S.O., Petrovic, P., Fischer, H., & Kristiansson, M.  
Reliability and Construct Validity of the Psychopathic Personality Inventory-Revised in a Swedish Non-Criminal Sample.  
[Manuscript].
- III. **Sörman, K.**, Edens, J.F., Smith, S.T., Svensson, O., Howner, K., Kristiansson M., & Fischer, H. (2014). Forensic Mental Health Professionals' Perceptions of Psychopathy: A Prototypicality Analysis of the Comprehensive Assessment of Psychopathic Personality in Sweden. *Law and Human Behavior, 38*(5), 405-17.
- IV. **Sörman, K.**, Edens, J.F., Smith, S.T., Clark, J.W., Kristiansson, M., Svensson, O. Boldness and Its Relation to Psychopathic Personality: Prototypicality Analyses Among Forensic Mental Health, Criminal Justice, and Layperson Raters. [Manuscript].



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## LIST OF ABBREVIATIONS

AERA	American Educational Research Association
APA	American Psychiatric Association
ASPD	Antisocial personality disorder
BE	Blame Externalization
CAPP	Comprehensive Assessment of Psychopathic Personality
CAPP-IRS	CAPP-Institutional Rating Scale
CAPP-SRS	CAPP-Staff Rating Scale
CD	Conduct disorder
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CH	Coldheartedness
CLPS	Collaborative Longitudinal Personality Disorders Study
CN	Carefree Nonplanfulness
CU	Callous-unemotional
DDF	Difficulty Describing Feelings
DIF	Difficulty Identifying Feelings
DSM	Diagnostic and Statistical Manual of Mental Disorders
EC	Empathic Concern
EFA	Exploratory Factor Analysis
EOT	Externally Oriented Thinking
ESEM	Exploratory Structural Equation Modeling
F1	Factor 1
F2	Factor 2
F	Fearlessness
FD	Fearless Dominance
FS	Fantasy
ICC	Intra-class correlation
ICD	International Classification of Diseases

IRI	Interpersonal Reactivity Index
IRT	Item Response Theory
LPE	Limited Prosocial Emotions
MANOVA	Multivariate Analysis of Variance
ME	Machiavellian Egocentricity
NAU	National Assessment Unit
NIMH	National Institute of Mental Health
PCL	Psychopathy Checklist
PCL-R	Psychopathy Checklist-Revised
PCL:SV	Psychopathy Checklist-Screening Version
PCL:YV	Psychopathy Checklist Youth Version
PD	Personal Distress
PDs	Personality disorders
PPI	Psychopathic Personality Inventory
PPI-R	Psychopathic Personality Inventory-Revised
PSYCOM	Psychopathic traits in community groups
PT	Perspective Taking
RDoC	Research Domain Criteria
RMSEA	Root Mean Square Error of Approximation
RN	Rebellious Nonconformity
RTM	Regression to the mean
SCI	Self-Centered Impulsivity
SES	Socioeconomic status
SMD	Severe mental disorder
SOI	Social Influence
SRMR	Standardized Root Mean Square Residual
STAI	State-Trait Anxiety Inventory
STAI-S	State Anxiety Scale
STAI-T	Trait Anxiety Scale
STI	Stress Immunity
SVP	Sexually violent predators

T1	Test 1
T2	Test 2
TAS-20	Toronto Alexithymia Scale
TriPM	Triarchic Psychopathy Measure
WHO	World Health Organization



# 1 INTRODUCTION

## 1.1 PROJECT RATIONALE

### 1.1.1 The psychopathy construct – conceptual controversy

Psychopathy is a personality disorder that is associated with a constellation of affective, interpersonal and behavioral features, including lack of empathy and guilt, egocentricity and poor impulse control (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). Despite being extensively researched (Miller & Lynam, 2014), consensus is lacking about some of the core features in psychopathy (Lilienfeld, Watts, Francis Smith, Berg, & Lutzman, 2014a; Skeem et al., 2011). An intensive conceptual debate is taking place in the field at present, which concerns the role of antisocial and criminal behavior (i.e., whether they should be considered central features, or behavioral expressions of psychopathy), but also the potential relevance of “seemingly adaptive” traits (e.g., lack of anxiety, emotional resilience) to the psychopathy construct (Lilienfeld et al., 2012a; Miller & Lynam, 2012; Skeem & Cooke, 2010a). Another unresolved aspect is whether there exist subtypes of psychopathy that differ with regards to personality dispositions and behavioral outcomes (Skeem et al., 2011).

### 1.1.2 Why is a common understanding of psychopathy important?

Psychopathy assessments are widely used by correctional and psychiatric services, primarily as a risk assessment tool to inform legal decisions (e.g., sentencing, correctional placement and surveillance). Therefore, it is crucial to obtain an improved understanding of psychopathic traits in different settings. One reason behind the current controversy is that during the past decades, one single assessment, the Psychopathy Checklist-Revised (PCL-R; Hare 1991; 2003), has predominated in research and clinical practice. The PCL-R places a relatively strong focus on deviant behavior and has contributed to a large body of research on antisocial and criminal aspects of psychopathy. There is currently less knowledge, however, about affective and interpersonal psychopathic traits (e.g., lack of empathy, lack of anxiety) unconfounded by criminality (Skeem et al., 2011).

### 1.1.3 Emerging research trends

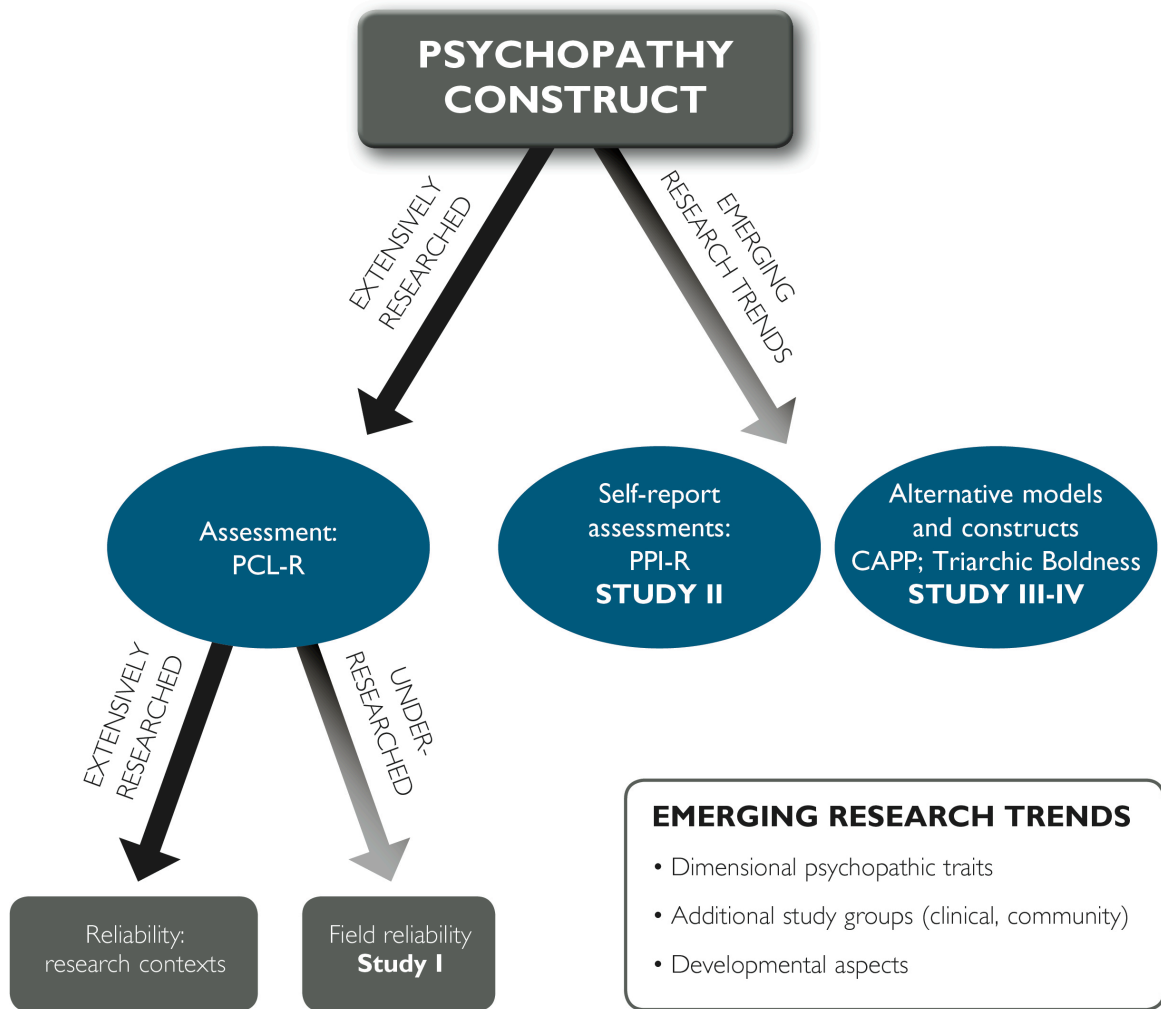
A few trends are emerging in the field, as illustrated in Figure 1. There is increased interest for investigating *dimensional* psychopathic traits (i.e., investigating degree of traits rather than psychopathy as a single entity) outside of criminal settings (Lilienfeld et al., 2014a; Miller & Lynam, 2014). During recent years, alternative assessments and theoretical models of psychopathy have been formulated that emphasize affective and interpersonal traits of psychopathy, with less focus on antisocial and criminal behavior. These include the self-report measure Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005), and two new conceptual models of psychopathy: the Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke, Hart, Logan, & Michie, 2012) and the Triarchic

model of psychopathy (Patrick, Fowles, & Krueger, 2009). These assessments and models emphasize different domains or facets of psychopathy and are less focused on diagnostic thresholds. They have gained increased attention in international research. To date, however, they have not been investigated in a Swedish context.

#### **1.1.4 This dissertation project**

This dissertation project aimed to investigate reliability and validity of traditional and alternative assessments and models of psychopathy, primarily in a Swedish context (see Figure 1). To date, most studies on the reliability of the PCL-R have been conducted in research contexts. **Study I** aimed to investigate *field reliability* of the PCL-R in a Swedish clinical setting, particularly involving life-sentenced offenders. **Study II** aimed to investigate the psychometric properties of the Swedish translation of the PPI-R. **Study III** aimed to assess content validity of CAPP, by investigating perceptions of the model among Swedish forensic practitioners. In **Study IV**, the aim was to investigate perceptions of the *Boldness* construct from the Triarchic model of psychopathy (which reflects lack of anxiety, emotional resiliency and venturesomeness) among professional and layperson raters.





**Figure 1.** An illustration of how this dissertation project relates to knowledge gaps in the field. Blue ovals illustrate the assessments and models, investigated in this project. Black arrows depict areas that are extensively researched. Grey arrows depict areas that are currently under-researched.

## **1.2 PSYCHOPATHY IN A BROADER CLINICAL FRAMEWORK**

### **1.2.1 Personality and personality disorders: a brief introduction**

Theories about personality and its disorders trace back to ancient civilizations (Millon, 2012). The contemporary definition is that personality reflects patterns of interlinked aspects, including cognition, emotion, motivation and behavior (Heim & Western, in Oldham, Skodol, & Bender, 2014). Personality disorders (PDs) are psychiatric conditions characterized by maladaptive and inflexible personality patterns (Skodol, in Oldham et al., 2014). Individuals with PDs tend to have problematic and chaotic interactions with their surroundings, including work settings and social relationships. They might also lack insight into the suffering their behaviors cause others (Bornstein, 2011). PDs are proposed to be relatively common in the general population, with an estimated prevalence of around 10% for any PD, reported from studies in U.S. populations (Torgensen in Oldham et al., 2014). It is commonly assumed that PDs are relatively stable throughout the life course (Sanislow et al., 2009). In contrast to this general view, the Collaborative Longitudinal Personality Disorders Study (CLPS) from the U.S., a 10-year prospective follow-up study of the natural course of several different PDs, demonstrated considerable fluctuations in symptomatology over time (Sanislow et al., 2009).

PDs are diagnosed using criteria in one of the official classifications systems: the *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association; APA), or the *International Classification of Diseases* (ICD; World Health Organization; WHO). Psychopathy is not included in these official classification systems (further described below).

### **1.2.2 Current trends: dimensional models and transdiagnostic mechanisms**

During recent years, there has been an increased focus on the possibility of complementing the categorical diagnostic classification in DSM or ICD with assessment of dimensional traits of personality pathology (Brown & Barlow, 2009; Morey & Bender, in Oldham et al., 2014; Trull & Widiger, 2013). A major reason for the emerging interest for dimensional traits of personality pathology is the high degree of overlap (i.e., comorbidity) between different diagnoses. Moreover, diagnostic categories are heterogeneous in the sense that different individuals can meet criteria in alternate ways (Morey & Bender, in Oldham et al., 2014). Another concern with the categorical classification is that the diagnostic threshold might give an erroneous assumption that individuals who pass the threshold are qualitatively different from individuals who do not (Bornstein, 2011). The dimensional approach aims to identify core impairments and pathological traits shared by most PDs (Morey & Bender, in Oldham et al., 2014). Preceding the publication of the latest revision of the DSM (i.e., DSM-5, APA, 2013), a “hybrid” approach was formulated, which proposes that categorical classifications should be complemented with dimensional assessments of personality pathology (Bornstein, 2011; Brown & Barlow, 2009).

Taking the dimensional approach one step further, there is increased interest in the potential relevance of transdiagnostic mechanisms in psychopathology (Brown & Barlow, 2009). Transdiagnostic mechanisms refer to neurobiologically based constructs (e.g., behavioral inhibition; fear reactivity) proposed to underlie several different diagnoses (Brown & Barlow, 2009). In support of this view, the National Institute of Mental Health (NIMH) recently launched the Research Domain Criteria (RDoC) project. This project aims to provide a platform for research on neurobiologically based constructs, using various biological markers (e.g., genetic, molecular, cellular) (Insel et al., 2010). An improved knowledge of the relevance of transdiagnostic mechanisms could be useful in complex clinical classifications of patients who have several comorbid or subthreshold diagnoses (Nelson, Strickland, Krueger, Arbisi, & Patrick, 2015). The association between biological mechanisms and personality pathology has also been supported by large-scale genome-wide studies demonstrating genetic risk factors shared between several psychiatric diagnoses (Nat Neurosci, 2015).

In the psychopathy field, there is also growing interest in the role of neurobiobehavioral constructs (i.e., fear/fearlessness; inhibition/disinhibition) for the development and manifestation of psychopathic traits (Nelson et al., 2015; Patrick & Drislane, 2014). The phenotypic domains in the Triarchic model of psychopathy (Patrick et al., 2009; described in 1.6.4) could serve as constructs for neurobiological research on psychopathic traits.

## 1.3 HISTORICAL DEFINITIONS OF PSYCHOPATHY

### 1.3.1 A thematic summary

Psychopathy is one of the most extensively researched personality disorders (Miller & Lynam, 2014). Anecdotal evidence dates back to 1809, with French psychiatrist Philippe Pinel's descriptions of violent male patients who presented with "insanity without delirium". The first account of the word psychopathy is found in the early psychiatric classifications. For example, German psychiatrist Koch (1891) applied the concept "psychopathic inferiority" to a range of different conditions (e.g., mental retardations, "character disorders") (Skeem et al., 2011). Throughout history, psychopathy has been characterized as entailing behavioral deviance, however the theories have varied with respect to their emphasis on explosive and violent behavior (e.g., brutality, callous exploitation of others) on the one hand, and "seemingly adaptive" traits (e.g., charm, social dominance, lack of anxiety) on the other (Venables, Hall, & Patrick, 2014).

Across the different definitions, there has been varying emphasis on environmental versus biological influences. In 1909, Birnbaum coined the term "sociopathy", referring to antisocial and deviant behaviors that he considered environmentally based (Skeem et al., 2011). In the 1940's, Benjamin Karpman formulated a theory about "primary" and "secondary" psychopaths based on his own clinical observations (Skeem et al., 2011). He proposed that both subgroups manifest antisocial behavior, however whereas "primary" psychopaths have an emotional deficit, "secondary psychopaths" are characterized by an emotional disturbance (Skeem et al., 2011). This swing of the pendulum partly reflects broader trends emphasizing "nature or nurture". Moreover, the theories have been formulated based on different study groups (i.e., psychiatric patients, or criminal groups).

### 1.3.2 The Mask of Sanity – Hervey Cleckley's seminal work

*"We are dealing here not with a complete man at all but with something that suggests a subtly construed reflex machine which can mimic the human personality perfectly"*  
(Cleckley, 1988; p.369)

In 1941, American psychiatrist Hervey Cleckley published the first edition of *The Mask of Sanity*. This seminal work is a milestone in psychopathy conceptualization and has been influential for most contemporary assessments and models (cf., Lilienfeld & Widows, 2005; Patrick et al., 2009). Based on his own observations of psychiatric patients, which consisted of adult males and females, and adolescents of both genders, Cleckley formulated 16 criteria for a clinical profile of psychopathy (1988). These criteria can be divided into three categories (Patrick, 2006; p.612): traits of *positive adjustment* (e.g., superficial charm and good intelligence, lack of anxiety or nervousness, suicide rarely carried out); *emotional/interpersonal* (e.g., emotional unresponsiveness, deceitfulness, lack of remorse or shame, untrustworthiness); and *behavioral deviance* (e.g., failure to learn from experience,

irresponsibility, impulsiveness, inadequately motivated antisocial behavior). Cleckley viewed psychopathy as a paradoxical condition that encompasses a façade of normal functioning and robust mental health, concealing a deep-seated pathology and deficient behavioral control. Psychopathic individuals can learn to express words with emotional content, but can merely mimic the speech and social interaction in other humans. Cleckley referred to this as “semantic aphasia”. Psychopathic individuals are unable to experience moving emotional states themselves, something Cleckley referred to as “a personality that lacks ingredients” (1988; p.386). This raises a philosophical question – what is then a human?

According to Cleckley, psychopathic individuals are aimless and lack major goals in life. This goalless behavior extends into several life domains, including an impersonal and trivial sex-life but also inadequately motivated antisocial behavior (Cleckley, 1988). An inherent emptiness and superficiality tend to make psychopaths bored and drive them to perform antisocial or impulsive acts in order to “find something fresh and stimulating” (Cleckley, 1988; p.402). Psychopathic individuals are willing to risk a lot (e.g., their employment, or relations to family or friends) for trivial things such as forging checks of small values or stealing minor things. Cleckley did not consider psychopaths as particularly evil or calculating, and he proposed that extreme violence is unusual for a psychopath. Only few of the case examples demonstrated some form of interpersonal aggression (Cleckley, 1988).

### **1.3.3 Divergence between Antisocial Personality Disorder (ASPD) and Psychopathy**

In the second edition of the DSM (i.e., DSM-II; APA, 1968), “antisocial personality” encompassed personality traits (e.g., callousness, selfishness, impulsivity) that were largely based on Cleckley’s conceptualization of psychopathy (Lilienfeld, 1994). Preceding the publication of the DSM-III (APA, 1980), however, a large part of the personality indicators were omitted. The revised diagnosis Antisocial Personality Disorder (ASPD) was characterized by various criteria for observable antisocial and delinquent behaviors (e.g., “theft”, “vandalism”) (Lilienfeld, 1994). This shift was partly due to a general attitude that affective and interpersonal traits could not be scored reliably (Lilienfeld, 1994; Millon, 2012). The revised clinical criteria were also influenced by sociological research conducted at the time, in particular American sociologist Lee Robin’s longitudinal studies (1966/1978) of antisocial and criminal behavior in adolescents (Lilienfeld, 1994). During the same time period, sociologists William and Joan McCord (1964) proposed criteria for psychopathy (e.g., impulsivity, dangerousness, coldness) based on their studies on criminal offenders (Skeem et al., 2011). The current DSM-definition of ASPD is characterized by various indicators of norm-breaking behavior and disregard for others (e.g., “manipulativeness”, “deceitfulness”, “callous lack of concern for others”) (DSM-5, APA, 2013). Given that psychopathy encompasses both personality traits and socially deviant behavior, only a subgroup of individuals with ASPD also have pronounced psychopathic traits (Crego & Widiger, 2014).

## **1.4 PCL-BASED CONCEPTUALIZATION AND OPERATIONALIZATION OF PSYCHOPATHY**

### **1.4.1 The PCL-based assessments**

In the late 1970's, Canadian psychologist Robert Hare developed the 22-item Psychopathy Checklist (PCL; Hare, 1980), with the aim of formulating criteria that could be scored reliably. The PCL originates from a scoring protocol that included some of Cleckley's clinical criteria (but also reflected the conceptualization of other historical scholars) (Hare & Neumann, 2008). Based on empirical investigations in criminal populations, the original PCL item pool was revised and the Psychopathy Checklist-Revised (PCL-R; Hare, 1991; 2003) was developed for use in both research settings and institutional settings. The revision process included omitting items that did not demonstrate strong item-total correlations. Given that most items in the PCL assess deviant features, traits of positive adjustment (e.g., absence of nervousness, immunity to suicide) were excluded in this process (Skeem et al., 2011).

In line with Cleckley, Hare suggests that psychopathic individuals are only able to demonstrate dramatic and short-lived emotions (Hare, 1993). He also describes psychopaths as drifters, who impulsively change plans, and quit jobs and relationships. In contrast to Cleckley, however, Hare considers psychopaths to be goal-driven individuals that do not refrain from using aggression or violence to attain money, sex or power (Hare, 1993).

The PCL-R is the most well validated measure of psychopathy to date (Hare & Neumann, 2008). It is a rating scale, where individuals are scored on 20 items rated between 0 ("clearly not present") to 2 ("clearly present"), based on the degree to which they match a prototypical psychopath (Hare & Neumann, 2008). The assessment includes a face-to-face interview, which is complemented by collateral files (Hare, 2003). The recommended diagnostic threshold for psychopathy is a score of 30 in North America, with a corresponding score of 26 in Sweden (Hare, 2003, p.30). Different factor structures have been proposed for the PCL-R. Table 1 presents an overview of the 2-factor/4-facet model proposed by Hare and colleagues (Neumann, Hare, & Newman, 2007). In this model, 18 of the items are parsed into two factors: Factor 1 (F1; which subsumes the interpersonal and affective Facets 1 and 2) and Factor 2 (F2; which subsumes the lifestyle and antisocial Facets 3 and 4). Cooke and Michie have proposed an alternative three-factor model, based on selected "core items" (e.g., glibness, lack of remorse, irresponsibility), which excludes features reflecting antisocial manifestations (2001).

PCL-R Factor and Facets	Items
<b>FACTOR 1 (F1)</b>	
<b>Facet 1: Interpersonal</b>	Glibness/Superficial charm; Grandiose sense of self-worth; Pathological lying; Conning/Manipulative
<b>Facet 2: Affective</b>	Lack of remorse or guilt: Shallow affect; Callous/Lack of empathy; Failure to accept responsibility for own actions
<b>FACTOR 2 (F2)</b>	
<b>Facet 3: Lifestyle</b>	Need for stimulation/Proneness to boredom; Parasitic lifestyle; Lack of realistic long-term goals; Impulsivity; Irresponsibility
<b>Facet 4: Antisocial</b>	Poor behavioral controls; Early behavioral problems; Juvenile delinquency; Revocation of conditional release; Criminal versatility

**Table 1.** Factors, facets and items in the 2-factor/4-facet model of the Psychopathy Checklist-Revised (PCL-R; Hare, 2003). In this model, the items *Promiscuous sexual behavior* and *Many short-term relationships* do not load on any factor, however contribute to the total score.

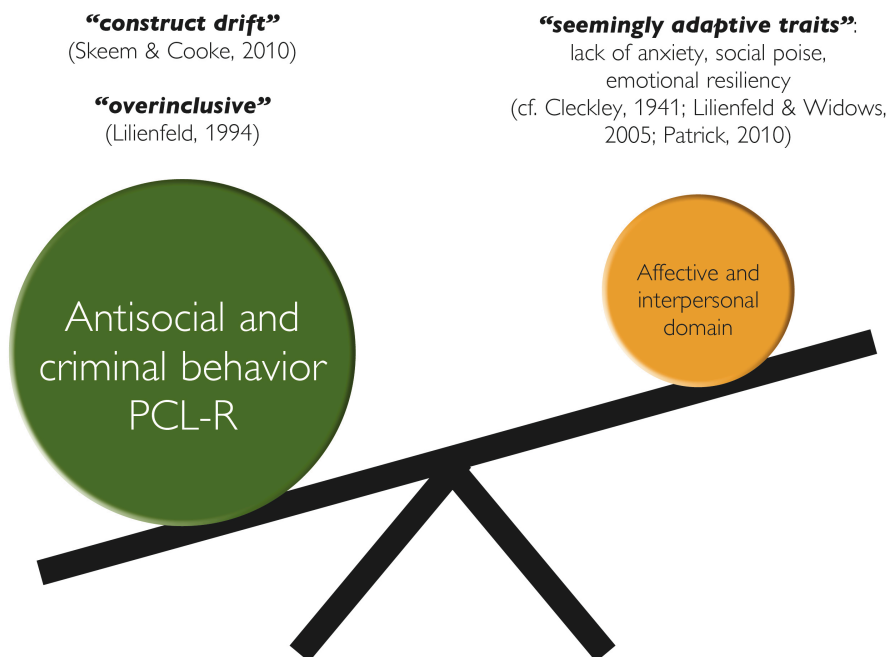
The PCL-based family of instruments encompasses derivative measures, including the Psychopathy Checklist Screening Version (PCL:SV; Hart, Cox, & Hare, 1995) and the Psychopathy Checklist Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003). The PCL:SV is a 12-item interview measure, developed as a screening instrument for non-forensic settings including civil psychiatric and community settings (Hare, 2003). It is highly similar to the PCL-R, both conceptually and empirically (weighted  $r = 0.8$ ; Hart et al., 1995). The PCL:YV is a 20-item rating scale that was developed for use with adolescents (Forth et al., 2003).

The PCL-R was developed to capture psychopathy as a “unitary concept” (Hare (1980); Patrick, 2006). Both factors emphasize deviant behavior and maladjustment (i.e., several items in F1 are scored with reference to criminal behavior, which is directly captured in F2-items), and they tend to correlate to a moderate degree. Despite the relatively high degree of overlap, the two factors are commonly associated with external correlates in opposing directions. F1 tends to be positively associated with low empathy, narcissism (Hare, 2003), and high social dominance (Verona, Patrick, & Joiner, 2001), but negatively related to distress and anxiety (Hicks & Patrick, 2006). F2, on the other hand, tends to be positively associated with a range of deviant outcomes including aggression, impulsivity, sensation-seeking and drug dependence (Hare, 2003; Patrick, Hicks, Krueger & Lang, 2005).

### 1.4.2 Concerns about the PCL-R

The PCL-R has contributed to a large body of research on antisocial and criminal aspects of psychopathy (Kennealy, Skeem, Walters, & Camp, 2010), and a common understanding of the psychopathy construct (Hare & Neumann, 2010). During recent years, however, there has been mounting criticism towards the PCL-based conceptualization and operationalization of psychopathy (Skeem et al., 2011).

Some scholars have argued that the field's focus on the PCL-R operationalization of psychopathy has caused a "construct drift" from early theories including Cleckley's conceptualization, that placed less focus on criminal behavior and encompassed some "seemingly adaptive traits" (Skeem & Cooke, 2010b, but see Hare & Neumann, 2008 for the position that it rather concerns a "construct shift"). Moreover, it has been argued that the behavior based conceptualization of psychopathy is overinclusive in a sense that it encompasses deviant and criminal behaviors that may be relatively nonspecific to psychopathy (Lilienfeld, 1994) but also underinclusive by failing to incorporate some features that are considered essential to psychopathy (e.g., lack of anxiety) (Skeem & Cooke, 2010b). Given the dominance of the PCL-R during the past decades, there is considerably less knowledge about affective and interpersonal features of psychopathy unconfounded by criminality (Skeem et al., 2011). Figure 2 illustrates this lack of balance in the current state of knowledge.



**Figure 2.** Illustration of the lack of balance in the current state of knowledge. To date, there has been appreciably more research on the antisocial and criminal aspects of psychopathy, compared to affective and interpersonal psychopathic traits (Skeem et al., 2011).



A large body of research has demonstrated that PCL-based psychopathy is a robust predictor of criminal, antisocial and violent behavior in both criminal and forensic samples (cf. Douglas, Vincent, & Edens, In Patrick, 2006). Even though the PCL-R was not designed to assess risk (i.e., regarding relapse into criminal behavior), the PCL-based measures are widely used as risk assessments tools to inform legal decisions (e.g., sentencing, parole and probation) (Singh, Grann, & Fazel, 2011). Recent meta-analytic work has demonstrated a relatively modest predictive validity of the PCL-R, however (Singh et al., 2011; Yang, Wong, & Coid, 2010; Walters, 2003). Moreover, several meta-analyses have demonstrated that the association between psychopathy and violence is largely driven by the antisocial Facet 4, with the affective and interpersonal domains demonstrating little incremental validity (Camp, Skeem, Barchard, Lilienfeld & Poythress, 2013; Kennealy et al., 2010; Olver & Wong, 2015; Walters et al., 2008). This is potentially problematic, given that it commonly is the total PCL-R score that is used in legal statements about violence risk (DeMatteo et al., 2014).

Moreover, critics have argued that studying associations between PCL-based psychopathy and criminal behavior might involve a certain degree of criterion contamination, given that criminal behavior is encompassed in both the predictor and the outcome measure (Skeem & Mulvey, 2001). It has been proposed that more research is needed that (a) distinguishes broad antisocial behavior from criminal behavior in relation to psychopathy (Skeem & Cooke, 2010b), and (b) further investigates the association between psychopathy per se (beyond its antisocial domain) and violence (Skeem et al., 2011).

Some points have been raised specifically concerning the PCL-R operationalization of psychopathy (Skeem & Cooke, 2010a). The PCL-R assessment is time-consuming and requires access to collateral records. The individual items have not been appreciably revised since formulated in the 1970's (Skeem & Cooke, 2010a). Moreover, even though the PCL-R can be used to assess dimensional psychopathic traits, in clinical and legal practice it is commonly used to provide a dichotomous statement (i.e., that someone is "a psychopath" or "not a psychopath") based on recommended diagnostic thresholds (DeMatteo et al., 2014). This is problematic from an assessment point of view, given that aggregate summary scores can cover associations between subdimensions and outcome measures (Derefinko, 2014). A summary score also might fail to provide nuanced information about individuals' symptom severity, current violence risk or treatment needs. Moreover, the PCL-R assessment fails to capture potentially dynamic aspects of fluctuations in personality pathology, given that the rating is conducted based on a lifetime perspective (Cooke et al., 2012).

### **1.4.3 Knowledge gap: field reliability of the PCL-R**

Inter-rater reliability refers to the degree to which different evaluators provide consistent scores, when assessing the same individual (for inter-rater reliability, see 3.3). Several studies have reported an overall high inter-rater reliability for the PCL-R, when assessed by trained raters (Hare, 2003; Kennealy, Hicks, & Patrick, 2007; Poythress et al., 2010). These studies

have been conducted in regulated research contexts, however. Degree of reliability in one type of setting cannot simply be “transferred” to another setting (Newton & Shaw, 2013). During recent years, researchers have increasingly started investigating *field reliability*, which refers to the degree to which PCL-R can be reliably scored in applied settings, where the assessments are conducted to inform legal decisions. There are important differences between research contexts and applied settings, which might affect the overall generalizability between settings (Edens, Cox, Smith, DeMatteo, & Sörman, 2014). For example, in research contexts, the evaluators (usually graduate students or research assistants) have commonly received extensive PCL-R training and also undergone formal reliability checks, which overall should lead to a higher degree of scoring consistency (Murrie, Boccaccini, Johnson, & Janke, 2008).

International studies on PCL-R field reliability have demonstrated lower reliability, compared to that reported from studies conducted in research contexts (Edens, Boccaccini, & Johnson, 2010; Edens et al., 2014; Miller, Kimonis, Otto, Kline, & Wasserman, 2012; Murrie et al., 2008). These studies have been conducted in adversarial legal systems, and a majority have concerned the legal evaluation of sexually violent predators (SVPs) in specific judicial settings (Miller et al., 2012; Murrie et al., 2008). Research is lacking on the field reliability of the PCL-R in inquisitorial legal systems. Against this background, the aim of **Study I** was to investigate reliability of two PCL-R ratings in a group of life-sentenced offenders who had applied repeatedly to have their sentences commuted. Teams of experienced clinicians at the National Board of Forensic Medicine (an independent, governmental organization) conducted the risk evaluations, which included PCL-R assessments. The number of individuals serving life sentences in Sweden has increased markedly since the 1990’s (Haggård, 2010; Sturup, Karlberg, Fredriksson, Lihoff, & Kristiansson, 2015). This further strengthens the need to examine PCL-R field reliability specifically involving this group.

## **1.5 DIMENSIONAL PSYCHOPATHIC TRAITS AND BIOLOGICAL ASPECTS OF PSYCHOPATHY**

*To see them properly in such a light, we must follow them from the wards out into the marketplace, the saloon, and the brothel, to the fireside, to church, and to their work* (Cleckley, 1988, p.23)

### **1.5.1 Research on psychopathic traits in the community**

There is increasing agreement that the psychopathy construct is dimensional rather than “a natural category” (Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Knight, & Hare, 2007; Walters, Duncan, & Mitchell-Perez, 2007). This implies that psychopathic traits exist along a continuum, in contrast to the standpoint that psychopaths are qualitatively distinct from other individuals (Harris, Rice, & Quinsey, 1994). In line with this dimensional view, researchers have increasingly moved toward investigating associations between psychopathic traits and “normal range” personality traits from existing personality models (Miller, Lynam Widiger, & Leukfeld, 2001; Benning, Patrick, Blonigen, Hicks, & Iacono, 2005). These studies have demonstrated that psychopathic traits are associated with elevated disinhibition and antagonism, with varying coverage of neuroticism and extraversion (Miller & Lynam, 2014). Investigating psychopathic traits in relation to “normal range” personality traits has important implications: it opens up the possibility to use large existing datasets, and it could help clarify the nature of different domains of psychopathy (Lilienfeld et al., 2014a).

The dimensional viewpoint bolsters the need to study psychopathic traits outside of criminal settings (Lilienfeld et al., 2014a; Miller & Lynam, 2014). Research is lacking, however, on psychopathic traits in representative community samples (Gao & Raine, 2010). A few studies have investigated the prevalence of PCL-based psychopathic traits in community groups, and demonstrated an estimated prevalence of 0.6% to 1.2%, with most individuals exhibiting few or no psychopathic traits (Coid, Yang, Ullrich, Roberts, & Hare, 2009; Neumann, & Hare, 2008). In these studies, a high degree of psychopathic traits was associated with an elevated level of violent incidents and victim injury (Coid & Yang, 2011).

A clear knowledge gap in the field is the investigation of associations between psychopathic traits and environmental factors including neighborhood factors (Viding, McCrory, & Seara-Cardoso, 2014). As a forerunner to this dissertation project, our research group conducted a pilot study, which is part of the umbrella project PSYCOM (Psychopathic traits in community groups) (Sörman et al., 2015). This project sought to investigate (a) prevalence of affective psychopathic traits (e.g., fearlessness, stress immunity, coldheartedness), among adults residing in neighborhoods with varying socioeconomic status (SES), and (b) associations between these traits and different risk behaviors (i.e., substance abuse, violent behavior). In the pilot study, a web-survey was used which encompassed three subscales from the self-report measure PPI-R (described in 1.6.2) to assess affective psychopathic traits.

It also included questions on demographics, neighborhood factors (i.e., perceptions of safety, collective efficacy), and risk behaviors. Despite the markedly low response rate which limits the findings (i.e., 21.4%, with a total of 62 participants), it was interesting to note that degree of coldheartedness was higher among participants residing in high SES-neighborhoods (Sörman et al., 2015). In a recently published American study, a web-survey was used to investigate associations between affective-and interpersonal psychopathic traits and indicators of everyday life (e.g., leadership position, political orientation, place of residence, political orientation) in a large group ( $N = 3388$ ) of community residents (Lilienfeld, Latzman, Watts, Smith, & Dutton, 2014b). The results demonstrated that degree of fearlessness was associated with a higher probability of holding leadership positions (Lilienfeld et al., 2014b).

There is increased interest for what is denoted “successful” or “subclinical” psychopathy (Babiak, Neumann, & Hare, 2010; Skeem et al., 2011). The idea that a high degree of psychopathic traits can be advantageous in some settings is in line with Cleckley’s descriptions of individuals with “incomplete manifestations of the disorder” who functioned in society as scientists, businessmen, or psychiatrists (Cleckley, 1988). It also echoes David Lykken’s statement that the “hero and psychopath are twigs on the same genetic branch” (1995, p.118). This statement proposes that underlying fearlessness can lead to “heroic”, or deviant behavior, depending on environmental factors (Skeem et al., 2011). A recent study that investigated retrospectively rated psychopathic traits in 42 U.S. presidents demonstrated that elevated fearlessness was associated with indicators of high achievement and management skills (Lilienfeld et al., 2012b). Another study that surveyed 203 individuals in a U.S. corporate setting, demonstrated that total PCL-R scores were associated with superior communication skills and strategic thinking, as well as a problematic management style (Babiak et al., 2010). Increased research on “successful psychopathy” could provide unique information about “buffering” factors that might prevent the development of aversive behaviors. This will be informative for the design of prevention and treatment strategies (Skeem et al., 2011).

The growing interest in developmental aspects of psychopathic traits is also reflected by the rapidly expanding research on psychopathic traits among adolescents and youths (cf. Frick, Ray, Thornton, & Kahn, 2014). Collectively, these studies have demonstrated that youth with conduct disorder (CD; a behavioral disorder characterized by norm violations, aggression, and deceitfulness), that also present with “callous-unemotional” (CU) traits (e.g., lack of empathy and guilt, shallow emotions), represents a distinct subgroup with markedly severe antisocial behavior (Andershed, Kerr, Stattin, & Levander, 2002; Enebrink, Andershed, & Långström, 2005; Frick et al., 2014).

### 1.5.2 Evolutionary theories of psychopathy

Investigating “successful psychopathy” cast light on evolutionary aspects of psychopathic traits. Several scholars have argued that psychopathy might represent a life strategy, or alternative emotional processing, rather than impairment per se (Glenn, Kurzban, & Raine, 2011a; Lalumière, Harris, & Rice, 2001; Marcus, Sanford, Edens, Knight, & Walters, 2011). These theories essentially argue that psychopathic traits can lead to adaptive phenotypes (e.g., behavioral expressions) depending on the environment and social context (Glenn et al., 2011a). According to the “cheater” hypothesis, a small number of individuals in a population can express exploitative and violent behaviors, as long as the majority foster cooperative and altruistic behavior (Book & Quinsey, 2004; Glenn et al., 2011a; Raine, 2013). According to this theory, certain psychopathic traits (e.g., fearlessness, verbal facility) can be used to dupe and manipulate prospective partners to maximize offspring with minimal parental investment (Mealey, 1995; Raine, 2013). In a similar vein, a recent longitudinal study using aggregate data from several population registries in Sweden, demonstrated that being charged with violent crimes was associated with having several indicators of reproductive success (e.g., greater number of sex partners and a higher number of offspring) (Yao, Långström, Temrin, & Walum, 2014).

Another perspective, the “spandrel” hypothesis, proposes that psychopathy might arise as a byproduct of markedly elevated levels of certain traits (i.e., dominant behavior) that in excess become maladaptive (Leedom, & Almas, 2012). This is in line with a theory that the extent to which fearlessness is adaptive versus maladaptive is curvilinear, with these traits being adaptive up to a certain “tipping point” (Blonigen, 2013).

### 1.5.3 Lack of basic signaling – or deficient coupling?

*“No vivid fleurs du mal will be culled from this garden, for the garden is barren”*  
(Cleckley, 1988, p.312)

There is broad agreement that psychopathy is associated with an emotion deficit, including reduced empathy and guilt (cf. Blair, 2008; 2013; Brook & Kosson, 2013; Viding et al., 2014). The *nature of this deficit* remains poorly understood, however (Blair, 2013; Brook, Brieman, & Kosson, 2013).

A predominant viewpoint is that psychopathy is associated with a fundamental fear deficit, involving impaired processing of punishment cues (Blair & Mitchell, 2009; Viding et al., 2014). The “low fear hypothesis” was proposed already in 1957 by David Lykken, based on his laboratory studies that demonstrated low fear arousal and impaired anxiety in psychopaths (Fowles & Dindo, in Patrick, 2006). Accumulating research on adolescents has demonstrated an association between elevated CU-traits and poor recognition of fearful faces and distress cues in other individuals (Frick & Viding, 2009). Deficient recognition of fearful faces is also the most consistent finding in research on adults with psychopathic traits (Brook et al., 2013).

Impaired responsiveness to distress in others is proposed to interfere with the development of empathy and prosocial behavior (Frick & Viding, 2009). Psychopathy is commonly associated with deficient emotional empathy, but intact cognitive empathy (reflecting the capacity to understand other individuals' beliefs and intentions). During recent years however, research has indicated that psychopathy might also be associated with impaired cognitive empathy (Brook & Kosson, 2013).

The attention modulation hypothesis proposes an alternative perspective. According to this theory, the fear-deficit in psychopathy stems particularly from an attention related dysfunction, which interferes with processing peripheral fear information (Newman, Curtin, Bertsch, & Baskin-Sommers, 2010).

Theories about the emotion processing in psychopathy should be placed within a larger theoretical framework. Consensus is currently lacking on what an emotion "is" (Le Doux, 2012). Given this conceptual controversy, new theories are emerging that propose a more clear distinction between unconscious basic signaling and conscious emotional experiences (Condon & Feldman Barrett, 2013; Le Doux, 2012; 2014). More specifically, emotion processing is parsed into two constituents: a nonconscious sensory-motor system of "survival circuits" (involved in basic mechanisms such as defense, thermoregulation, reproduction), and a conscious response including emotion and motivation (Le Doux, 2012; 2014).

In line with these emerging theories, an overarching question becomes: does psychopathy involve lack of basic signaling (at the circuit level) or a deficient coupling system (i.e., deficient processing of basic signals) – potentially due to impaired attention processing? With advances in technology, future research will be able to investigate several levels of emotion processing, involving both physiological changes and neural activity across several brain regions (Condon & Feldman Barrett, 2013; Le Doux, 2012). Disentangling the constituents of emotion processing will inform our understanding of the causes of the emotion deficit in psychopathy (Viding et al., 2014). An improved understanding of core emotional processes of psychopathy will also be informative to the treatment of this disorder (Brook et al., 2013).

## **1.6 ALTERNATIVE ASSESSMENTS AND MODELS OF PSYCHOPATHY INVESTIGATED IN THIS PROJECT**

### **1.6.1 Rationale for alternative assessments and models**

In contrast to the PCL-R and its derivatives, alternative measures are suited for assessing dimensional psychopathic traits in both criminal and non-criminal groups. Moreover, they encompass features that have been considered central to psychopathy in historical definitions (e.g., fearlessness, lack of anxiety) but are not well represented in the PCL-R. They also place a larger focus on individual domains of psychopathy, with less emphasis on a total cut-off score. Focusing more on individual domains of psychopathy, instead of viewing psychopathy as a unitary construct, can advance our understanding of psychopathic subgroups and different etiological mechanisms (Lilienfeld et al., 2014a; Skeem et al., 2011).

Several alternative psychopathy assessments are self-report based. Assessing psychopathic traits with self-report measures is potentially problematic, owing not least to the fact that psychopaths tend to be deceptive and have poor insight into their own problems. In addition, it is problematic to rely on an individual's report of an emotional response (e.g., empathy, guilt) that he/she might never have experienced (Lilienfeld & Fowler, in Patrick, 2006). Self-report measures have several advantages, however: they are easy to administer, and less labor-intensive than a clinical interview. Moreover, using them circumvents the potential problem of poor inter-rater reliability (Lilienfeld & Fowler, in Patrick 2006).

### **1.6.2 The Psychopathic Personality Inventory-Revised (PPI-R)**

The 154-item PPI-R (Lilienfeld & Widows, 2005) is the most widely researched self-report measure of psychopathic traits in adults (Derefinko, 2014). Prior to its development, most self-report measures of psychopathy mainly captured antisocial and deviant aspects (Lilienfeld & Widows, 2005). The original version of the instrument, the Psychopathic Personality Inventory (PPI; Lilienfeld, & Andrews, 1996), was developed with undergraduate students as test subjects. It aimed to reflect a broad range of affective and interpersonal psychopathic traits, including "positive adjustment features" (e.g., fearlessness) in line with Cleckley's conceptualization (Lilienfeld & Widows, 2005).

The PPI-R is suited for use in both criminal and noncriminal groups (Lilienfeld & Widows, 2005). It was developed to capture eight lower-order content scales, in combination with a total score (Lilienfeld & Widows, 2005). Some authors have demonstrated a two-factor structure for the PPI-R encompassing: the factor Fearless Dominance (FD, also referred to as PPI-I), including the subscales Social Influence (SOI), Fearlessness (F) and Stress Immunity (STI); and the factor Self-Centered Impulsivity (SCI, also referred to as PPI-II), including the subscales Machiavellian Egocentricity (ME), Rebellious Nonconformity (RN), Blame Externalization (BE) and Carefree Nonplanfulness (CN) (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). The eighth scale Coldheartedness (CH) tends to be discarded from

analyses, given that it does not correlate highly with the higher order factors. Several subsequent studies involving both community residents and criminal samples, have failed to demonstrate this 2-factor structure (Neumann, Malterer, & Newman, 2008; Uzieblo, Verschuere, Van den Bussche, & Crombez, 2010).

The PPI-R was developed with the underlying theory that psychopathy reflects a “compound trait”, where largely independent traits combine to produce psychopathy (Lilienfeld et al., 2014a). This theoretical standpoint is bolstered by the “dual process-model”, which proposes that FD and SCI might be underpinned by distinct etiological processes (i.e., trait fearlessness and externalizing vulnerability, respectively), with different neurobiological correlates (Fowles & Dindo, in Patrick, 2006). In line with this theory, accumulated research has demonstrated that the PPI’s higher order factors are associated with external correlates in opposing directions (Benning et al., 2003; Marcus, Fulton, & Edens, 2013). Elevated levels on FD have been associated with positive social adjustment (e.g., social skills, extraversion, stress resiliency), educational level, socioeconomic status and cognitive empathy, but also maladjustment and self-reported narcissism (Benning et al., 2003; Uzieblo et al., 2010). SCI, on the other hand, has been negatively associated with educational achievement, income and verbal intelligence (Benning et al., 2003), and positively associated with behavioral deviance (e.g., violence, aggression, impulsivity, anger) in criminal and psychiatric groups (Edens & McDermott, 2010; Edens, Poythress, Lilienfeld, & Patrick, 2008). Correlates of the CH scale have included low cognitive and affective empathy (Uzieblo et al., 2010).

Regarding external validity, several studies have demonstrated that PPI-R assessed psychopathy significantly predicts various forms of externalizing deviance, including institutional misconduct and violence (Camp et al., 2013; Edens & Mc Dermott, 2010; Edens et al., 2008). This association has mainly been driven by SCI (Edens et al., 2008; Edens & Mc Dermott, 2010). Some studies, however, have demonstrated particular associations between FD and various deviant outcomes (e.g., antisocial behavior, narcissism, proactive aggression) (Lilienfeld et al., 2012a). Moreover, even though findings are mixed regarding potential interactive effects, one study has demonstrated that a statistical interaction between FD and SCI improved prediction of predatory aggression in a group of forensic psychiatric inpatients (Smith, Edens, & McDermott, 2013).

To date, the PPI-R has mainly been used in American student or correctional samples, and some European settings (Lopéz, Poy, Patrick, & Moltó, 2013; Uzieblo et al., 2010). We are the first research group to translate the PPI-R and use it in a Swedish context. Against this background, **Study II** aimed to investigate the reliability and validity of the Swedish translation of the PPI-R in a non-criminal sample recruited from campus areas. Given that international research has failed to confirm the proposed two-factor structure, we also aimed to explore the factor structure of the Swedish translation of the PPI-R.

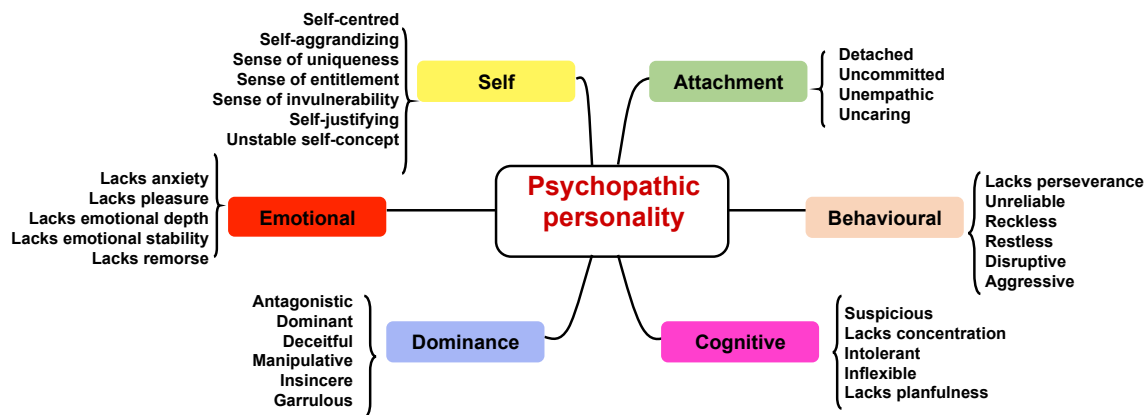


### 1.6.3 The Comprehensive Assessment of Psychopathic Personality (CAPP)

The CAPP (Cooke et al., 2012) was developed, originally in 2004, as a “concept map” of personality pathology. It aims to include the entire range of personality symptoms in psychopathy, with less focus on antisocial and criminal behavior (Cooke et al., 2012). It also aims to detect potential fluctuations in personality pathology, which makes it well suited to evaluate effects of interventions and treatment strategies (Cooke et al., 2012).

The CAPP model was developed in three consecutive steps (Cooke et al., 2012). In the first step, the authors reviewed historical (e.g., Cleckley, Karpman, Mc Cords, Lykken) and contemporary definitions of psychopathy or ASPD. This resulted in an extensive list of clinical symptoms, which was reviewed by experts in the field. Based on this review, the original item pool was revised (Cooke et al., 2012). The CAPP symptoms were developed using a lexical approach, which assumes that personality indicators are found in everyday language (Saucier, Goldberg & Institute, 2001). Given that the symptoms are defined in natural language (not clinical jargon), the model is proposed to be suitable for cross-cultural use (Cooke et al., 2012).

The CAPP model encompasses 33 symptoms, each complemented with three adjectival descriptors (e.g., Unempathic: uncompassionate, cruel, callous). The symptoms are conceptualized over six functional domains (see Figure 3): *Attachment* (reflecting difficulties in interpersonal affiliation); *Behavioral* (reflecting problems with organization and goal directed activities); *Cognitive* (reflecting problems with mental flexibility and attention allocation); *Dominance* (reflecting interpersonal difficulties and excessive status seeking); *Emotional* (reflecting problems with mood regulation); and *Self* (reflecting problems with identity and self-concept) (Cooke et al., 2012).



**Figure 3.** The Comprehensive Assessment of Psychopathic Personality (Cooke et al., 2012).

Different assessment instruments have been developed to operationalize the CAPP model, including the interview-based Institutional Rating Scale (CAPP-IRS) and the Staff Rating Scale (CAPP-SRS). The CAPP-IRS assesses personality pathology and psychosocial adjustment particularly based on the past six months. The CAPP-SRS assesses symptom severity and functional impairment as rated by practitioners (e.g., correctional staff, nurses) that have regular contact with the client (Cooke et al., 2012).

To date, international research has mainly focused on evaluating the content validity of the CAPP. Content validity reflects the degree to which the symptoms or descriptors in a model reflect the theoretical construct (Blashfield & Livesley, 1991). These studies have used prototype methodology (for a description of this method, see 3.6) to investigate to what degree expert raters and laypeople perceive the CAPP symptoms and domains to be typical of psychopathy (Clercx, 2013; Flórez et al., 2014; Hoff, Rypdal, Mykletun, & Cooke, 2012; Kreis, Cooke, Michie, Hoff, & Logan, 2012; Smith, Edens, Clark, & Rulseh, 2014). Across studies, the majority of the CAPP symptoms have been perceived as typical of psychopathy, with the domains *Dominance*, *Self*, and *Attachment* receiving the highest ratings. Some studies have also investigated the factor structure of the CAPP with confirmatory factor analysis (CFA). The results have demonstrated that two domains (i.e., *Attachment*, *Behavioral*) are unidimensional however the remaining domains have received a good fit

only after certain symptoms have been removed (Hoff et al., 2012; Kreis et al., 2012). Furthermore, one study has specifically investigated predictive validity of the CAPP in a Danish forensic psychiatric setting (Pedersen, Kunz, Elsass, & Rasmussen, 2010). Predictive validity refers to the degree to which the content of a measure can be used to predict outcome variables in the future (for a general description of validity, see 3.4). The results demonstrated that the CAPP was able to predict violent recidivism to a similar degree as the PCL:SV. The results also demonstrated varying inter-rater reliability of the CAPP domains (Pedersen et al., 2010).

CAPP has currently been translated into 16 languages, including European and non-European languages (e.g., Thai, Persian) (Cooke et al., 2012). To date, the CAPP has not been validated in a Swedish context. The aim of **Study III** was to extend the international research on the content validity of the CAPP and to investigate perceptions of the model among individuals working in the forensic mental health system in Sweden. The study also aimed to investigate general attitudes and perceptions of psychopathy (e.g., criminality, moral judgments) among the participants. To date, professionals' perceptions of psychopathy has remained an underresearched area. Perceptions about psychopathy (e.g., regarding dangerousness and treatment adherence) can influence how individuals with psychopathy are treated in the criminal justice system and cause general stigmatization.

#### **1.6.4 The Triarchic model of psychopathy**

In **Study IV**, we investigated content validity of the *Boldness* construct as construed in the Triarchic model of psychopathy (Patrick et al., 2009). The Triarchic model of psychopathy was developed to clarify and integrate different theories about psychopathy and provide a platform for neurobiological research on psychopathic traits (Patrick et al., 2009). The model conceptualizes psychopathy as encompassing three phenotypic constructs: *Disinhibition* (reflecting problems of impulse control and affect regulation), *Meanness* (reflecting aggressive resource seeking, callousness and lack of empathy), and *Boldness* (reflecting social dominance, venturesomeness and emotional stability). In this model, psychopathy encompasses elevated *Disinhibition*, in combination with elevated *Meanness* or *Boldness* (Patrick et al., 2009).

In contrast to the PCL-R factors, the triarchic constructs are distinct and only partially overlapping. This is presumed to reflect different etiological pathways: *Disinhibition* is proposed to reflect frontal brain based impulse problems, whereas both *Boldness* and *Meanness* are proposed to reflect an underlying amygdala-based fearless disposition (Patrick et al., 2009). Even though the triarchic constructs are not tied to a particular type of operationalization, most studies to date have investigated the constructs using the 58-item self-report inventory Triarchic Psychopathy Measure (TriPM; Patrick, 2010). Research on the construct validity of the TriPM in various settings (e.g., offenders, community participants, undergraduate students) has demonstrated high degree of convergence between TriPM and

other commonly used psychopathy inventories, in particular the PPI/R (Drislane, Patrick, & Arsal, 2014; Sellbom & Phillips, 2013; Stanley, Wygant, & Sellbom, 2013). Studies have also demonstrated that all three triarchic constructs are represented in the PCL-R total and factor scores (Drislane et al., 2014; Venables et al., 2014). These studies have demonstrated that most psychopathy measures index *Disinhibition* and *Meanness* to a relatively high degree; but differ in the coverage of *Boldness* (Drislane et al., 2014).

### 1.6.5 Boldness

*Boldness* captures Cleckley's conception of the "mask" of sanity and social poise in psychopathy (Patrick & Drislane, 2014). The TriPM includes a 19-item subscale to assess *Boldness*, which was developed partly based on the conceptualization of the Fearless Dominance factor (FD) in the PPI-R (Patrick, 2010). The TriPM-*Boldness* scale encompasses three content domains: interpersonal behavior (e.g., dominance, persuasiveness), emotional experience (e.g., resiliency, optimism), and venturesomeness (e.g., courage, tolerance for uncertainty) (Patrick, 2010).

Despite the emphasis on "seemingly adaptive" traits in several historical conceptions, the relevance of PPI-FD/*Boldness* to the psychopathy construct has been intensively debated in recent literature (Lilienfeld et al., 2012a; Miller & Lynam, 2012). Based on meta-analytic work, critics argue that (a) PPI-FD/*Boldness* fails to demonstrate clear overlap with other psychopathy measures (including PCL-Factor 1), as well as with antisocial and deviant behavior, and (b) traits of good adjustments are unessential to psychopathy, given that a personality disorder should specifically encompass aspects of maladjustment (Miller & Lynam, 2012). Lilienfeld and co-authors, however, argue that PPI-FD has demonstrated satisfactory convergence with well-validated psychopathy measures and behavioral deviance, and that adaptive functioning is merely *one* essential aspect of the psychopathy construct (2012a).

Recent studies that have investigated the construct validity of the TriPM-*Boldness* scale have demonstrated associations with both positive adaptive traits (e.g., high extraversion, low neuroticism, stress-immunity), and maladaptive tendencies including grandiosity and manipulateness (Blagov, Patrick, Oost, Goodman, & Pugh, 2015; Drislane et al., 2014). Several studies have demonstrated associations between self-reported boldness and narcissism, in both inmate and undergraduate samples (Crego & Widiger, 2014; Sellbom & Phillips, 2013). In a sample of male offenders, scores on TriPM *Boldness* contributed incrementally to the prediction of PCL-R scores (total, and Factor 1), largely owing to its association with the PCL-R' interpersonal facet (Venables et al., 2014).

To date, the validity of *Boldness* has mainly been investigated with self-report measures. Against this background, **Study IV** aimed to investigate to what degree professional and layperson raters perceive *Boldness* to be typical of psychopathy. In this study, we also

investigated associations between *Boldness* items and CAPP domains, as well as attitudinal statements of psychopathy (i.e., quasi-adaptive features, criminal aspects, moral judgments).

## 2 AIMS

The overall objective of this dissertation project was to investigate reliability and validity of traditional and alternative assessments and models of psychopathy, primarily in a Swedish context. Specifically, the project aimed to investigate:

- *Field reliability* of the Psychopathy Checklist-Revised (PCL-R; Hare 1991, 2003) in a group of life sentenced offenders (**Study I**)
- Psychometric properties of the Swedish translation of the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) in a non-criminal sample recruited from campus areas (**Study II**)
- Prototypicality ratings of a Swedish translation of the Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke et al., 2012) and global perceptions about psychopathy, among Swedish forensic practitioners (**Study III**)
- Prototypicality ratings of the *Boldness* construct, as conceptualized in the Triarchic model of psychopathy (Patrick et al., 2009), among professionals (i.e., Swedish forensic practitioners and probation officers from the U.S.) and community members from the U.S. summoned for jury duty (**Study IV**)

### 3 MATERIAL AND METHODS

#### 3.1 PARTICIPANTS

This dissertation project encompasses data from five different samples, as illustrated in Table 2.

Study	Participants	N	Geographical area
I	Life-sentenced offenders	27 (Male $n = 26$ ; 96.3%)	Sweden
II	Community participants	227 (Male $n = 184$ ; 81.1%)	Stockholm
III	Forensic practitioners <sup>1</sup>	90 (Male $n = 43$ ; 47.8%)	Stockholm and Gothenburg
IV	Forensic practitioners <sup>2</sup>	90 (Male $n = 43$ ; 47.8%)	Stockholm and Gothenburg
	Jury pool members	404 (Male <sup>3</sup> $n = 43$ ; 47.8%)	Metropolitan county in the Southwestern United States
	Probation officers	41 (Male <sup>4</sup> $n = 13$ ; 31.7%)	Metropolitan county in the Southwestern United States

**Table 2.** An overview of the participants in this dissertation project. <sup>1</sup>In this study, three occupational subgroups were investigated: forensic evaluators, forensic ward staff and clinical ward staff. <sup>2</sup>Same participants as in Study III. <sup>3</sup>Information about gender is missing for one participant. <sup>4</sup>Information about gender is missing for two participants.

Participants in **Study I** were life-sentenced offenders who had applied to have their sentence commuted. In Sweden, imprisonment for life is the most severe sentence an offender can receive. Crimes for which a person can receive this sentence include homicide; espionage, terrorist acts and war-related crimes. In Study I, all participants were sentenced with homicide. Participants in **Study II** were healthy, non-criminal individuals recruited through advertisements at local campus areas and a website where studies seeking participants are listed. The majority of participants were university students, or degree holders. Participants in **Study III** were forensic practitioners (i.e., forensic evaluators, forensic ward staff and clinical ward staff), recruited from two forensic assessment units in Stockholm and Gothenburg

(operated by the National Board of Forensic Medicine), and from forensic psychiatric treatment wards in Stockholm (operated by Stockholm County Council). **Study IV** encompassed three subgroups: forensic practitioners (from Sweden; the same participants as in Study III), probation officers (from the U.S) and laypeople summoned for jury duty (from the U.S). In the U.S., probation officers supervise convicted offenders in the community, by assisting in the reintegration process and monitoring whether the offenders comply with the conditions of their probation such as avoiding use of drugs, and maintaining employment. Probation officers commonly have relevant academic training, usually at the bachelor level (i.e., four year degree after high school). Jury members are selected from a pool of community citizens randomly recruited from a particular judicial district. In general, selected jury members should be representative of the community population

## **3.2 PERSONALITY ASSESSMENTS**

### **3.2.1 Interview-based assessments (Study I-II)**

**Psychopathy Checklist-Revised (PCL-R; Hare 2003):** The PCL-R is a 20-item rating scale of psychopathic traits. The rating is based on a semi-structured interview and complementary file information. Items are scored using a 3-point scale (*0 = clearly not present, 1 = maybe present, 2 = clearly present*). Table 2 presents an overview of the 2-factor/4-facet model of the PCL-R.

**Psychopathy Checklist: Screening Version (PCL:SV; Hart et al., 1995).** The PCL:SV is a 12-item derivative measure of the PCL-R, which is suited for use with community participants. The rating is based on a semi-structured interview. Items are scored using a 3-point scale (*0 = clearly not present, 1 = maybe present, 2 = clearly present*). The instrument encompasses two factors: Part 1 (reflecting affective and interpersonal features) and Part 2 (reflecting social deviance).

### **3.2.2 Self-report assessments (Study II)**

**Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005).** The PPI-R is a 154-item self-report measure of psychopathic traits. It yields a total score, and scores on eight content scales. The measure also includes three validity scales: Deviant Responding (measuring aberrant responding/malingering), Virtuous Responding (measuring socially desirable responding), and Inconsistent Responding (measuring careless responding). Questions are answered using a 4-point Likert type scale (from *1 = false* to *4 = true*).

**Interpersonal Reactivity Index (IRI; Davis, 1980).** The IRI is a 28-item self-report measure of different aspects of empathy. It encompasses four scales: Empathic Concern (EC), Perspective Taking (PT), Personal Distress (PD) and Fantasy (FS). Questions are answered using a 5-point Likert type scale (from *0 = does not describe me well* to *4 = describes me very well*).



**State-Trait Anxiety Inventory (STAI;** Spielberger, 1983). The STAI is a 40-item self-report measure of trait anxiety. It consists of two scales: the State Anxiety Scale (STAI-S), measuring anxiety at the time of testing, and the Trait Anxiety Scale (STAI-T), measuring anxiety-related manifestations over extended periods. In Study II, the STAI-T was used. Items are scored using a 5-point Likert type scale (from 0 = *almost never* to 4 = *almost always*).

**Toronto Alexithymia Scale (TAS-20;** Bagby, Parker, & Taylor, 1994a,b). The TAS-20 is a 20-item self-report measure of alexithymia. It encompasses three factors: Difficulty Identifying Feelings (DIF); Difficulty Describing Feelings (DDF) and Externally Oriented Thinking (EOT). Items are scored using a 5-point Likert type scale (from 1 = *strongly disagree* to 5 = *strongly agree*).

### 3.2.3 Theoretical models and constructs (Study III-IV)

**Comprehensive Assessment of Psychopathic Personality (CAPP;** Cooke et al, 2012). The CAPP conceptualizes psychopathy over six domains: *Attachment, Behavioral, Cognitive, Dominance, Emotional,* and *Self* encompassing 33 items in total (see Figure 3). In Study III, we investigated prototypicality ratings of the CAPP rated on a 7-point Likert type scale (from 1 = *low prototypicality* to 7 = *high prototypicality*). The CAPP-items were included in the Universal Protocol for Conducting Prototypicality Studies with the Comprehensive Assessment of Psychopathic Personality (Kreis, 2008).

**Boldness.** For the purpose of Study IV, we developed three items to operationalize the concept of *Boldness*, as construed in the Triarchic model of psychopathy (Patrick et al., 2009). The items: *Socially bold, Adventurous,* and *Emotionally stable* were rated on a 7-point Likert type scale (from 1 = *low prototypicality* to 7 = *high prototypicality*).

### 3.3 INTER-RATER RELIABILITY (STUDY I-II)

Reliability refers to the consistency of a measure which can be estimated with observed scores from generated data (Furr, 2011). Technically, it reflects the degree to which differences in the observed scores reflect differences in participants “true” (unmeasurable) scores (Furr, 2011). Different methods can be used to estimate reliability (i.e., parallel tests, internal consistency, test-retest). Test-retest reliability can be used when the same individual takes the same test on repeated occasions (Furr & Bacharach, 2008). This method is suitable for measures of stable psychological constructs, and the underlying assumption is that a participant’s “true” score does not change in between assessments. Given this assumption, the correlation between the two test sessions (i.e., the reliability coefficient), is supposed to reflect the degree of measurement error (Furr & Bacharach, 2008).

In **Study I**, the consistency of repeated PCL-R scores was investigated using a naturalistic test-retest design. Participants ( $N = 27$ ) completed two PCL-R interviews at different time points (i.e., Test 1 (T1) and Test 2 (T2)), assessed by different teams of clinicians. Degree of inter-rater reliability was analyzed using intra-class correlations (ICCs; Shrout & Fleiss,

1979). We used a two-way random effects model ( $ICC_{AI}$ ) for a single rater with absolute agreement (Mc Graw & Wong, 1996). The rationale for using this model was: (a) raters were randomly drawn from the population (i.e., there was no specified order regarding which team conducted the assessments at T1 or T2), (b) the ratings represent one consensus rating (i.e., rather than an average of several independent scores) and (c) we were interested in raw score differences between T1 and T2 (rather than the consistency of scorings).

In **Study II**, inter-rater reliability of the PCL:SV was investigated in a random subsample of participants ( $n = 11$ ). In this study, we used a two-way mixed effects model ( $ICC_{AI}$ ) for a single rater with absolute agreement (Mc Graw & Wong, 1996). Both interviewers (graduate or doctoral level students) had undergone formal PCL-R training.

ICCs range between 0 and 1, with larger values indicating stronger agreement. There is no real consensus on threshold values for what constitutes “good” reliability, however, values around 0.70-0.80 are considered quite high (Furr, 2011).

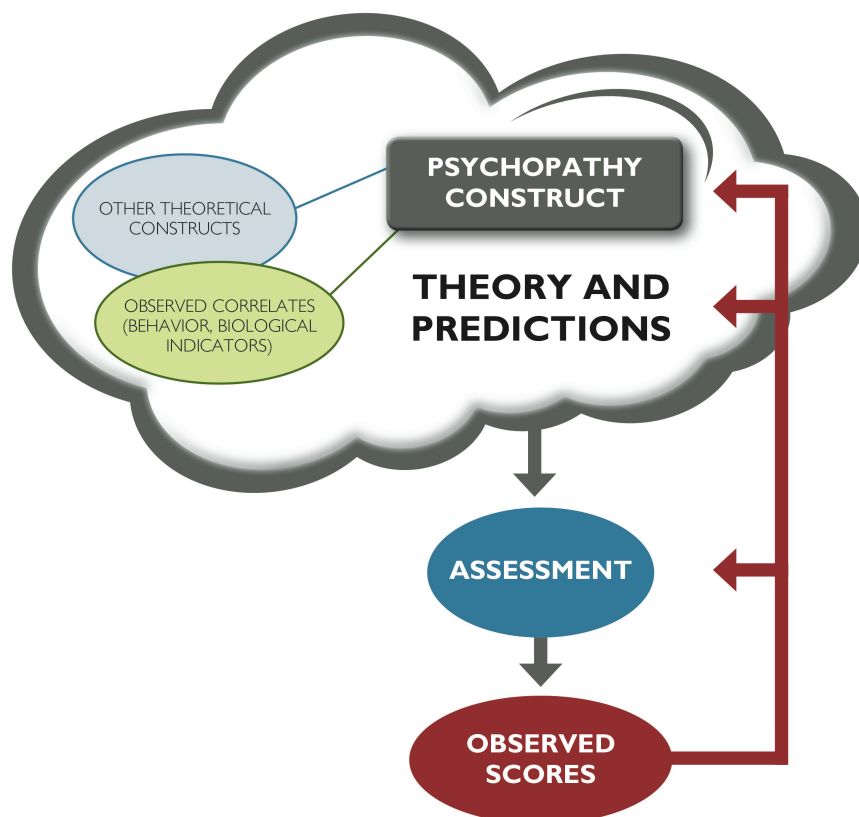
### **3.4 CONSTRUCT VALIDITY (STUDY II-IV)**

Validity refers to the *theoretical interpretation* of test scores (Furr, 2011). According to the official definition by the American Educational Research Association (AERA) et al., validity reflects “the degree to which evidence and theory support the interpretation of test scores entailed by the proposed uses” of a test (AERA et al., 1999, p.9). This definition implies that: (a) interpretation of test scores is ongoing and context-specific (i.e., a test is never “valid” in all different kinds of situations), and (b) validity is continuous, not “all-or-nothing” (Furr, 2011).

Construct validity is an umbrella term that encompasses several types of evidence, including content and internal structure of a measure, as well as associations with other variables (Furr, 2011; but see Newton & Shaw, 2013, for the proposition that the term “construct” is superfluous, given that all validity research essentially concerns construct validity). For example, construct validity encompasses *content validity* (investigated in **Study III-IV**), which reflects the degree to which the content of a measure captures the entire domain of a construct. The content should capture the core domain of a construct, neither more (in which case it might be “overinclusive”) nor less (rendering it “underinclusive”) (Furr, 2011).

In psychology and social sciences, constructs (e.g., neuroticism, intelligence, extraversion) refer to largely hypothetical, and essentially unobservable, characteristics or processes (Bollen, 2002; Borsboom, Mellenbergh, & van Heerden, 2003; Smith, 2005), but that can be assumed to exist in the real world (Malmgren, Radovic, Thorén, & Haglund, 2010). The construct can be estimated with observed scores serving as proxy variables (Borsboom et al., 2003). The theory of construct validity dates back to the 1950’s. At that time, Cronbach and Meehl proposed that a hypothetical construct is embedded in a theoretical framework (referred to as a “nomological net”), which guides empirical testing (1955). This fundamental premise - that constructs are embedded in a theoretical network that guides empirical testing - still holds in contemporary theory on construct validity (Borsboom et al., 2003; Furr, 2011).

The dynamic nature of construct validity is illustrated in Figure 4. The theoretical framework encompasses predictions about associations between the construct under consideration, other theoretical constructs and observed correlates (e.g., behaviors, biological indicators). This theoretical framework guides the development of different assessments that are used to investigate to what degree the observed scores comport with the theoretical predictions (Smith, 2005). The empirical testing involves the assessments of *convergent evidence* (i.e., the degree to which the observed data overlaps with measures of theoretically related constructs) and *discriminant evidence* (i.e., the degree to which the observed data fails to demonstrate overlap with measures of unrelated constructs). Based on the empirical findings, the researcher might choose to revise the assessment, the theoretical framework or the conception of the theoretical construct itself (Smith, 2005). In essence therefore, construct validity is an open and ongoing process that facilitates continuous reevaluation and refinement of different assessments (Smith, 2005).



**Figure 4.** An illustration of the dynamic process of construct validation. Assessments are developed based on theory and predictions about the construct under consideration. Empirical testing generates observed scores. Based on the findings, the examiner might choose to re-evaluate or revise (illustrated by the red arrows) the assessment or the underlying theory (Smith, 2005).

Different methods can be used to investigate validity. In this dissertation project, factor

analysis and prototype method were used.

### **3.5 FACTOR ANALYSIS AND EXPLORATORY STRUCTURAL EQUATION MODELING (ESEM; STUDY II)**

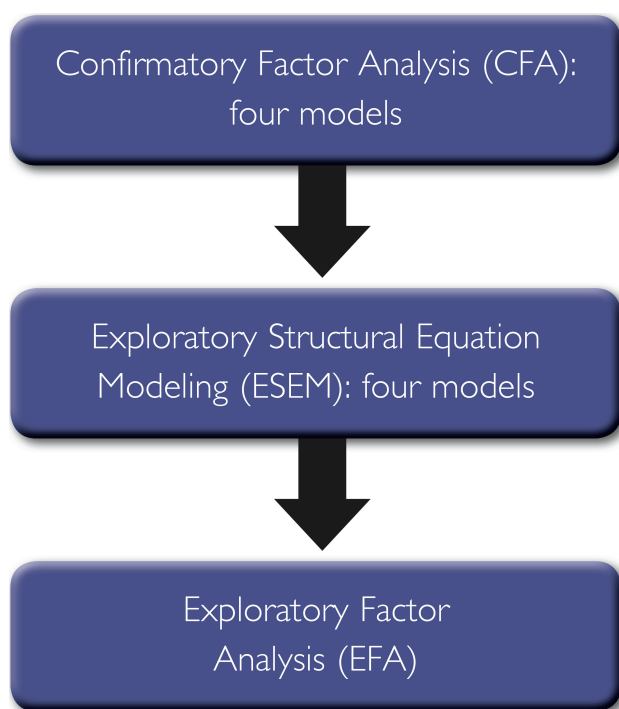
Factor analysis is one method commonly used to investigate the validity of measures designed to index psychological constructs. Factor analysis aims to uncover underlying dimensions in a scale, by identifying which items or subscales belong together (i.e., covary). The rationale is that scores should be based on unidimensional, or correlated item or subscales to reflect a coherent psychological variable (i.e., factor; Furr, 2011). Factor refers to groups of items that cluster together. Individuals who receive a high score on one item in a factor generally are expected to also receive high scores on other items in the factor (Furr, 2011).

Different types of factor analytic techniques can be used, depending on whether the researcher has a priori hypotheses about the scale's dimensionality (Bollen, 2002). Exploratory factor analysis (EFA) investigates potential factor structures without a priori hypotheses about underlying factors. This method can be limiting in a sense that it can generate factors that are difficult to interpret. Confirmatory factor analysis (CFA) is a theory driven method that is conducted based on a priori hypotheses, regarding number and associations between factors as well as specification of item loadings (Furr, 2011). Mathematically, this method tests the degree of convergence (i.e., "fit") between a model implied correlation matrix and correlation matrices based on the obtained data. A "good fit" implies that the theorized model is consistent with the obtained data, whereas "poor fit" implies high divergence between the theorized model and the obtained data (Furr, 2011).

CFA tends to be applied in a dynamic manner in which theoretical models are assessed, revised and re-evaluated (Furr, 2011). The technique of CFA is advantageous in a sense that different proposed structures can be modeled; however, it commonly imposes restrictions (e.g., each item is specified as loading on only one factor with zero-loadings on others). During recent years, the rather novel technique of Exploratory Structural Equation Modeling (ESEM; Marsh, Morin, Parker, & Kaur, 2014) has been increasingly used. ESEM is mainly a confirmatory approach, however it integrates features of both EFA and CFA. It allows for greater modeling flexibility with investigation of small potential cross-loadings (Marsh et al., 2014).

CFA, ESEM and EFA were used in **Study II**, to examine the factor structure of the Swedish translation of the PPI-R. This analysis was based on four proposed factor models, demonstrated in previous research (Benning et al., 2003; Neumann et al., 2008). For the purpose of the analysis, z-scores were calculated for the subscale scores and standardized for males and females separately, based on previous research suggesting the need for gender specific normative groupings (Lilienfeld & Widows, 2005). As illustrated in Figure 5, the analysis proceeded in three consecutive steps. In the first step, the four proposed models were tested with CFAs. Given that none of the models demonstrated "good fit", potential factor

structures were further tested with ESEM, and finally with EFA. Degree of model fit was analyzed using several indices suited for the analysis (i.e.,  $\chi^2$ ; RMSEA; CFI; SRMR).



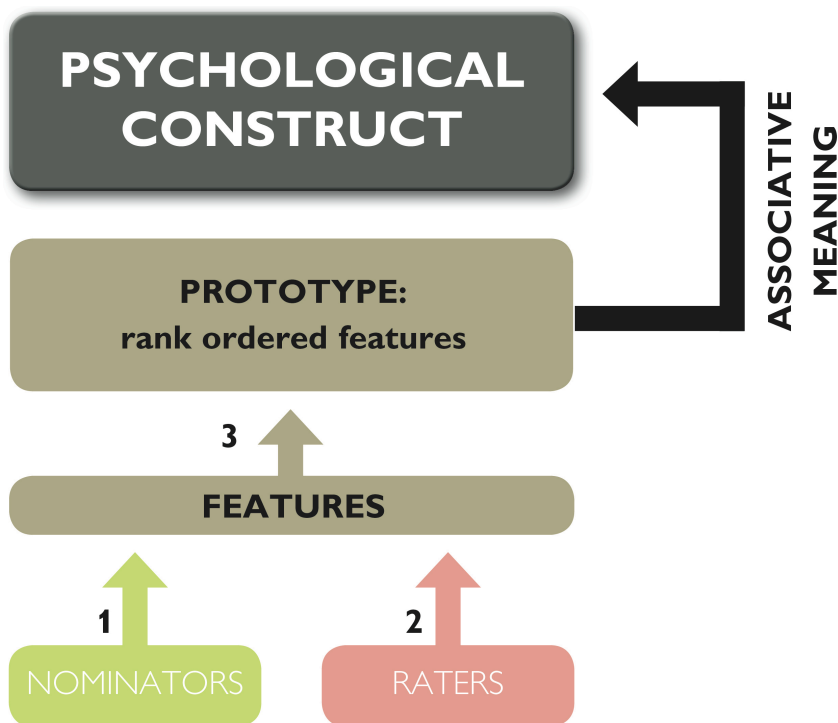
**Figure 5.** An illustration of the three consecutive steps in the factor analysis conducted in **Study II**, which aimed to investigate the factor structure of the Swedish translation of the PPI-R.

### **3.6 PROTOTYPE THEORY AND METHODOLOGY (STUDY III-IV)**

In **Study III-IV**, prototype methodology was used to explore participants' (i.e., professional and laypersons') perceptions about alternative models of psychopathy. Prototype methodology aims to investigate to what degree individuals' mental representations of a construct converge with a theoretical standard (Horowitz, Wright, Lowenstein, & Parad, 1981). It has been used to investigate various psychological constructs, including morality (Walker & Henning, 2004), and anger (Russel & Fehr, 1994). It has also been used to investigate psychopathy models (e.g., Salekin, Rogers, & Machin, 2001).

Prototype theory originates from cognitive psychology (Horowitz et al., 1981; Rosch, 1978). The underlying premise is that theoretical constructs are poorly defined and have "fuzzy boundaries" (Rosch, 1978). A prototype represents an ideal example of the construct, and therefore reflects its associative meaning (Horowitz et al., 1981). Prototypes are internally organized in a sense that the most prototypical features (e.g., "wings", "beak") are more strongly associated with other highly prototypical features (e.g., "feather"). Highly prototypical features also demonstrate a higher capacity to activate the construct itself (i.e., "bird") (Horowitz & Turan, 2008). This semantic organization creates a knowledge structure of a construct in people's minds (Horowitz et al., 1981). This knowledge structure can be used to make predictions about unobserved characteristics or behaviors in the target individuals (Horowitz & Turan, 2008).

Figure 6 illustrates a common methodology to generate a prototype. One group of individuals (i.e., nominators) generates features they consider typical of the prototype. A second group rate these nominated features, based on perceived degree of prototypicality. This results in a prototype encompassing a list of rank-ordered features (Horowitz & Turan, 2008). For example, the item pool in the CAPP model was developed by a group of researchers. The perceived prototypicality of these items are currently being investigated by groups of raters (professional and layperson) in different countries, including Studies III-IV in this dissertation project (for a description of CAPP, see 1.6.3).



**Figure 6.** A common approach in prototype methodology: one group of individuals (nominators) generates a pool of features they consider typical of the prototype. A second group of individuals (raters) generate mean ratings for these features, which creates a prototype (Horowitz & Turan, 2008).

## 4 OVERVIEW OF THE STUDIES

### 4.1 STUDY I

#### BACKGROUND AND OBJECTIVES

To date, research on the validity and reliability of the PCL-R has mainly been conducted in highly regulated research contexts. During recent years, however, researchers have increasingly started investigating PCL-R field reliability, which refers to the degree to which it can be reliably scored in applied settings. Collectively, these studies have demonstrated questionable PCL-R inter-rater reliability, in applied settings in the U.S. and North America (Murrie et al., 2008; Edens et al., 2010; Edens et al., 2014; Miller et al., 2012). The present study aimed to investigate field reliability of the PCL-R in a Swedish naturalistic setting.

#### METHODS

This archival study involved all life-sentenced offenders who had appealed to Örebro District Court between 2006 and 2012 to have their sentences commuted. Participants had undergone at least two court-ordered risk evaluations involving PCL-R assessments. The final sample ( $N = 27$ ) had spent on average 11.70 years in prison, at the time for their first evaluation. Participants were assessed with the PCL-R twice by a team of experienced forensic evaluators retained by an independent government authority. The mean time between the two assessments was 2.33 years. Reliability of PCL-R scores (factor, facets and items) was analyzed by examining the intra-class correlation coefficient (ICC). We used a two-way random effects model ( $ICC_{A1}$ ) for a single rater with absolute agreement. Difference scores were calculated, to further examine fluctuations of scores over time.

#### RESULTS AND CONCLUSION

The overall reliability of the PCL-R ( $ICC_{A1}$ ) was .70 for the total score (.62 and .76 for Factor 1 and 2 scores, respectively). The antisocial Facet 4 demonstrated good reliability (.90), with the remaining facets (reflecting affective, interpersonal, and lifestyle aspects), demonstrating considerably lower reliability ( $ICCs = .54-.60$ ). Reliability of individual items was quite variable, ranging from .23 to .80. Markedly high and low scores at the initial assessment tended to regress toward the mean at the second assessment. The results are in line with previous international research, demonstrating some loss of reliability from research to applied forensic settings.

## 4.2 STUDY II

### BACKGROUND AND OBJECTIVES

The Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) was developed to capture a broad range of affective and interpersonal psychopathic traits. To date, it has mainly been used in American criminal or student samples. This study aimed to investigate reliability, construct validity and factor structure of the Swedish translation of the PPI-R. Construct validity was investigated primarily by examining the degree of overlap between the PPI-R and the PCL:SV (Hart et al., 1995). Scores on the PPI-R was also evaluated in terms of their relations with theoretically relevant criterion variables, reflecting emotional deficit and anxiety proneness.

### METHODS

Participants ( $N = 227$ ) were healthy non-criminal individuals, recruited through advertisements at local campus areas and a website where studies seeking participants are listed. All participants completed the PPI-R, and a subgroup of randomly selected participants ( $n = 51$ ) also underwent an interview using the PCL:SV. A partly overlapping subsample ( $n = 159-163$ ) completed additional self-report measures of empathy, alexithymia and trait anxiety. Construct validity of the PPI-R was examined using Pearson correlations. Subgroup differences were explored with independent samples  $t$ -tests, and internal consistency was examined using Cronbach's  $\alpha$ . Factor analyses were performed using CFA, ESEM and EFA.

### RESULTS AND CONCLUSION

The results demonstrated adequate reliability (test-retest and internal consistency), and a somewhat mixed construct validity for the Swedish translation of the PPI-R. The PPI-R total score was significantly associated with PCL:SV total score ( $r = .38$ ) and its interpersonal and affective Part 1 ( $r = .43$ ). This association was driven by the Self Centered Impulsivity (SCI)-factor, however. Fearless Dominance (FD) failed to demonstrate any associations with PCL:SV total, or factor scores. SCI and FD were associated with trait anxiety in opposite directions (positively and negatively, respectively). Coldheartedness was negatively associated with all empathy scales. Factor analyses failed to confirm any of the proposed factor structures from previous studies (Benning et al., 2003; Neumann et al., 2008).



### 4.3 STUDY III

#### BACKGROUND AND OBJECTIVES

The Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke et al., 2012) is a new theoretical model of psychopathy that focuses on the assessment of potentially dynamic affective and interpersonal features, with less emphasis on antisocial and criminal behavior. Several international studies have investigated the content validity of CAPP by conducting prototypicality analyses of the 33 items (Hoff et al., 2012; Kreis et al., 2012; Smith et al., 2014). In the current study, the aim was to investigate (a) prototypicality ratings of a Swedish translation of the CAPP items, and (b) global perceptions and attitudes about psychopathy, among Swedish forensic practitioners.

#### METHODS

Participants ( $N = 90$ ) were Swedish forensic practitioners divided into three subgroups, based on occupational and educational differences: forensic evaluators, forensic ward staff and clinical ward staff. Participants completed a modified Swedish translation of a study protocol that has been used in previous research (Smith et al., 2014). In the first section of the protocol, participants provided prototypicality ratings (anchored at 1 = *low prototypicality* to 7 = *high prototypicality*), for (a) the 33 CAPP items and nine “foil” or control items included in a standard CAPP prototype protocol (Kreis, 2008), and (b) three supplementary items to assess psychotic symptoms (i.e., *Peculiar behavior*, *Delusional beliefs*, and *Disturbed thinking*). Participants also responded to questions regarding global perceptions and attitudes about psychopathy (e.g., personal experience, perceived prevalence), and 28 attitudinal statements that assessed perceived correlates of psychopathic traits (e.g., violence proneness; treatment amenability). Prototype ratings were analyzed with descriptive statistics. Differences between the professional subgroups were examined with multivariate analysis of variance (MANOVA). Associations between CAPP prototype ratings and attitudinal ratings provided by the participants were quantified using Pearson correlations.

#### RESULTS AND CONCLUSION

The majority of the 33 individual CAPP items and the six CAPP scales were rated as at least “moderately” prototypical of psychopathy, with *Dominance*, *Self*, and *Attachment* obtaining the highest mean ratings. This replicated previous international research. A few significant differences between the professional subgroups emerged, including the ratings of the psychotic-spectrum items (e.g., the clinical ward staff rated these items significantly higher than the forensic ward staff). Regarding the attitudinal statements, participants viewed psychopaths as more likely to commit crimes than the average criminal, without being blatantly “evil” people.

## 4.4 STUDY IV

### BACKGROUND AND OBJECTIVES

Seemingly adaptive traits (e.g., social prowess, lack of anxiety, fearlessness) have been emphasized in historical (Cleckley, 1941; Lykken, 1995) and contemporary models of psychopathy (Lilienfeld & Widows, 2005; Patrick et al., 2009). Despite this, the relevance of these traits to the psychopathy construct is intensively debated in the field (Skeem et al., 2011). To date, the majority of studies on the *Boldness* construct (which reflects social dominance, venturesomeness, and emotional stability) have relied on self-report measures. This study aimed to investigate content validity of *Boldness*, as conceptualized in the Triarchic model of psychopathy (Patrick et al., 2009). It had three objectives: to investigate (a) prototypicality ratings of *Boldness*, (b) associations between *Boldness* ratings and CAPP prototypicality ratings, and (c) associations between *Boldness* ratings and perceptions about attitudinal constructs, theoretically relevant to psychopathy.

### METHODS

Participants encompassed: Swedish forensic practitioners ( $N = 90$ ; same participants as in Study III), American probation officers ( $N = 41$ ) and American community members attending jury duty ( $N = 404$ ). All participants completed essentially the same research protocols. Participants provided prototypicality ratings (anchored at 1 = *low prototypicality* to 7 = *high prototypicality*), for (a) the 33 CAPP items and nine “foil” or control items included in a standard CAPP prototype protocol (Kreis, 2008); (b) three items developed to tap *Boldness* (*Socially Bold*, *Adventurous*, *Emotionally stable*); and (c) an exploratory prototype item [*“Successful”*]. Participants also responded to questions regarding attitudinal statements about their perceptions of psychopathy covering adaptive and maladaptive features (e.g., “success in life”, criminal propensity). Prototype ratings were analyzed with descriptive statistics. Group differences were analyzed with *t*-tests. Pearson correlations were used to evaluate external correlates of the CAPP-ratings.

### RESULTS AND CONCLUSION

Both groups of professionals rated *Socially Bold* and *Adventurous* as “moderately” to “highly” prototypical of psychopathy. Across the three groups, *Emotionally stable* received low ratings. The forensic practitioners rated the composite *Boldness* variable in a similar range with four of the CAPP scales. This pattern did not hold up among the probation officers and jury members however, due to the low ratings of *Emotionally stable*. Across the three samples, *Boldness* ratings were associated with various types of positive outcomes and characteristics (e.g., social skill, intelligence, avoidance of crime, general “success” in life). Across the three groups however, there were weak and nonsignificant associations between *Boldness* ratings and attitudinal items concerning crime propensity.

## 5 DISCUSSION

This dissertation project aimed to investigate the reliability and validity of traditional and alternative assessments and models of psychopathy. Why are psychometric properties of different psychopathy assessments important to investigate? This ties back to the conceptual controversy in the field (Lilienfeld et al., 2014a; Skeem et al., 2011). To obtain a sharper conceptualization of psychopathy, ongoing investigation and refinement of different theoretical models and assessments is needed (Skeem & Cooke, 2010a). This is illustrated in Figure 4: the dynamic and progressive nature of construct validation. Psychopathy assessments are used to inform various decisions about individuals in the legal system (e.g., sentencing, correctional placement, surveillance) in Sweden and internationally. A common understanding of psychopathy has implications for democratic values and the fundamental basis of rule of law: transparency and comprehensibility.

This discussion focuses on four main themes: field reliability of the PCL-R (**Study I**), alternative assessments and models investigated in this project (**Study II-IV**), perceptions of psychopathy (**Study III-IV**) and *Boldness* (**Study IV**).

### 5.1 PCL-R FIELD RELIABILITY

The PCL-R is commonly described as a reliable measure, and in some cases it has even been referred to as the “gold standard” measure of psychopathy (cf. Vitacco, Neumann, & Jackson, 2005). Importantly, however, the vast majority of studies on its reliability and validity have been conducted in highly regulated research contexts (Kennealy et al., 2007; Poythress et al., 2010). During recent years, researchers have increasingly started investigating *field reliability* of the PCL-R (Murrie et al., 2008; Edens et al., 2010; Edens et al., 2014; Miller et al., 2012).

These studies have been conducted in adversarial legal systems, where in some cases the evaluators have been retained by opposing sides in the legal case (Murrie et al., 2008). **Study I** provides unique findings to this growing body of research. It was conducted in an inquisitorial legal system, in which teams of experienced clinicians at the National Board of Forensic Medicine (an independent, nonpartisan organization) conducted the assessments. The overall reliability ( $ICC_{A1}$ ) for the total score (.70) was somewhat higher than those reported in previous studies (Miller et al., 2012). This might reflect the team-based approach: groups of experienced clinicians are expected to produce more reliable results, compared to individual evaluators (Hare, 2003, p.17). The overall reliability, however, was appreciably lower than the high level of agreement reported in the manual (ICC .87, pooled estimate; Hare, 2003). In our study, the reliability for the total PCL-R score was primarily driven by Factor 2, and in particular Facet 4 (the antisocial domain). Facets 1-3 (reflecting interpersonal, affective and lifestyle aspects) demonstrated poor reliability. This replicates the findings from previous international research studies (Edens et al., 2010; Miller et al., 2012).

To examine potential sources of unreliability, we calculated difference scores between the first and second assessment (i.e., T1 and T2). These scores demonstrated regression to the mean (RTM), which is a mathematical phenomenon. In our study, both exceptionally high and low scores at T1 regressed to the mean at T2. Markedly dramatic fluctuations occurred in four cases (changes ranging from 12 to 19 points). What were the reasons for the fluctuations in scores? One possibility is that inter-rater reliability was conflated with potential temporal instability. The fluctuations in scores could reflect some “real” changes in personality pathology or behavioral manifestations over time. Even though psychopathy is considered to be a rather stable personality constellation (Edens, 2006), longitudinal research on potential dynamic aspects of psychopathic personality is currently lacking. It should be noted, however, that PCL-R assessments are conducted based on a lifetime perspective (Hare 2003, p.19). Therefore, even if “real” changes occurred, they should not have exerted a substantial impact on the ratings given the short time window (an average of 2.33 years) between assessments.

Alternatively, some clinical variables could have contributed to the fluctuations in scores. For example, even though the ratings were consensus-based, some evaluators might have exerted a relatively strong effect on the scoring. International research has demonstrated that evaluator differences (e.g., degree of training, work experience) can influence scoring tendencies (Boccaccini, Murrie, Rufino, & Gardner, 2014). Given the team-based focus of our study, however, we could not investigate how individual rater characteristics influenced the ratings. There are a few potential explanations why scores went down between assessments (in the majority of cases where scores changed more than 5 points, there was a decrease in scores). At T2, participants might have “reframed” their answers to certain questions, by downplaying or omitting information regarding their criminal history or behavior (Porter & Woodworth, in Patrick, 2006). Moreover, the raters may have focused more on the grievous details of crimes at T1 (driving the scores up). Finally, some raters might have unconsciously given lower scores at T2, given that the offender was petitioning for release a second time.

Poor inter-rater reliability for scores on the PCL-R limits its predictive validity (Murrie et al., 2012). This is particularly salient for its widespread use in risk assessment procedures. Accumulated research has demonstrated that Facet 4 drives the association between PCL-assessed psychopathy and violence, with Facets 1-3 demonstrating limited incremental validity (cf. Kennealy et al., 2010). The lack of incremental validity, in combination with the poor inter-rater reliability for Facets 1-3, should raise concerns regarding their utility for the purpose of risk assessments.

The PCL-R scores in our study differed by approximately 5 points between assessments, which is highly similar to the findings in previous international research (Miller et al., 2012; Murrie et al., 2009). What are the applied implications of this? This change in scores can of course impact whether an individual reaches the diagnostic threshold for psychopathy. Being designated “a psychopath” has different implications in different legal and clinical settings. In

Sweden, PCL-R assessments of psychopathy are routinely conducted as part of the risk evaluations conducted by the Swedish National Board of Forensic Medicine. This evaluation takes a number of potential risk and protective factors into account (e.g., nature of the crime, criminal history, substance abuse, prosocial networks). PCL-R assessments of psychopathy are also conducted relatively frequently at the National Assessment Unit (NAU) at Kumla maximum security prison, as part of a psychological evaluation where offenders who have been charged with long-term sentences are sent. These assessments are influential for various decisions about the incarcerated individual (e.g., correctional placement, surveillance), and in some cases might be used to deny individuals participation in treatment programs. In the U.S, there has been a substantial increase in the use of PCL-R assessments of psychopathy over the past decade to aid legal decision-making (e.g., concerning sexual predator evaluations, parole eligibility, juvenile transfer to adult courts, death penalty sentencing) (De Matteo et al., 2014). Moreover, in some Canadian provinces PCL-R assessments of psychopathy influence the evaluation of indefinite incarceration of “dangerous offenders” (Edens et al., 2014). Taken together, the widespread impact of PCL-R assessments of psychopathy warrants further research on its reliability in clinical and forensic settings.

## **5.2 ALTERNATIVE ASSESSMENTS AND MODELS INVESTIGATED IN THIS PROJECT**

### **5.2.1 PPI-R**

**Study II** provides the first evaluation of the Swedish translation of the PPI-R. The results demonstrate satisfactory reliability (test-retest and internal consistency) in a non-criminal mixed-gender sample. Reliability scores were similar to those obtained in the original studies and recent European studies (Lilienfeld & Widows, 2005; Uzieblo et al., 2010).

The results also demonstrated promising but somewhat mixed construct validity for the PPI-R. The PPI-R total score was positively and moderately associated with the PCL:SV total and Part 1 scores, which was in line with our hypothesis and replicates previous research (Poythress, Edens, & Lilienfeld, 1998). The Fearless Dominance factor (FD), however, was not significantly associated with the PCL:SV or its factor scores. This was partly surprising, given that previous research has demonstrated at least modest associations between FD and PCL-R/SV Factor 1, ranging from .15-.45 (Lilienfeld et al., 2012a; Malterer, Lilienfeld, Neumann, & Newman, 2010).

The degree of convergence between different assessments should be considered in light of their underlying theories. Given that the PCL-based measures are the most extensively validated and used psychopathy measures, they are commonly used as “benchmarks” of psychopathy (Hall et al., 2014; Poythress et al., 2010). Conceptually however, different models pull in slightly different directions. In contrast to the PPI-R and the Triarchic model of psychopathy, the PCL-based assessments place a substantial emphasis on antisocial and criminal behavior. It is commonly the externalizing factors in different models that demonstrate the greatest overlap (Driscoll et al., 2014; Malterer et al., 2010). Different

measures differ, however, in the extent to which they cover “seemingly adaptive” traits (e.g., lack of anxiety, venturesomeness) captured in FD and *Boldness* (Drislane et al., 2014). In our study, the association between PPI-R total score and PCL:SV total and Part 1 scores was driven by the PPI externalizing factor SCI. This finding ran counter to our prediction and also to recent meta-analytic work demonstrating weak correlations between SCI and PCL-F1 (Marcus et al., 2013). Supplemental analyses demonstrated that the subscale Machiavellian Egocentricity (ME) accounted for most of this covariance. Conceptually, this finding is in line with the Triarchic model of psychopathy where meanness, which has demonstrated overlap with PCL-R Factor 1, covers aspects also covered in the ME-subscale (e.g., callousness, lack of empathy, aggression).

The PPI-R higher order factors were significantly associated with trait anxiety in opposing directions (positively and negatively, respectively), which replicates previous research (Marcus et al., 2013; Uzieblo et al., 2010). This finding suggests that trait anxiety might be a key feature distinguishing different domains in psychopathy. The conceptual relevance of trait anxiety (or lack thereof) is intensively debated in the field at present (Neumann, Johansson, & Hare, 2013; Skeem et al., 2011). Future research should investigate whether degree of anxiety could be a potential marker to distinguish different subtypes of psychopaths (in line with the early theories on “primary” and “secondary” psychopaths), which might differ in terms of co-occurring psychopathology and problem behaviors (Skeem et al., 2011).

The Coldheartedness (CH) scale did not demonstrate any significant association with PCL:SV or its factor scores in our study. This contradicts previous meta-analytic work which has demonstrated at least modest positive associations between CH and both PCL-R factors (Marcus et al., 2013). It might indicate that aspects captured by CH (e.g., lack of affiliation) is a largely distinct domain of personality (Depue & Morrone-Strupinsky, 2005). It would also be in line with the conceptualization of meanness as a separate domain in the Triarchic model of psychopathy (Patrick et al., 2009).

The findings on the higher order factors in **Study II** are somewhat challenged, given that the factor analyses failed to confirm previously proposed models (Benning et al., 2003; Neumann et al., 2008). Widely used personality assessments tend to exhibit poor fit with Confirmatory Factor Analysis (CFA), partly due to cross-loadings of individual subscales (Hopwood & Donnellan, 2010). In our study, the Fearlessness scale demonstrated moderate correlations with subscales from the SCI factor (i.e., Rebellious Nonconformity, Machiavellian Egocentricity). This replicates previous research, which has demonstrated cross-loadings of the Fearlessness scale, capturing aspects of both FD (thrill and adventure seeking) and the SCI (boredom proneness) factor (Benning et al., 2005; Edens & McDermott, 2010; Neumann et al., 2008). Future research should investigate factor loadings of individual items, with an emphasis on potential cross-loadings.

### 5.2.2 CAPP

The results in **Study III** demonstrate support for the content validity of the CAPP model in a Swedish context. Our participants viewed a large majority of items as moderately prototypical of psychopath. Moreover, all CAPP domains were rated as moderately to highly prototypical of psychopathy, with *Dominance*, *Self*, and *Attachment* receiving the highest prototypicality ratings. This is identical to the findings in the previous international studies (Hoff et al., 2012; Kreis et al., 2012).

The individual items that received the highest prototypicality ratings mainly reflect affective and interpersonal traits (e.g., *Manipulative*, *Deceitful*, *Self-justifying*, *Unempathic*). This dovetails with early conceptualizations of psychopathy (e.g., Cleckley, 1941). The *Behavioral* domain did not receive particularly high ratings (even though the forensic evaluators rated this domain significantly higher than the other subgroups). This is worth noting, in light of the dominance of the PCL-based conceptualization of psychopathy. The majority of the forensic ward staff have received PCL-R training, which could suggest that they would associate psychopathy with behavioral deviance and criminal behavior. Even though the items in the CAPP *Behavioral* scale do not explicitly refer to criminal behavior, at least some of them reflect aspects of deviant and violent behavior (e.g., *Disruptive*, *Aggressive*).

The *Cognitive* domain was not seen as particularly indicative of psychopathy, which is in line with previous international research (Hoff et al., 2012; Kreis et al., 2012). Moreover, a few CAPP symptoms received low prototypicality ratings (*Lacks pleasure*, *Lacks concentration*, *Unstable self-concept*), which also replicates previous research (Hoff et al., 2012; Kreis et al., 2012). The CAPP model was developed to be over inclusive, and the developers have suggested that it includes some features that might not be central to psychopathy (Cooke et al., 2012). Therefore, on the one hand accumulated research demonstrating low prototypicality for some symptoms could lead to item revision or deletion. On the other hand, these ratings could reflect that certain features have not been included in traditional assessments. Research is needed on associations between elevated levels of these traits and behavioral outcomes, to further investigate their potential relevance to psychopathy.

The occupational subgroups differed in their ratings of the “foils” (i.e., control items), and the psychotic-spectrum items embedded in the protocol. The forensic evaluators rated these items significantly lower than both groups of ward staff, which indicates that they have a clear conceptualization of what features are not typical of psychopathy. The clinical ward staff rated both the foils and the psychotic-spectrum items considerably higher than both other groups. This most probably reflects occupational and training differences. The clinical ward staff interacts with individuals that have been sentenced to forensic psychiatric treatment, a majority of whom have a psychotic disorder. In this setting, some clients might present with both severe mental disorder and a certain degree of psychopathic traits (Tengström, Hodgins, Grann, Långström, & Kullgren, 2004), which might explain why the conditions are perceived to co-occur more generally. A tendency to conflate psychosis and psychopathy has been demonstrated in previous international research involving laypeople (Smith et al., 2014).

Future research should further investigate perceptions of psychopathic traits in relation to perceived risk of dangerousness and also other psychiatric diagnoses - and importantly, *what those perceptions mean* in terms of legal decision-making.

The degree to which findings in **Study III** can be generalized to other professional groups in the Swedish legal system is unclear. The participants in our study were specifically recruited from the forensic psychiatric system: forensic assessment units at the National Board of Forensic Medicine and forensic psychiatric treatment wards. In the Swedish judicial system, individuals with a high degree of psychopathic traits are commonly not sent to undergo forensic psychiatric evaluation, given that psychopathy in isolation does not constitute a *severe mental disorder* (SMD; a medico-legal concept in the Swedish legal system). Therefore, even though the forensic evaluators have extensive experience conducting personality assessments, they are not routinely assessing individuals who are likely to be highly psychopathic. Future research on perceptions of the CAPP-model among additional Swedish participants should include staff in correctional settings, where clients have potentially higher degrees of psychopathic traits.

The results from **Study III** are informative regarding content validity of the CAPP, which only represents one aspect of validity. Future research should investigate associations between CAPP-based psychopathic traits and different outcome variables (e.g., behavioral outcomes and physiological indicators). Another interesting aspect for future research will be to investigate the potential dynamic nature of psychopathic personality traits, assessed with CAPP based measures. Improved knowledge of dynamic aspects of personality pathology will help inform intervention and treatment strategies.

### **5.3 PERCEPTIONS OF PSYCHOPATHY**

The potentially stigmatizing aspect of mental health diagnoses (e.g., perceptions of violence proneness, “dangerousness”, incompetency) has attracted increased interest (Corrigan, 2004). During recent years, researchers have increasingly started investigating perceptions of the “psychopathy label”, and psychopathic traits, in relation to punitive attitudes (Boccaccini, Murrie, Clark, & Cornell, 2008; Edens, Colwell, Desforjes, & Fernandez, 2005; Cox, Clark, Edens, Smith, & Magyar, 2013; Edens, Clark, Smith, Cox, & Kelley, 2013). Even though the findings are not entirely consistent, there is mounting evidence of stigma associated to the psychopathy label (De Matteo et al., 2014). For example, several case vignette studies have demonstrated that community members are more likely to support a death verdict when they perceive the defendant to be psychopathic (Cox et al., 2013; Edens et al., 2013). To date however, relatively few studies have investigated how practitioners and experts in the mental health field or correctional settings perceive psychopathy (Rogers, Duncan, Lynett, & Sewell, 1994).

Participants in **Study III** viewed psychopaths as more crime-prone, and more prone to be violent, than the average criminal. They did not, however, agree with the statement that most psychopaths are murderers per se or that psychopathy can be equated with “evil”. They



viewed psychopaths as responsible for their own actions, and able to differentiate right and wrong. This is consistent with the view of psychopathic traits in relation to criminal responsibility in most legal systems, including Sweden (DeMatteo & Edens, 2006). It is worth noting however that in the U.S., there have been propositions that psychopathy should be considered a mitigating factor in legal proceedings, with the argument that psychopaths are unable to comprehend the moral consequences of their actions (Morse, 2008). This line of thinking has been informed by accumulating research demonstrating neurobiological aberrations in psychopaths (Glenn, Raine, & Laufer, 2011b; Kiehl & Buckholtz, 2010).

Overall, the participants in **Study III** did not have strong punitive attitudes towards psychopaths: they did not endorse the statement that psychopaths should be treated more harshly by the criminal justice system, and they did not agree that psychopaths should be locked up to protect society. Participants endorsed the statement that psychopaths cannot change (i.e., will remain psychopathic), and they did not think that psychopaths can be “cured” by a treatment strategy. This is in line with a long held belief that psychopathy is “untreatable” (Salekin, Worley, & Grimes, 2010).

A few notable differences between the professional subgroups in **Study III** emerged. In comparison to the two groups from the National Board of Forensic Medicine, the clinical ward staff did not tend to agree that psychopaths can understand the difference between right and wrong and that psychopaths are responsible for their actions. They also more strongly endorsed that psychopaths are “evil”, and that psychopathic criminals should be treated more harshly by the criminal justice system. These sentiments probably reflect their work setting, where they interact with individuals who suffer from severe mental illness, who have been sentenced to compulsory forensic psychiatric care (which in the Swedish system may render a longer period of incarceration than a set prison sentence).

#### **5.4 BOLDNESS**

**Study IV** demonstrated that two groups of professional raters (forensic practitioners and probation officers) who were experienced in working with clients with varying degrees of psychopathic traits perceived two of the *Boldness* items (i.e., *Socially bold*; *Adventurous*) as “moderately” to “highly” prototypical of psychopathy. The community members rated *Socially Bold* and *Adventurous* as “moderately prototypical” of psychopathy. The overall high ratings should be put in the context that both professional groups use personality measures in their daily practice that are heavily weighted towards antisocial and deviant features, with limited coverage of *Boldness*-related traits.

The item *Emotionally stable* received the lowest prototypicality ratings, across the three groups. The forensic practitioners rated this item at the lower end of the “moderately” prototypical range; however, the other two groups did not perceive this item as indicative of psychopathy. The overall low ratings for *Emotionally stable* raises the question whether participants do not view this feature as characteristic of psychopathy, or whether the ratings are at least partly due to our wording of the item. It is possible that our conceptualization of

the item brought to mind desirable characteristics (e.g., having a stable mood; being optimistic), when in fact the item should capture aspects that at least border on pathological aspects (i.e., the *inability* to react in situations that should be distressing or frightening).

To place the *Boldness* ratings in a general framework of psychopathy ratings, we investigated associations between the composite *Boldness* variable, its three individual items and the six CAPP domains. Across the groups of professional raters, there were significant associations between the *Boldness* ratings and ratings for the CAPP domains *Self* and *Dominance*. Looking at the item level, it seems that some items in the *Self* (e.g., *Sense of invulnerability*) and *Dominance* (e.g., *Domineering*) scales are conceptually similar to *Boldness*. Moreover, the item *Lacks anxiety* is conceptually similar to *Boldness*. The degree to which *Boldness* might be indirectly incorporated in CAPP should be investigated in future research on clients in clinical settings.

In line with our predictions, across the three groups *Boldness* rating were positively associated with perceptions that psychopathic individuals are “successful” (i.e., productive, accomplished, industrious) and also “quasi-adaptive features” (e.g., being successful in life, being intelligent, having superior social skills). There were also some significant associations between *Boldness* ratings and perceptions of immutability (i.e., that psychopaths cannot change and that criminal psychopaths can be rehabilitated). *Boldness*-ratings were not associated with various negative aspects (e.g., crime proneness and violence proneness). Among the forensic practitioners, however, viewing *Boldness* as indicative of psychopathy was associated with viewing psychopathy as equated with “evil”. This is interesting in light of international research using case vignettes, that have demonstrated that the degree to which community members perceive the defendant to be a psychopath is contingent on their perceptions that he is “evil” (Edens et al., 2013). An avenue for future research could be to investigate to what degree perceptions of affective-and interpersonal traits of psychopathy, versus the behavioral aspects, potentially influence the actual ratings of psychopathy for legal decision-making.

Prototypicality studies are limited in the sense that they merely provide insight into individuals’ perceptions about the construct under investigation; they do not provide knowledge about the practical implications of elevated *Boldness* traits. Future research should investigate associations between self-reported or clinician rated *Boldness* traits and different behaviors. This research will advance our understanding of potential “tipping points”, at which these “seemingly adaptive” traits might become maladaptive.

Future research should investigate whether *Boldness* could be used to separate different subtypes of psychopaths. For example, individuals in the community with elevated *Boldness* traits could be “successful” in some domains, but also present with features (e.g., exploitativeness, cheating, unreliability) that impact their interpersonal functioning (Babiak et al., 2010). *Boldness* features (e.g., lack of anxiety) could also be of high relevance in clinical settings where they might act as ‘buffering’ factors for comorbid psychopathology, and different risk behaviors (e.g., suicidal behavior, aggression).

## 6 FUTURE RESEARCH DIRECTIONS

### 6.1 WHERE IS THE FIELD HEADED?

An overarching aim for future psychopathy research is to further improve our understanding of what psychopathy is, and what *it is not* (Skeem et al., 2011). Current knowledge about reliability of psychopathy measures used in legal decision making (regardless of which measure it is) should be communicated to policymakers and clinicians, so that inferences that are drawn based on these assessments are empirically founded (De Matteo et al., 2014).

PCL-R field reliability should be further investigated in additional cultural settings, involving large study samples. Moreover, future research should investigate whether continuous training of evaluators could be a means to improve inter-rater reliability. This research endeavor should encompass assessments of psychopathic traits in youths, which is increasingly researched (Frick et al., 2014). The last edition of the DSM (i.e., DSM-5; APA, 2013), includes the specifier “with limited prosocial emotions” (LPE) for the diagnosis conduct disorder (CD) among youths. The traits that LPE reflects (e.g., callousness) mirror affective and interpersonal psychopathic features in adults. It should be noted that research on adults has indicated that (a) affective and interpersonal psychopathic traits demonstrate particularly poor inter-rater reliability when assessed in applied settings (Edens et al., 2010; Miller et al., 2012), and (b) punitive sentiments might be particularly associated with perceptions that a defendant has elevated affective and interpersonal psychopathic traits (Cox et al., 2013; Edens et al., 2013). Overall therefore, research is needed on the field reliability of the LPE specifier, also in relation to potential stigmatizing effects.

Future research on the construct validity of alternative models and assessments of psychopathy should investigate their associations with different types of external correlates (e.g., institutional misconduct, drug abuse, suicidal behavior, treatment motivation). Our research group is currently investigating the validity of the Swedish translation of the TriPM (Patrick, 2010), through the association with external correlates (e.g., antisocial and criminal behavior, psychiatric comorbidity, suicidal behavior, anxiety) among males and females undergoing forensic psychiatric evaluation at the National Board of Forensic Medicine. This ongoing project builds on and advances **Study IV**, by investigating whether *Boldness*-traits could act as a risk or protective factor for problem behaviors in a clinical setting. We are also designing a survey-based study, which aims to investigate lay judges and professional judges’ legal attitudes of psychiatric disorders (including ASPD and psychopathic traits). This will advance **Studies III-IV**, by investigating perceptions of psychopathy among additional groups of decision makers in the Swedish legal system.

Future research should also investigate psychopathic subtypes in criminal and noncriminal samples (Drislane et al., 2014; Hicks, Markon, Patrick, Krueger, & Newman, 2004; Skeem, Johansson, Andershed, Kerr, & Loudon, 2007), to unravel whether particular psychopathic traits (e.g., lack of anxiety) could be used to distinguish different types of problem behavior. An increased interest for subtypes of adult psychopaths is mirrored by expanding research on

clinically heterogeneous groups of youths with CD (Enebrink et al., 2005; Frick et al., 2014). In this field, more research is needed on longitudinal aspects of emotional indicators (e.g., fearlessness, anxiety) and behavioral outcomes (Larsson, Andershed, & Lichtenstein, 2006). It also remains largely unexplored how family factors might affect the development of psychopathic traits (Andershed et al., 2002; Frick et al., 2014). An improved understanding of etiological pathways will be informative for the design of intervention and treatment programs (Salekin et al., 2010).

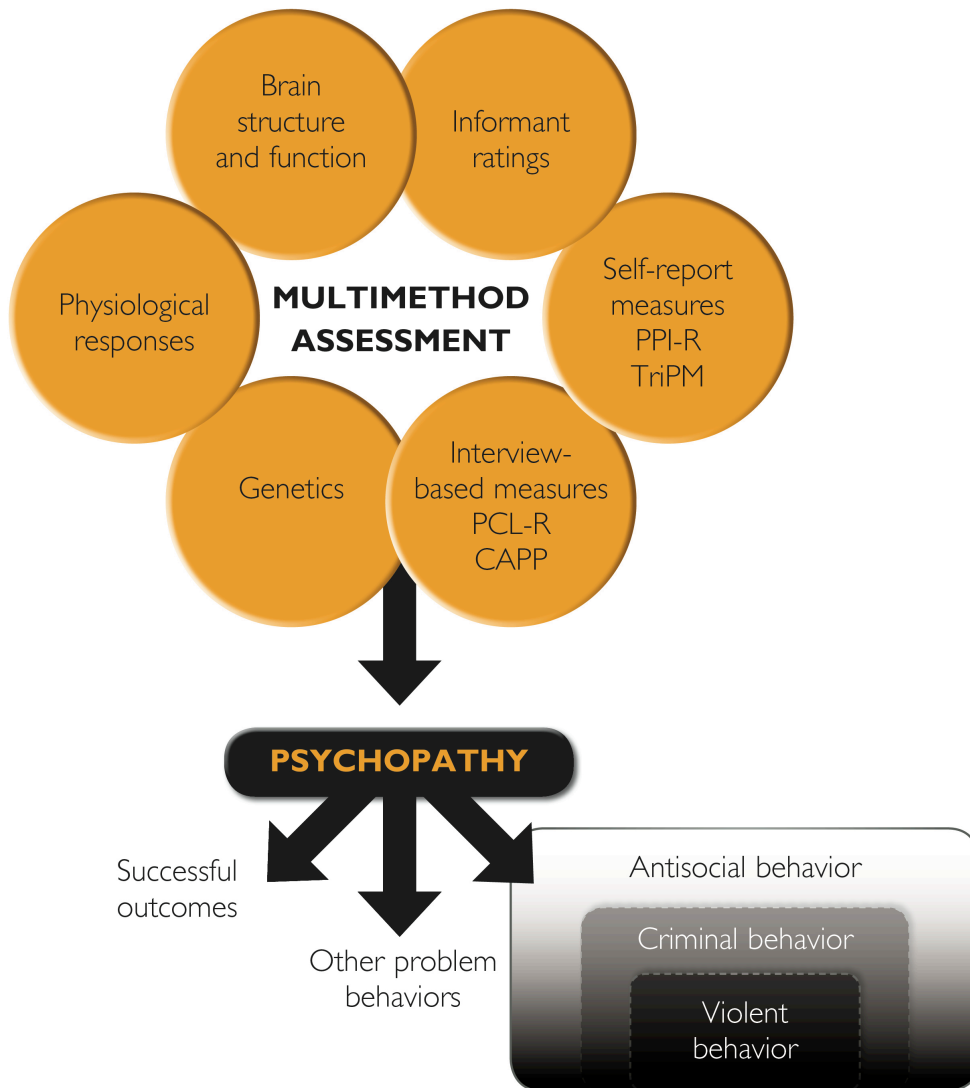
Researchers have increasingly started challenging the long held belief that psychopathy is “untreatable” (Salekin et al., 2010). This pessimistic view, which lacks sound empirical evidence, has permeated international policy and practice to the point where incarcerated individuals with high PCL-R scores tend to be excluded from treatment programs (D’Silva, Duggan, & McCarthy 2004; Skeem et al., 2011). Treatment of psychopathy remains an underresearched area, partly due to methodological challenges (e.g., conceptualization of psychopathy, adequate follow-up periods) and random assignment of participants (D’Silva et al., 2004; Salekin et al., 2010). During recent years, however, some studies have demonstrated reduced violent behavior in PCL-assessed prisoners or psychiatric patients that have undergone treatment programs (Skeem, Monahan, & Mulvey, 2002; Olver, & Wong, 2009). Other interventions have specifically targeted core psychopathic traits (e.g., self-aggrandizement) and attachment styles (Bernstein et al., 2012). This research will be informed by psychopathy assessments that can detect potential fluctuations in personality pathology and behavior. CAPP-based measures could be useful tools for this purpose.

## **6.2 A GLIMPSE INTO THE FUTURE – WHAT MIGHT PSYCHOPATHY ASSESSMENTS COMPRISE?**

In line with rapidly expanding neuroscientific research and an increased interest in neurobiological transdiagnostic mechanisms, future psychopathy assessments might be more concerned with underlying mechanisms for different domains of psychopathy. This could be in line with a “systems biology approach”, including a battery of rating procedures that also encompasses biological indicators (e.g., brain structure and function, physiological responses, genetics) (Patrick & Drislane, 2014).

A potential scenario for such a multi-method approach is illustrated in Figure 7. This approach could include different personality measures; interview-based (e.g., PCL-or CAPP based), self-report measures (e.g., PPI-R, TriPM), and informant ratings of psychopathic traits complemented with the assessment of different biological indicators. Such an approach would pave the way for investigating a wider array of outcome variables and risk behaviors (e.g., manipulating, cheating), but also “successful” outcomes including work-related behaviors (Lilienfeld et al., 2014b). There is broad agreement that psychopathy is associated with some form of antisocial behavior (Miller & Lynam, 2014). Opinions diverge, however, regarding its association with criminal and violent behavior, which only constitute a small part of antisocial behavior (Skeem et al., 2011). Future research could further parse out how

psychopathic traits relate to a wider array of behaviors in relation to interpersonal relations more broadly.



**Figure 7.** A potential scenario for future assessments of psychopathic traits - through a multi-method approach including both personality assessments and various biological variables. This approach could facilitate investigation of a broader array of outcome variables, both “successful outcomes” and risk behaviors.

## 7 ETHICAL CONSIDERATIONS AND LIMITATIONS

### 7.1 ETHICAL CONSIDERATIONS

The Regional Ethical Review Board of Stockholm approved **Study I** (S12-90280), and **Study II** (2009/1128-31/3; 2012/1098-31/2) and provided an advisory statement for **Study III** (2012/2044-31/5). For **Study IV**, ethical permission for the American participants was granted by the University of Texas at Tyler Institutional Review Board (#F2011-48) and Texas A&M University Institutional Review Board (#2012-0111).

Incarcerated individuals (**Study I**) constitute a vulnerable population. It is important, however, to conduct research on incarcerated individuals, given that findings from studies on other samples are not readily generalizable to this particular group. It is possible that some of the questions in the personality assessments in **Study II** (e.g., deceitfulness, deviant behavior) or **Studies III-IV** (e.g., personal victimization) might have been perceived as intrusive. Participants in these studies, however, were instructed that they could choose to decline participation or cease participation at any time.

### 7.2 LIMITATIONS

This dissertation project aimed to investigate reliability and validity of the psychopathy construct, primarily in a Swedish context. Given that construct validity is a dynamic endeavor that involves continuous empirical testing, future research should investigate psychopathic traits using multiple types of measures (to avoid mono-method bias), and also examine external correlates including behavioral outcomes and biological indicators.

A few specific limitations are worth noting. The studies in this dissertation project were mainly cross-sectional. Moreover, the vast majority of participants that completed assessments of psychopathic traits (**Study I-II**) were men. This is a caveat in terms of generalizability of our results. It is in line, however, with international research on psychopathy, which is mainly conducted with male samples. Future research should encompass mixed gender samples, and psychopathic traits in females should be particularly investigated. The overall generalizability of the results in this dissertation project is compromised by the small sample sizes, particularly **Study I**. The participants in **Study II** were mainly college students, and therefore the results cannot be readily generalizable to representative community populations. This study only includes one referent measure of psychopathic traits (i.e., PCL:SV) and no behavioral indicators, which limits the conclusions about construct validity that can be drawn. Future research should investigate behavioral correlates (e.g., antisocial behavior, impulsivity) in relation to PPI-R scores. The forensic practitioners in **Study III** were recruited from both national departments of forensic psychiatry (Stockholm and Gothenburg). The inclusion rate varied at the different sites (61.4% and 80.4%, respectively). Overall, however, the results should be considered relatively generalizable to Swedish forensic practitioners. The jury members and probation

officers were recruited from a specific county in the Southwestern United States. Therefore, it is unclear to what degree the results in **Study IV** can be generalizable to other jurisdictions.

The factor analysis in **Study II** was conducted based on scale-level (i.e., not item-level) data. This level of analysis is in line with previous international research on the factor structure of the PPI/PPI-R, including the original studies (cf. Neumann et al., 2008; Uzieblo et al., 2010). It is potentially problematic, however, given that lack of factor structure in the PPI-R might be due to incorrect assignment of items to particular subscales (Neumann, Uzieblo, Crombez, & Hare, 2013). Future research with larger study samples could investigate factor structures using item-level data, while also applying techniques such as Item Response Theory (IRT).

Manifestation of personality traits is culturally sensitive; therefore, translating psychological personality assessments is potentially problematic (Furr, 2011). For the purpose of **Study II**, a translation and back-translation of the PPI-R was conducted, according to standard procedures and in collaboration with the test developer. For the purpose of **Study III**, several bilingual individuals fluent in both English and Swedish translated the CAPP-prototypicality protocol. Even though the protocol was not based on any established prior translation, our translation seems to comport well with the original English version and other translations, given that the prototypicality ratings were highly similar to those reported from previous international studies (Hoff et al., 2012; Kreis et al., 2012).

Prototype methodology (used in **Studies III-IV**) is limiting in the sense that it merely provides a *descriptive* analysis of people's perceptions of a theoretical construct, at a given point in time. Given that we investigated several subgroups of professional raters with expertise in relation to the construct, it is reasonable to assume that their ratings are theoretically useful.

## 8 CONCLUSIONS

This dissertation project provides some support for the validity and reliability of alternative assessments and models, in a Swedish context. The conclusions from the individual studies are the following:

- **Study I:** Mixed findings regarding the field reliability of the PCL-R in a field study involving life-sentenced offenders undergoing court-ordered risk assessment. The results demonstrated good reliability of the antisocial Facet (4), but poor reliability of Facets 1-3.
- **Study II:** Good reliability and promising but somewhat mixed construct validity of the Swedish translation of the PPI-R, in a mixed gender sample of non-criminal individuals recruited from campus areas.
- **Study III:** Support for the content validity of the CAPP model, rated by three subgroups of Swedish forensic practitioners. Participants viewed psychopaths as violence and crime prone, yet not blatantly “evil”. A few significant group differences emerged, including a tendency among clinical ward staff to conflate psychopathy and psychotic-spectrum items.
- **Study IV:** Partial support for the content validity of the *Boldness* construct, as construed in the Triarchic model of psychopathy, rated by professionals and laypersons from Sweden and the U.S. Overall, participants perceived the *Boldness* construct to be associated with various indicators of “quasi-adaptive” features, however not related to a greater propensity to engage in crime.



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