The Inadequacies of the Psychopath Checklist Revised (PCL-R)

Eli Rudy Horowitz
Rochester, New York

A Thesis Presented to the Honors Program of the
State University of New York, New Paltz
in Candidacy for graduation with honors

Psychology

May 8th, 2018

Bobby Bui	5/16/18
[Signature of Faculty] [Faculty's Printed Name]	[Date]

Abstract

I propose that the current criteria for diagnosing Psychopathy, the *Psychopath Checklist Revised* (PCL-R), is biased towards criminal and antisocial tendencies. While it may be an accurate screening method and means of predicting recidivism in antisocial Psychopaths, it does not shed light on the countless other individuals who may be thought of as "prosocial" psychopaths. There may very well be many individuals who satisfy much of the existing criteria for psychopathy and exhibit the neuro-morphology typical in antisocial psychopaths, but do not exhibit antisocial behavior and thus would not be tested, nor receive a score on the PCL-R that would classify them as a psychopath. I will examine the methods present in identifying psychopaths today and propose the idea that amongst us are many more.

Keywords: Psychology, PCL-R, Psychopathy

Inadequacies of the Psychopath Checklist Revised (PCL-R)

Movies like *American Psycho* and *Silence of the Lambs* have dominated society's perception of psychopathy, leaving us with images of crazed murderers, lunatics and madmen. While these exaggerated characters would likely qualify as psychopaths by today's measurements (if they actually existed), what if there were a whole other type of psychopath so discrete in their actions as not to be noticed? What if there were psychopaths careful and calculating enough to avoid discovery, perhaps even unaware of their differences? Although upsetting, this may very well be the case.

Psychopaths are determined by actions and tendencies as well as biological underpinnings. They can be diagnosed through key criteria as seen in the Hare Psychopath Checklist as well as brain activity and structure that has been shown to characterize the disorder. Psychopathy is defined as the tendency to be impulsive, manipulative, anti-social, and to lack fear and empathy (Hare, 1985). When referencing psychopaths, the terms sociopath and antisocial personality disorder are likely to come up as confusing, albeit relevant terminology. The differences between sociopathy and psychopathy only reflect the view of the person referencing the term. Sociologists often prefer the term sociopath because they see the disorder as having been caused solely by social factors, whereas a psychologist may prefer the term psychopath, as it references psychological, genetic and environmental factors (Hare, 1993).

The word Antisocial is often used incorrectly to reference an individual that tends not to socialize with others; a loner. The word is better understood when parsed into its separate parts; *anti*: against, and *social*: referring to society, or the rules, regulations and behaviors that we have come to accept as normal and correct. Someone with antisocial personality disorder has no

regard for these acceptable behaviors. To add to the confusion, antisocial traits are necessary in the diagnosis of a psychopath; as will be seen later. This necessary component often leads to the lumping together of terms, wherein Antisocial Personality Disorder is frequently used synonymously with sociopathy and psychopathy; an incorrect usage of the term. Antisocial personality disorder refers to specific DSM-IV criteria including the constant pursuit of unlawful and antisocial behaviors. Thus, many criminals satisfy the criteria for ASPD. Psychopaths on the other hand are thought to exhibit antisocial characteristics in addition to a whole other set of traits and characteristics which qualify them for psychopathy (Hare, 1993). While ASPD is exhibited frequently by psychopaths, someone with ASPD is by no means necessarily a psychopath.

How do we diagnose a Psychopath?

Although it is known that genetics play a key role in psychopathy, there is currently no clinical or genetic testing to determine its presence prior to birth. While various congenital illnesses such as hemophilia or sickle cell anemia can be determined via prenatal testing, psychopathy is determined in large part through the relevant behavioral traits known to manifest later in those it afflicts. Robert Hare is one of the foremost researchers on psychopathy. A retired professor and researcher at the University of British Columbia, Hare devoted most of his life to the study of psychopaths. Perhaps his most famous contribution to the study of the field is his creation of the *Psychopath Checklist Revised*, referenced more commonly as the PCL-R. His checklist, now the gold standard in psychopath testing, consists of standardized diagnostic criteria used to assess and formalize decisions concerning the status of the individual being tested. The PCL-R uses 20 behavioral traits to make its diagnosis. Administered by a trained clinician, it includes a semi-structured interview, usually under two hours, as well as a review of

available file and collateral information. The revised second edition differs from the first in its inclusion of the possibility of female psychopaths. The first edition reflected Hare's early work which only included incarcerated male offenders (Hare, 1991).

The characteristics that the checklist tests for are broken up into two factors. The first consists of traits which are categorized as interpersonal/affective; pathological lying as an example. The second factor consists of antisocial traits; impulsivity, criminal versatility and poor behavioral controls to name a few. Each of the characteristics that fall under the two categories can be scored as a 0, meaning not relevant to the individual being tested, a score of one, meaning somewhat relevant to the individual, or a score of two, meaning very relevant. The scores are added at the end of the test with a prototypical psychopath earning a score of 40 and someone with absolutely zero psychopathic traits earning a corresponding score of zero. The lowest possible score which will still qualify an individual as a psychopath is 30 points (Hare, 1991).

Brain scans of Psychopaths

The psychopaths that Hare and others have studied, have been given brain scans leading to multiple interesting discoveries. The brain of a psychopath has clear distinctions both in measured activity as well as in physical morphology (Blair, 2008). As far as the specific areas of the brain are concerned, existing studies have found relatively consistent data indicating dysfunction in the ventromedial prefrontal cortex (vmPFC) and the amygdala. These areas underlie fear learning, moral decision making and empathic responsiveness (Blair, 2008; Koenigs et al., 2011; Viding et al., 2014). Regarding morphology, the amygdala and vmPFC have been found to contain less gray matter volume and lower vmPFC cortical thickness (Ermer et al., 2012). These structures which can be characterized as a corticolimbic circuit are indicated

to be the cause of the social and affective deficits in psychopathy (Blair, 2013; Viding et al., 2014).

Disrupted prefrontal regulation of striatum

A study by Hosking et al. (2017), looks at psychopathy with a different paradigm. The study looks at the facet of psychopathy which is characterized by impulsive-antisocial symptomatology. The antisocial component of psychopathy includes a compilation of traits that include physical aggression, criminal behavior and substance abuse. These traits indicate that criminality comes from aberrant reward processing within the mesocorticolimbic dopamine system (Hosking et al., 2017). More simply put, antisocial behavior is related to a dysfunctional "reward center" within the brain. Hosking et al., examined a group of 49 male incarcerated offenders. The willing participants were given intertemporal choice tasks, characterized by having to weigh their preference of an immediate reward, for example 50 dollars now, or a delayed reward, for example 100 dollars in a week. These choices were presented to the participants as they underwent functional magnetic resonance imaging. The results indicated that psychopathy was related to higher activity in the nucleus accumbens (NAcc) and its degree of connectivity to the vmPFC. The BOLD signal positively correlated with PCL-R scores amongst participants. A weaker connection between the prefrontal cortex and the striatum.

Striatal hyperactivity in psychopaths was due to dysfunction in the prefrontal cortex. The prefrontal cortex is supposed to modulate activity in the striatum, however decreased connectivity resulted in decreased inhibition of the prefrontal cortex on the striatum which resulted in hyperactivity and rash decision making, due to dopaminergic release. The participants with the higher striatal responses to value of reward option during decision making were found to have weaker functional connectivity and higher self-reported PCL-R scores. Increased striatal

value activation alongside decreased connectivity was also a predictor for total number of convicted crimes. Thus, it was found that this connectivity and activation could be used to predict the level of criminal behavior.

This study also makes the claim that aberrant decision making and impulsivity is the cause of the carrying out of crimes that would result in incarceration and subsequent levels of recidivism.

But there is a problem- correlation *not* causation!

There is an important flaw to note in these studies when trying to draw conclusions. All of the brain scans that have been studied to account for these aforementioned differences belong to already incarcerated individuals, verified as psychopaths by the PCL-R. These studies use an ex-post facto correlational design, only verifying that a pre-existing relationship exists. We cannot generalize the characteristics of one group of people as the end all be all method of determination. One cannot look at these studies and conclude that an individual is a psychopath because of the morphology of their brain. Although these studies show success in determining the circuitry which *may* have accounted for their impulsivity and criminality, we are still not able to designate causation. This leads to another question; might there be non-offenders outside of the prison population who have brain scans similar to these incarcerated criminals? If so what would this person be like?

The truth is, disappointingly, that we cannot possibly know the answer to this question. Someone is likely to be given the PCL-R because of an unharmonious past. For example someone with a history of abuse, theft, antisocial personality, psychiatric visits etcetera, is going to be exhibiting the obvious characteristics that would suggest they be tested. Let us say for a moment that there are individuals out there, with brain morphology consistent with that listed

above, but who do not exhibit characteristic antisocial traits that would give reason for them to be tested. The only way for us to know this would be to give PET scans and CT scans to every possible person. For obvious reasons this is unfeasible. As already stated, there would be no reason to test perfectly healthy individuals for a disorder typified by antisocial behavior. The task at hand in order to determine how non criminal “psychopaths” show themselves is to scan a random person while looking for specific features of which we do not expect to be present. In addition, the process is costly and laborious. For obvious reasons this plan is logistically unsound. How then could we know if non antisocial individuals might have brains with morphology similar to those of confirmed psychopaths? Enter James Fallon.

James Fallon- an anomalous example

James Fallon is a self-diagnosed, pro-social psychopath. His story is bizarre, but substantiates the claim that a prototypical psychopath brain may not belong to a prototypical psychopath. In a ZeitgeistMinds interview (2014), Fallon gives a detailed account about how he came to discover that he was a psychopath. As a Professor at UC irvine, Fallon participated in a series of studies that examined PET scans of convicted murderers and serial killers. He was sent scans of dozens and dozens of violent, criminal psychopaths and became adept at noticing the morphological patterns that differentiated them from other individuals. Now, fast forward. In a completely separate study, Fallon was engaged in research that aimed towards discovering the genetic components involved in alzheimer's. In doing so, he would look through the PET scans of individuals with alzheimer's and compare them to a group of blind controls, of which his brain scan happened to belong. While looking through the control scans, he came across a scan with features blatantly indicating psychopathy; clearly this scan was a relic of his previous research with psychopaths and murderers. He shared the code with his technician, alerting him of his

mistake. Surprisingly, the technician told him that in fact the scan did belong to a member of the control group in the Alzheimer study. Knowing what he did of psychopaths, and afraid that a murderous psychopath was on the loose, Fallon broke the blind to see who the scan belonged to. It was his own. All of the sudden we have an example of the exact situation we thought so difficult to obtain. A non criminal psychopath was given a brain scan and by chance observed by an neurologist adept at identifying psychopaths.

Fallon goes on to say how this contradicted everything that was held true about psychopaths. The notion was that individuals with those previously mentioned neurological traits; atrophied frontal cortex and lowered amygdalar activation, would manifest in society as psychopathic killers and murderers. These people manifest themselves as Bundy's and Zodiac Killers. Fallon on the other hand is a law abiding citizen, husband, father and professor at an esteemed university. After a great deal of reflection and conversations with other psychologists, friends and family, Fallon came to realize that he did exhibit many psychopathic traits, however they were almost all categorized as factor one traits. He was narcissistic, lacked empathy and remorse, among other things. He admitted that he could in fact be manipulative and often lied. As it stands, he is a peaceful man with clear social limitations, that while prevalent seem not to have had too great an impact on his life.

Fallon has indicated that he is a borderline psychopath, what he deems to be a ‘prosocial psychopath’. According to the Hare Checklist he does not qualify as a categorical psychopath, bt instead is borderline. So here we have an individual with neuromorphology indicating psychopathy, numerous psychopath traits, but according to the PCL-R, not a psychopath. In every regard but for antisocial tendencies this man is a psychopath, but the fact that antisocial tendencies has been so deeply rooted to the diagnosis does not allow for his positive diagnosis.

In the case of Fallon, his tendencies seem to be relatively benign. As far as he has shared with the media, he has a healthy relationship with his family, he was able to hold a respectable job for many years without causing problems and he seems to have the respect of many people. It would be a mistake however to believe that factor one psychopaths, or rather factor one tendencies (as the PCL-R would not allow for a positive diagnosis of psychopathy) do not have the capacity to be harmful. Individuals high in factor one traits have the capacity to exploit people and ruin lives. Examples of individuals high in factor one traits are Bernie Madoff and Martin Shkreli. Bernie Madoff has had over 16,000 lawsuits filed against him for enacting the largest Ponzi scheme in history which took place in 2008 (Bernard, 2018). He lost fortunes that were entrusted to him, ruining lives. Martin Shkreli on the other hand first gained notoriety for increasing the price of Daraprim, a drug used to treat an infection caused by one of the world's most common parasites, by over 5,000 percent, leaving it inaccessible for people that needed it (Mangan, 2018). Both of these individuals would score very high for for all of the factor one criteria. They conned and manipulated people, taking advantage for their own gain. They lied and when confronted showed no empathy for what they had done. These psychopathic tendencies, while high, would still not qualify as a positive diagnosis under the PCL-R definition. Their brain scans are not accessible to us, however it would be interesting to see, if like Fallon, they share the typical psychopath brain with underrepresentation in the amygdala and vmPFC.

Psychopath Next Door

Martha Stout, a practicing psychologist and clinical instructor in the Harvard Medical School is also the author of the acclaimed book *The sociopath next door* (2005). While her book details accounts with those she defines as sociopaths, the difference between sociopaths and

psychopaths, as has already been discussed, is solely theoretical, so while her book addresses sociopaths I think it appropriate to extend her views to psychopaths and in doing so will use the two terms interchangeably in the following description. In her book, Stout accounts her experiences with "survivors of psychological trauma" of whom she has treated hundreds. She credits the vast majority of her patients suffering to the influence, or rather control of psychopaths. The book draws in the reader with its sensationalizing perspective, including an introduction that reads, "Who is the devil *you* know?". Perhaps a testament to the intimate role that sociopathy has had on the lives of her and her patients, she paints its picture rather subjectively, as opposed to some of the scientific writings which can be found. Nonetheless, she has vast experience in dealing with sociopaths and their victims and it has allowed her to boil the disorder down to a major key criterion; the lack of a conscience. She defines conscience as something that we feel which is neither behavioral or cognitive, "a sense of obligation ultimately based in an emotional attachment to another living creature, or to a group or even humanity as a whole" (2005). Part of the difficulty in assessing whether or not an individual is motivated by a conscience is that the impetus behind an action is not necessarily apparent to a viewer. Say an individual pulls over on a busy road to help an elderly woman cross. Is it the invisible and unexplainable moral pressure of his conscience urging him to help? or is he only acting in a way that he knows will help cement his closely managed and immaculate self-image?

The interesting thing about Stout's book is that by using the term Sociopath, she is able to bypass the limitations imposed by the PCL-R. Some of these "life ruining" individuals that she references in her book would certainly score high on the factor one component of the PCL-R, but as has been discussed, may not have many traits that would be categorized as antisocial. She

would refer to them as a sociopath, however if they were to be measured by the PCL-R, they may not be granted such a title.

PCL-R- psychopath or not?

In order to drive home the point that the PCL-R is inadequate in its definition of a psychopath, let us design one of our own. For this hypothetical test we will be diagnosing a male subject, X. He has no criminal history. Suppose for a moment that in addition to the interview, we have sufficient collateral information supplied to us from friends, colleagues and family to accurately answer each of the twenty questions of which the PCL-R is comprised.. From his responses we are able to take away the following information:

The subject is glib and expresses superficial charm, making him seem intriguing to those around him. People that know him may describe him as having a magnetic personality and being likeable. He has high expectations for his life to the point where he may come off as a “braggart” or “cocky”. He enjoys exciting and often risky activities, finding himself bored if not occupied. He lives his life “in the fast lane” so to speak. This individual has also been caught lying with frequency. On the same general page, he will lie in order to get things out of people. He has been reported deceiving people to turn situations to his advantage. He has been said to be manipulative and often deceives others for favors or money, seeing no problem in his actions. This individual has a marked lack of empathy, but may appear on the outside as if he has a vested interest in the wellbeing of others. His manipulative tendencies mask his lack of empathy to a casual observer. Nothing that he does is ever seen as his own, allowing him to remain guilt free even though it is clear that his actions harm others. When blamed for things he finds a way to shrug them off, or transfer the blame to someone else. For all of these deficiencies however, he realizes that his appearance and reputation are a large component of how he is viewed by

others, and he recognizes that a good reputation will make his life easier. As such, he avoids elicit activities and anything that might get him into trouble. Partaking in such activities would damage his closely managed reputation and as such could cause him to lose favor with others. As such, he has no history of delinquency and appears functional, independent and kind to others, although on the inside he only sees others as objects that he can use and manipulate.

This person that we have drawn up is pretty unpleasant. Someone like this would take your trust and abuse it. Professionals like Stout realize that the damage an individual like this can deal to someone's life is remarkable, and as such would regard said person as a Sociopath. When it comes to the PCL-R however, as might be expected from the trend in this paper, he would not even come close to qualifying as a psychopath. If you take a closer look at the dispersion of the score however, something comes clear; nearly all of the criteria in factor 1, information pertaining to the socio-affective domain, is given the highest possible score. This theoretical subject is the prototypical factor one psychopath. As he has been designed, he would satisfy all of the eight characteristics that make up factor one of the PCL-R, but he would still only score 16 points on the PCL-R! This leaves him well under the lowest possible score to qualify as a psychopath. There are two other characteristics that are not categorized under either factor 1 or 2, and these are multiple sexual partners and multiple short term marriages. If we continue to decorate this unpleasant person with these accolades he would still only receive a score of 20 points. This individual now satisfies every factor one characteristic *and* two non categorized characteristics to the highest degree possible, but still will not be regarded as a psychopath. He is able to maintain his high paying job and remain out of the clutches of the law. He knows that doing anything too reckless could get him caught, so he stays clean. According to the PCL-R, this person is not a psychopath. What if, like Fallon, these high scoring facet 1 behaviors could

be explained by a relatively inactive frontal cortex and amygdala? I propose that in such a case, this individual should be diagnosed as a psychopath.

Why has the PCL-R been designed this way?

I believe that the PCL-R has been designed with such an emphasis on antisocial characteristics, simply because these were the subjects available for study. Factor two traits are more easily seen and thus led to their study and categorization. Factor two traits include criminal versatility, impulsivity and juvenile delinquency to name just a few. Somebody that has these traits alone is likely to have a high profile. They will be known as a problem causer and are likely to have a criminal record. Not only are these types of psychopaths the more obvious "in your face" kind, but they are the ones that would be in prison populations. Bob Hare and Hoskin et al., were both able to spend time and study these individuals because their high factor two characteristics led to their incarceration. It only makes sense that this more available psychopath would be designed and modeled off of. These individuals have become the standard for psychopaths because they are the best known population.

Implications

Taking into consideration the type of psychopath that the PCL-R accounts for, it is estimated that close to .6 percent of the general population are psychopaths (Coid et al., 2009). This is a staggering figure if you think about it. With a current United States population of over 327 million (Census, 2018), this estimate would predict nearly 2 million psychopaths. This is simply the estimate of psychopaths who would be considered psychopaths in reference to the PCL-R. Again, this figure is a projection of the amount of known, often incarcerated, criminal psychopaths. These individuals will likely have the brain morphology discussed earlier and score high in factor two as well as factor one characteristics. Now take into account James Fallon. He

is an example of an individual that never otherwise would have been tested, but by pure chance, he discovered that his brain was similarly representative of psychopath morphology. This discovery was an anomaly. But what does it tell us about the likelihood that many other individuals, individuals who one might never expect, could have similar neuromorphology and in turn have multiple psychopath characteristics albeit belonging to factor one? How many other Psychopaths might be unaccounted for? How would the current estimate of .6 percent change? Would it become one percent? Two percent? *Five percent*? It is impossible to know! Because of the logistical barriers that have already been mentioned, we can only speculate as to how many Psychopaths are amongst us. How many people whose brains are drastically underrepresented in the areas pertaining to empathy, remorse and emotions? People who may appear completely normal, yet are calculating and cold.

References

Bernard Madoff Fast Facts. (2018, April 13). Retrieved from https://www.cnn.com/2013/03/11/us/bernard-madoff-fast-facts/index.html

Blair, R.J., (2008). The amygdala and ventromedial prefrontal cortex; functional contributions and dysfunction in psychopathy. Philos. Trans. R. Soc. Lond. B Biol. Sci. 363, 2557-2565.

Brandt, R. (2012, October 22). What Can Neuroscience Tell Us about Evil? Retrieved from https://www.technologyreview.com/s/407738/what-can-neuroscience-tell-us-about-evil/

Crocket, et.al, 2014. Harm to others outweighs harm to self

Coid J, Yang M, Ullrich S, Roberts A, Hare RD. Int J Law Psychiatry. 2009 Mar-Apr; 32(2):65-73.

Ermer, E., Cope, L.M., Nyalakanti, P.K., Calhoun, V.D., and Kiehl, K.A. (2012). Aberrant paralimbic gray matter in criminal psychopathy. J. ABnorm. Psychol. 121, 649-658.

Evidence for substantial genetic risk for psychopathy in 7-year-olds.*Viding E, Blair RJ, Moffitt TE, Plomin RJ Child Psychol Psychiatry. 2005 Jun; 46(6):592-7*

Feresin E (2009) Lighter sentence for murderer with ‘bad genes'. Nature doi:10.1038/news.2009.1050

Fontaine N, Viding E (2008) Genetics of personality disorder. Psychiatry 7: 137–141

Hare, R. (1991). Hare PCL-R. *MHS Assessments*.

Hare, R. D., Hart, S. D., Forth, A. E., Harpur, T. J., & Williamson, S. E. (1993). Psychopathic personality characteristics: Development of a criteria set for use in the DSM-IV antisocial personality disorder field trial. *DSM-IV Update*, Office of Research, American Psychological Association, January/February, (pp. 6-7).

Hosking, J.G., Kastman, E.K., Dorfman, H.M., Samanez-Larkin, G.R., Baskin-Sommers, A., Kiehl, K.A.,... Buckholtz, J.W. (2017). Disrupted prefrontal Regulation of Striatal Subjective Values Signals inPsychopathy. *Neuron, 95*(1), 221-229. doi:10.1016/j.neuron.2017.06.030

Hunter, P. (2010). The psycho gene. *EMBO Reports*, *11*(9), 667–669. http://doi.org/10.1038/embor.2010.122

Koenigs, M., Baskin-Sommers, A., Zeier, J., and Newman, J.P. (2011). Investigating the neural correlates of psychopathy; a critical review. Mol. Psychiatry 16, 792-799).

Mangan, D. (2018, April 18). Pharma bro Martin Shkreli is denied minimum security camp and sent to federal prison in New Jersey. Retrieved from https://www.cnbc.com/2018/04/18/pharma-bro-martin-shkreli-gets-sent-to-federal-prison-in-new-jersey.html

Martens, W.H. (2008). The problem with Robert Hare's psychopathy checklist: incorrect conclusions, high risk of misuse, and lack of reliability. *Medicine and law*, *27 2*, 449-62.

Molly J. Crockett, Zeb Kurth-Nelson, Jenifer Z. Siegel, Peter Dayan,Raymond J. Dolan Proceedings of the National Academy of Sciences Dec 2014, 111 (48) 17320-17325; DOI:10.1073/pnas.1408988111.

Pardini DA, Loeber R. Interpersonal and affective features of psychopathy in children and adolescents: advancing a developmental perspective. Introduction to special section. J Clin Child Adolesc Psychol. 2007;36:269–275.

Reull. (2017). Why psychopathic brains overvalue immediate rewards.

Sandoiu, A. (2017, July 09). What goes on inside the brain of a psychopath?

Spain, S. M., & Harms, P. D. (2014). A sociogenomic perspective on neuroscience in organizational behavior. *Frontiers in Human Neuroscience*, *8*, 84. http://doi.org/10.3389/fnhum.2014.00084

Stout, Martha. *The Sociopath next Door*. Broadway Books, 2005.

U.S. Department of Commerce. World Population Clock. Retrieved May 16, 2018.

Viding, E., McCrory, E., and Seara-Cardoso, A. (2014). Psychopathy. Curr. Biol. 24, R871-R874.