Detecting Emotion in Psychopathic Language:

Emotional Valence and Locus in Language Produced by Psychopathic Offenders

Honors Thesis

Presented to the College of Agriculture and Life Sciences, Social Science Program of Cornell University

In Partial Fulfillment of the Requirements for the
Research Honors Program

by

Robin Kornet

May 2007

Professor Jeff Hancock

Acknowledgements

I'd like to thank my research advisor, Jeff Hancock, without whom this research would not be possible. I am grateful for the wisdom and inspiration he has imparted throughout my studies at Cornell.

I'd also like to thank Michael Woodworth for providing the data for the study. Thank you to Rebecca Morrow for her help in coding the data for the present study. Thank you to Bruce Lewenstein for his insights and advisement throughout my years at Cornell. Thank you to Ms. Gabler for funding my research in memory of her husband, Fredric N. Gabler. Thank you to Don Viands for providing me with funding through the Hatch Grant.

I dedicate this thesis to my family, Mom, Dad and Allison, who have supported me throughout my Cornell education and have encouraged me to challenge myself throughout my studies.

Abstract

This study examined the presence of emotional references in psychopathic communication. The analysis in this study is on secondary data, consisting of 54 interviews conducted with psychopathic and non-psychopathic offenders. It was hypothesized that emotional differences in psychopathic and non-psychopathic communication will be evident in terms of frequency, emotional locus, and emotional valence. The results supported these predictions. Overall, psychopaths produced fewer emotional references in their language use. Compared to non-psychopathic controls, psychopaths produced significantly fewer emotional references indicating empathy for others. Of all emotional terms produced by psychopaths, a significantly higher proportion of the emotional terms were negative. The results of this study indicate that emotional variations are evident in psychopathic language production.

Hervey Cleckley once described psychopathy as “a convincing mask of sanity” (1941). Although psychopaths appear to be normal functioning human beings, research has identified psychopaths as individuals who are emotionally shallow and lack moral and ethical concern. The psychopathic personality is only evident through interaction and observation. Therefore, we can advance our understanding of how psychopaths’ perceptions shape their environment by identifying both obvious and subtle characteristics of their communication style. This understanding may also assist mental health professionals and forensic interrogators diagnose criminal psychopaths who pose a major threat to society. The objective of the present study is to examine the presence of emotion in the language use of psychopathic and non-psychopathic offenders. While research has studied specific traits exhibited by the psychopath, few studies have examined patterns of communication within psychopathic populations.

While there are several reasons for studying psychopathy, one of the most important is their propensity for crime. Psychopaths account for 15% to 25% of the federal offender population; therefore, psychopathy is an important risk factor for violence and recidivism (Woodworth and Porter, 2002). Porter, Birt and Boer (2001) found that psychopaths have been convicted of approximately 7.32 violent crimes compared to 4.52 violent crimes by non-psychopathic offenders (qtd in Porter and Woodworth, 2006). In order to prevent repeat offenders it is important to identify criminal psychopaths within the federal population.

Presently, the Psychopath Checklist – Revised (PCL-R), a criterion-based rating system, has emerged as the principal diagnostic tool for assessing psychopathy. The rating system identifies two distinct factors associated with the psychopathic personality. Factor 1 is identified by “affective interpersonal” components of the psychopathic personality; Factor 2 is identified

by “impulsive antisocial behavior” (Benning, Patrick, Hicks, Blonigen and Krueger, 2003 qtd in Fowles & Dindo, 2006). Studies have found that the PCL-R is a reliable tool for predicting criminal recidivism. Hart (1988) conducted a study of offenders; he reported that those who scored high on the PCL-R were four times as likely to repeat violent criminal acts compared to those who scored lower (qtd in Douglas, Vincent & Edens, 2006). Although the PCL-R is a reliable indicator of psychopathy, there are limitations to this approach. One of the major limitations is that in order to diagnose psychopathy reliably using the PCL-R, the individual needs to be interviewed. Scoring is based on both semi-structured interviews in conjunction with collateral data from institutional files and other sources; however, scores may be permitted based on collateral data and institutional files alone (Edens & Petrila, 2007). There is evidence suggesting that scoring without interviews is not as accurate as scoring with interviews (Hare, 2003 qtd in Edens & Petrila, 2007). Edens & Petrila (2007) attribute the lack accuracy to inadequate affective and interpersonal information available through collateral data and institutional files. It is clear that understanding the affective style of criminals during PCL-R assessments is instrumental in identifying criminal psychopaths. Because the interview method is not always used, and in order to conduct an interview the PCL-R examiner must have extensive training in scoring and administering the PCL-R (Edens & Petrila, 2007), it would be useful to have an implicit type of measure that can analyze the affective components of criminal communication without an interview.

Although definitions differ from one another, deficits in affect are central to most definitions of psychopathy. These differences however, can be useful in identifying key aspects of the psychopathic personality. Lykken (2006) describes psychopaths as individuals who fail to develop conscience and empathic concern for others due to an inherent psychological peculiarity

that makes socializing difficult. As a result of this peculiarity, psychopaths behave in ways that indicate indifference to punishment. Lykken (2006) also suggests that although psychopaths are often perceived as dangerous, "the peculiarity of the psychopath is not in itself evil or vicious […] but combined with an unusually hostile and aggressive temperament and lack of normal constraints result in an explosive and dangerous package." Similarly, Colemen (1956 qtd in Reiber and Vetter, 1996) defines the psychopath as an individual who "manifests a marked lack of ethical or moral development and an inability to follow socially approved codes behavior." Coleman stresses that the psychopath is not an individual who is mentally defective, neurotic or psychotic. Instead, psychopaths are aware of their actions but do not necessarily fear the consequences. Finally, Cleckley portrays the psychopath as "emotionally and interpersonally shallow and behaviorally irresponsible and unreliable" (Blackburn, 2006). Considered together, Lykken's description, Colemen's definition and Cleckley's conceptualization of the psychopathic personality paints a picture of the psychopath as an individual who appears to be a normal functioning human being yet suffers from a failure to pose empathic concern for others and lacks moral and ethical development.

The emotional deficiencies described by Lykken, Colemen and Cleckley contribute to the psychopaths' callous interpersonal style. Pardini (2006) describes callousness as a lack of empathy and guilt, which serve as the fundamental internal mechanisms for behavior control. He suggests that those who exhibit callousness are more likely to develop aggressive and violent behavior because they do not exhibit these personality traits (Pardini, 2006). In adults, the interpersonal callousness often results in deceitful, manipulative, selfish, superficially charming, remorseless and uncaring behavior (Obradovic et al., 2007). Many scientists suggest that deficiencies in moral, ethical and emotional judgments that lead to a callous interpersonal style,

may be attributed to underlying neurological dysfunctions. Using, psychophysiologic measures to explore the psychopath's emotional responses to pleasant and unpleasant stimuli, Herpertz et al., (2001) concluded that psychopaths compared to non-criminal control subjects show a weaker modulation of response magnitude. This included weaker facial expressions and lower autonomic responses to pleasant and unpleasant stimuli.

Furthermore, a study conducted by Blair et al., (1995) investigated the ability of psychopaths and non-psychopaths to attribute emotions to others. In Blair's Violence Inhibition Mechanism (VIM) model, he proposes that humans possess a mechanism that initiates a withdrawal in response to non-verbal communication of distress such as sad facial expressions and the sight and sound of tears (Blair, 1995). Blair attributes a lack of moral emotions and empathy in addition to propensity to commit acts of instrumental aggression demonstrated in psychopaths to an early dysfunction in the VIM. In his study, he examined emotional attributions made by psychopaths and non-psychopaths. His findings suggest that psychopaths have difficulty attributing moral emotions such as guilt (Blair, 1995).

Blair (2006) further attributes emotional dysfunctions in psychopathic populations specifically to deficiencies in the amygdala as this is the area of the brain that controls emotion. The amygdala serves as the primary neural system responsible for orchestrating an emotional response to fearful, sad and happy expressions (Blair, 2003 qtd in Blair, 2007). Studies have indicated that amygdala damage leads to a deficiency in expression recognition. This damage extends to recognition of fearful and sad expressions but rarely impairs happy expressions (Blair 2007). This may reflect the ease with which happy expressions are recognized within society (Blair, 2003 qtd in Blair, 2007). Although psychopaths do not have amygdala damage, they do

exhibit difficulties in recognizing fear and sadness. The similarity of emotion recognition in psychopaths and patients with amygdala damage has led psychopathy researchers to conclude that key characteristics of the psychopathic personality stem from deficiencies in the amygdala.

In a study conducted by Levenston et al., psychopaths and non-psychopathic controls were shown pictures with pleasant, neutral and unpleasant content (2000). Pleasant pictures depicted erotic or thrilling images. Neutral pictures depicted inactive people, kitchen utensils, appliances, buildings and plants. Unpleasant pictures depicted images of mutilation, and assault (Levenston, et al., 2000). The results of this study indicate that differences in startle reflexes during affective picture processing are most prominent when the images in the picture depict unpleasant images such as victim scenes. (Levenston, et al.,2000). Specifically, whereas non-psychopathic participants showed an increased reflex response, psychopaths did not show an augmented startle reflex following negative visual images. However, the results of this study indicate that psychopaths show a reduction in startle reflex following a positive visual prime which is comparable to the response exhibited by the control group. Therefore, emotional impairment in psychopaths is more marked for processing unpleasant visual images than pleasant visual images. Based on the findings reported by Levenston et al. (2000), Blair concludes that the absence of impairment in individuals with psychopathy for pleasant visual stimuli demonstrates a selectivity in amygdala impairment for the processing of punishment information as opposed to reward information (2007).

Amygdala impairment in processing empathy and punishment also contributes to the psychopath's elevated levels of a motor response, known as instrumental aggression. Instrumental aggression is referred to as proactive aggression that is purposeful and goal

oriented; it often causes distress and harm to others. Bandura (1983) describes instrumental aggression or "proactive violence" as violence that occurs when the injury of the target individual is secondary to the acquisition an external goal (qtd in Woodworth & Porter, 2002). One's ability to act in an aggressive way that has the potential to harm others in order to achieve a goal is often referred to as a failure of moral socialization. Normally, punishments associated with instrumental aggression and failure of moral socialization includes empathy for the victim; however, this emotional response is not exhibited amongst psychopaths (Eisenberg, 2002 qtd in Blair, 2006). As noted before, amygdala dysfunction interferes with the psychopath's ability to process sadness and victims' fear; Eisenberg (2002 qtd in Blair, 2006) suggests that this deficiency disrupts core emotional learning processes that are crucial for socialization.

Furthermore, Perry and Perry (1974) suggest that in aggressive individuals, pain cues reinforce the successfulness of one's aggressive behavior. Although Perry and Perry's research does not directly explore the implications of aggression in psychopathy, the study does examine aggression in young children who exhibit aggressive, anti-social behavior. Psychopathy is not diagnosed until an individual is 18 years old; therefore, the behaviors of the subjects may be a risk factor for future adult psychopathy. The study concluded that that pain cues escalate the intensity of an act in aggressive children. Specifically, Perry and Perry found that low pain cues produced greater aggression than high pain cues in high aggressive boys but not in low aggressive boys (1974). Consistent with this finding, Miller and Eisenbergn(1988) explored the role of empathy in the reduction of negative behavior. Miller and Eisenberg's findings suggest that although pain cues normally result in a reduction of negative behavior because of the desire to improve the other's condition and to rectify harm, individuals prone to aggression do not

exhibit the same reactions. Results indicate that aggressive behavior is negatively related to empathy in aggressive individuals (Miller & Eisenberg,1988).

An important question is whether the psychopath's lack of emotional judgments and empathic concern is evident in their language production. Previous studies examining psychopathic language variations suggest that psychopaths display language abnormalities related to the processing of connotation, affect, abstract meaning and metaphor. This is evident in a recent study reporting that "incarcerated psychopaths do not understand or make effective use of the emotional content of language" (Hare, Williamson and Harpur 1988 qtd in Hiatt, Newman, 2006). These findings were demonstrated in a study where psychopaths and non-psychopaths were asked to group two words in a triad that were most similar in meaning. Psychopaths were able to group words on the basis of denotation and literal meaning however they exhibited more sorting errors on emotional metaphor Q-sort tasks. The results of this study are suggestive of cognitive deficiencies exhibited amongst psychopathic populations.

The poor integration of affective components of language may be attributed to impaired interhemispheric communication or inefficient distribution of processing resources (Hare, Williamson and Harpur, 1991 qtd in Blackburn, 2006). In an earlier study conducted by Williamson, Harpur and Hare (1991), psychopaths performing a lexical decision task failed to show "normal reaction time facilitation for emotional words, indicating poor accommodation of unexpected affective information" (qtd in Hiatt and Newman, 2006). While both of these studies suggest that psychopaths display some difficulty in *processing* emotion in language, to the best of our knowledge, no studies have examined how emotion is represented in language *produced* by psychopaths.

The Present Study

The purpose of this study was to determine whether emotional variations in language content can be found among incarcerated psychopathic and non-psychopathic offenders and whether detected differences can be used to identify psychopathy in criminals. In particular, emotional differences amongst psychopathic and non-psychopathic offenders will be evident in terms of 1) frequency, 2) emotion locus, and 3) emotion valence.

A deficit in emotional judgment has been identified as one of the key personality traits demonstrated in psychopaths. Several pieces of evidence suggest that this deficit is evident in the psychopath's processing ability. Specifically, Herpetz et al., (2001) concluded that psychopaths demonstrate weaker facial expressions and low autonomic responses to pleasant and unpleasant stimuli. Furthermore, studies conducted by Blair indicate that psychopaths have amygdala deficiencies which hinder their emotional processing ability. Finally, in terms of linguistic processing, two studies conducted by Williamson, Harper and Hare found that psychopaths have difficulty processing the meaning of emotional terms (1988;1991 qtd in Haitt & Newman, 2006).

Considered together, because psychopaths have difficulty processing and accessing emotional terms, they should have difficulty communicating them. If this is the case, psychopaths should produce less emotional terms overall than non-psychopathic controls. Thus, hypothesis one predicted that the frequency of emotional references in psychopathic communication should be fewer than non-psychopathic communication.

H1: Emotional references should be less frequent in psychopathic communication, compared to controls.

A second objective of the present student was to explore the locus of emotional references in psychopathic communication. Recall that Lykken (2006) describes psychopaths as individuals who fail to develop conscience and empathic concern for others due to an inherent psychological peculiarity. Additionally, studies examining neurological characteristics of the psychopathic personality have concluded that psychopaths have difficulty recognizing emotions in others due to amygdala deficiencies (Blair, 2006). Furthermore, Blair suggests that psychopaths demonstrate a lack of moral emotions as a result of an early dysfunction in the VIM (1995).

Considered together, hypothesis two predicts that because psychopaths have difficulty recognizing emotions in others, psychopaths should be less likely to produce language representing the emotional state of the crime victim and others involved in the murder given that a central characteristic of psychopathy is low empathic ability.

H2: Given that a central characteristic of psychopathy is low empathic ability, psychopaths should produce fewer emotional references representing the emotional state of the crime victim and others involved in the offense.

The final objective of the present study was to explore the valence of emotional references produced by psychopathic offenders. Based on Levenston's study (2000) and Blair's interpretation of this study (2007), amygdala impairment in psychopaths is less marked for pleasant visual stimuli. One interpretation of this conclusion in terms of language production may be that psychopaths will produce positive emotional references more frequently than negative emotional references.

In contrast, another interpretation in terms of language production is that language will track closely with behavioral patterns. Since psychopaths' externalizing behavior tends to be negatively oriented, as a result of their callous interpersonal style and aggressive disposition, another prediction may be that emotional references will be negatively oriented as well.

Two contrasting hypotheses were proposed based on these perspectives of emotional processing in psychopaths. The first hypothesis predicts that psychopaths will produce positive emotional references more frequently than negative emotional references as a result of the selectivity of amygdala impairment in psychopathic populations. In direct contrast, the second hypothesis predicts that psychopaths will produce negative emotional references more frequently than positive emotional references because language will track the negatively oriented behavioral patterns demonstrated by psychopaths.

H3a; Because amygdala impairment is less marked in the processing and recognition of positive emotions, psychopaths should produce positive emotional references more frequently than negative emotional references.

H3b; Since externalizing behavior demonstrated in psychopathic populations is negatively oriented, psychopaths should produce negative emotional references more frequently than positive emotional references considering that language tracks closely with behavior.

Methods

Participants

The data in the present study is secondary data originally collected in 2000 for a study conducted by Woodworth and Porter. The participants are composed of individuals incarcerated in one of two federal institutions; one is located on the west coast of Canada, in British Columbia, and the other is located on the east coast, in Nova Scotia. Both institutions are medium security prisons. The participants include 38 non-psychopathic and 16 psychopathic offenders who have been convicted of at least one homicide.

Materials

The inmates were interviewed and asked to discuss their memory of the most recent homicidal offense that they have been convicted of. Inmates were initially asked to recall their memory of the murder, although the transcripts also include follow up questions administered by the interviewer. Responses varied in length and detail due to the open nature of the interviewer's initial question. The average word count per interview was 2,470.11 words. The overall length of responses ranged from a single page to 21 pages, and included both the interviewers' questions and the prisoner's answers.

Some participants recalled specific details of the event, such as the time of day and the location in which the offense took place. For example, one participant begins to recall the event by stating, "It all started on Monday, oh wait no sorry, on Sunday morning. I left my house in Saint John and ran into my ex-girlfriend who was my roommate at the time." Participants often attributed their own violent behavior to drug and alcohol abuse. One participant described the event leading up to the murder as follows: "I wanted to see her and, I was, uh on cocaine, nineteen, nineteen grams of cocaine that night. I went to see her and she was in the room with two guys, and I got upset with her, got upset." Several participants also discussed their motive

for the offense. One participant described his motive to be the acquisition of money. His initial response to the interviewer's first question is as follows:

> "Uh at closing time, I would escort the head waitress to the bank to deposit the nightly deposits. Uh on the night in question, I pulled out a gun and had her drive off to a secluded area. Uh at which time I cut open the deposit bag, and went through it, destroyed the, uh the checks, and all the paperwork, and pocketed the cash. I had a struggle with the victim and uh lost the gun, and I attacked her. She attempted to flee, I assaulted the victim, uh moderately, and pulled out the knife, and proceed to sexual assault her. Drove five miles to another location and strangled her. Drove about another twenty miles or so, dumped a car in the lake, called a cab and went home."

Some participants had a relationship with the victim and discussed their motives for murdering the victim based on this relationship. For example, one participant begins with the following.

> "Uh I quit drinking. I was sexually abused by this fellow when I was young, and for years, I drank to escape it. And I quit drinking and memories started to come back of what happened, and uh, I thought, you know, I was wise enough to know, uh how to handle myself, so I thought I'd tell him what I thought, what he did to me during the rape."

Several participants described violent sexual acts before committing the offense. For example, one participant describes:

> "So I took her to the, this wooded area about a hundred yards from the path, and uh, proceeded to get her to take her clothes off. I raped her, and uh and then I heard some people coming along the path and I didn't want her to scream out so I put her in a chokehold."

Coding

Content analysis was used to examine in detail the emotional content of each transcribed interview. The unit of analysis was an emotional term spontaneously produced by the offender. Therefore, in the quotation, "I started to become fearful," the unit of analysis is the word "fearful."

Each emotional term was given two code types examining emotional locus and emotional valence (See Appendix A and Appendix B). Emotional locus may be defined as the target of the specified emotion (See Appendix B and Appendix C). Therefore, the locus code identifies who is experiencing the emotion. For example, in the quotation above, the offender states, "I started to become fearful." The locus code of this emotional term would be "self," because the offender suggests he experienced the emotion, fear. The locus code "other" was assigned when the participant perceived an emotion in another person. In the quotation "my wife is very angry with me," the participant describes the emotion, anger, as this is the emotion he perceived his wife to be feeling at the time of the offense.

The code emotional valence identified the charge of each emotional term (See Appendix B and Appendix D). Each emotional term that was coded for emotional valence was assigned one of four codes: "positive," "negative," "neutral" or "absence of emotion." Valence of emotional terms was determined by the intrinsic meaning of the emotional word, and/or the context in which the term was described. In the quotation, "They failed, I succeeded. I was, you know, elated," the unit of analysis was the term "elated." This would be an example of a valence code type that was assigned a "positive" code. An example of a "negative" code is evident in the quotation above, "I started to become fearful." The negative term is the emotion, "fear." In both of these examples, the intrinsic meaning of the emotional term indicates the term's valence. When coding neutral emotions, identifying the context in which the emotion is experienced in is important. For example, in the following quotation the unit of analysis is the emotional term "stunned."

> "And like I was down in the valley and I looked up on the hill and I seen three police officers and the dog. I didn't run, I just sat there. (Inaudible) stunned, I, I don't know, I

> was very like in and out of world. I didn't seem to be in the same world as everybody else.

In the context of the sentence, it appears that the emotion "stunned" does not carry a positive or negative valence; therefore, the "stunned" is assigned a "neutral" code. Similarly, the code "absence of emotion" also requires the raters to consider the context of the emotional term. The "absence of emotion" code was created for instances in which the valence of the emotional term has been negated. An example of this would be when the offender says "I wasn't scared." Alone, the emotional term "scared" would be considered to have a negative valence. However, because the participant suggested he "wasn't scared" the negative valence of the term has been negated.

In order to determine whether the psychopath's low empathic ability is evident in language production an additional locus code type, "emotional apprehension," was created. Empathy is an emotional response that stems from the apprehension or comprehension of another's emotional state (Eisenberg, 2006). For the purposes of this paper, we will be focusing specifically on the way one's apprehension of another's emotional state is communicated through language. "Emotional apprehension" was assigned in addition to the locus code, "other." An example of this code type is evident in the quotation "I was trying to tell the guy to leave, and he's a big fellow and the wife was getting scared." The unit of analysis is the emotional term "scared." The term is assigned the locus code, "other" and the code "emotional apprehension," because the individual described is scared in response to another individual's actions.

Because the literature suggests that psychopath's lack of empathic ability extends mainly to fear and sadness, a final code type was created to determine whether the psychopath communicates a general lack of empathy or if their lack of empathy for specific emotions is evident in their language production. The code, "apprehension: fear and sadness," was assigned

for instances in which the emotional state of another is identified as a fearful or sad emotion. An example of this code type is evident in the quotation, “the store clerk was frightened to death because I was covered in blood.” Here, the unit of analysis of the emotional term “frightened.” The term frightened is assigned the locus code “other,” because the store clerk is experiencing the emotion. It is also assigned the code “emotional apprehension,” because he is frightened in response to the blood covering the offender. Finally it is also assigned the code, “apprehension: fear and sadness,” because the emotional term frightened indicates fear.

Interrater Reliability

Two raters individually coded all transcribed interviews. Coders were blind with respect to subject identification and PCL-R classification. Interrater reliability was assessed after coding 10 interviews, 35 interviews and the final 54 interviews. Cohen’s kappa was used to assess the agreement of the two coders. Common guidelines for acceptable kappa scores are as follows. Below .40 is considered poor, between .40 and .59 is considered fair, between .60 and .74 is considered good. Above .74 is considered excellent (Cicchetti & Sparrow, 1981 qtd in Woodworth & Porter, 2002).

After all documents had been coded, interrater reliability of all documents was assessed (see Appendix E). After this first phase of coding, any categories with a kappa score below .60 were discussed and the coding scheme was revised. In the second phase of the coding all kappa scores fell above a .60 with the exception of the code “absence of emotion.” The kappa score for this code was .58. Given that this code was not central to the hypotheses reported here the analysis proceeded.

Results

Selection

A total of 54 participant interviews were coded and transcribed. Participants were considered eligible for the final analysis based on two criterions. First, participants must produce more than 500 words. Two participants were taken out of the sample because they produced less than 500 words. Second, eligible participants must speak about their memory of the committed offense during the interview. Two participants were eliminated from the sample because they could not recall the actual murder; therefore, they could not discuss the offense or the events that led up to the offense. One participant was under the influence of narcotics which blacked out his memory of the event. The second participant indicated that he was having a dream when the murder occurred. When the offender woke up, the victim was dead. Below is an excerpt from this participant's interview.

> "I dreamt I was a lion […].I see, not me, the lion sees this antelope, I remember who I thought was an antelope, I seen an antelope and I remember I thought to myself, now you're supposed to go out and capture this antelope, so I run along and I grabbed it by the throat and I shook it and I remember looking down and I seen it's legs shaking I guess it was the death roller something or the nerves, and I remember reaching out with my paw, or the lion reaching out with his paw and clamping down on him, doing something to make it stop. Anyway, that was it, and I, the next thing I woke up, back in my room and I don't know how but I was drenched in blood and the next thing I knew he came and arrested me for murder and there was a man on the floor dead with over fifty wounds on him"

Once participants were eliminated based on the two criteria, 50 participants were included in the sample for analysis; 14 participants were psychopaths and 36 were non-psychopaths.

Further, there were some instances in which the interviewer prompted an emotional response from a participant. An example of this would be when an interviewer asks, "how were

you feeling at the time?" Or "how do you think the victim was feeling at the time." Since the emotional references produced in response to these questions were not spontaneous, responses to these questions were eliminated.

Presence of all Emotional Terms in Language

The first step in the analysis process was to explore the total number of emotional references present in psychopathic and non-psychopathic communication. Recall that hypothesis one predicted that psychopaths would produce less emotional terms overall than non-psychopathic controls. To examine this, the sum of all emotional references that were assigned a locus and valence code was calculated. A t-test was performed in order to determine the validity of this hypothesis. As predicted by hypothesis one, psychopaths (M=5.80, SD =7.18) produced significantly less emotional terms overall than controls (M=12.46, SD 14.71), t (47) = -2.15, p <.05, suggesting that psychopaths use less emotional references in their language than non-psychopaths (See Table 1).

Locus of Emotional Terms in Language

Hypothesis two predicted that psychopaths will be less likely to produce language representing the emotional state of the crime victim and others involved in the murder. To examine this hypothesis, the sum of all valence terms that were assigned the locus code of other was calculated. A t-test was performed in order to determine the validity of the second hypothesis. Results of this analysis indicate that controls (M=72.67, SD = 24.22) did not produce significantly more terms representing another's emotional state than psychopathic participants (M=67.23, SD =34.1072), t (47) =.644, p > .05, suggesting that psychopaths did not produce less

emotional references representing the emotional state of another involved in the crime than non-psychopathic offenders (See Table 2). Hypothesis two was not supported.

One potential issue with the previous locus analysis is that it included all emotional references that referred to another's emotional experience. For example, general positive and negative forms of emotional references related to others were included in that analysis. However, in the literature, it is clear that psychopaths are limited primarily in their *empathic* abilities, which is more specific than simply self versus other emotional reference. Given that a central characteristic of the psychopathic personality is low empathic ability, a second analysis focusing on this specific form of emotional reference was conducted.

Recall that differentiation between a term that represents another and a term indicating a sense of empathy was determined by situational and state characteristics of the identified emotion. Given that empathy is a response emotion (Eisenberg, 2006), empathic emotions were identified when the emotion of another was situational or a response to a stimulus. The sum of all emotional terms assigned the code emotional apprehension was calculated. As predicted, psychopaths (M = .533, SD = .74) produced significantly less emotional terms indicating the apprehension of another's situational emotions than controls (M= 1.5, SD = 2.25), $t(48) = -2.43$, $p < .05$, suggesting that psychopaths produce less emotional terms indicating empathy than non-psychopaths.

An additional t-test was conducted to explore whether psychopaths produce less empathic emotions pertaining to fear and sadness. There was no difference in the production of these emotions between psychopaths (M=.27, SD =.59) and controls (M=.60, SD =1.12); however

since the sample size of empathic references indicating fear and sadness was very low, this effect may have been constrained by a floor effect (See Table 3).

Valence of Emotion Terms

The final objective of the present study was to examine the valence of emotional references. The first hypothesis predicted that psychopaths would produce more positive emotional references given the selectivity of their amygdala impairment. The second hypothesis predicted that psychopaths would produce more negative emotional references given that language production should be similar to outward behavior.

Of all emotional references that were produced in psychopathic communication, psychopaths (M=.88, SD = .17) produced a significantly higher proportion of negative emotional terms than controls (M=.71, SD =.31), t (41.96) = 1.92, p <.05. This suggests that of all the emotional terms produced by psychopaths, a higher proportion of the emotional terms were negative compared to controls.

A t-test analysis was also performed in order to determine how frequently positive emotional terms were referenced in psychopathic communication. Of all emotional references that were produced in psychopathic communication, non-psychopaths (M=.16, SD = .24) produced a higher proportion of positive emotional terms that was marginally significant compared to psychopaths (M= .06, SD = .10) t(46.79) = -1.42, p = .059. This suggests that of all emotional terms produced by psychopaths, a lower proportion of the emotional terms were positive compared to controls. There was no difference in the production of neutral terms between psychopaths (M=.47, SD =.92) and controls (M=1.26, SD= 2.15). Considered together,

these data suggest that psychopathic emotion usage was more negatively valenced overall than controls (See Table 4).

Finally, a 2 (locus: self versus other) x 2 (PCL-R Classification: psychopath versus non-psychopath) mixed analysis of variance (ANOVA) was conducted to determine whether there was an interaction effect between locus and valence. Of the negative emotional references produced, psychopaths (M = .65, SD = .32) produced a higher proportion that were about themselves than non-psychopaths (M=.48, SD = .30); however, this difference was not significant. This analysis did not reveal an interaction effect, F (1,45) = 1.90, p = 1.8.

Discussion

The present study investigated the frequency, locus and valence of emotional references in psychopathic communication by examining transcribed interviews of psychopathic and non-psychopathic offenders. While previous studies have explored the processing of emotional language, the present study was the first to examine emotion in language produced in psychopathic populations.

Presence of Emotional Terms in Language

The first hypothesis of this study predicted that psychopaths would produce emotional references less frequently than controls. Supporting this hypothesis, when asked to recall the events of the homicidal offense, the results reveal that psychopaths produced significantly fewer emotional references than controls. While the data suggests that psychopaths were able to produce some emotional references, the results reveal that psychopaths produced approximately half as many emotional references during interviews than controls.

A number of theoretical interpretations are consistent with these results. First, considering definitions derived from the research of Lykken (2006), Coleman (1956 qtd in Reiber & Vetter, 1996) and Cleckley (1976 qtd in Blackburn, 2006), the psychopath may be described as an individual who appears to be a normal functioning human being yet suffers from a failure to exhibit empathic concern for others and lacks emotional, moral and ethical development. While there are several factors that contribute to the psychopathic personality, a deficit in affect is central to most definitions.

Second, our results for this hypothesis support empirical studies conducted by researchers such as Herpertz et al., (2001) and Blair (2006; 2007) who reveal that deficiencies in emotional processing stem from neurological deficiencies, or more specifically from deficiencies in the amygdala. Further, consistent with the findings for the present study, two studies conducted by Williamson, Harpur and Hare (1988; 1991) revealed that psychopaths exhibit sorting errors on emotional metaphor Q-sort tasks and fail to show normal reaction times during lexical decision tasks for emotional words (qtd in Hiatt & Newman, 2006). The present data extend this language deficiency regarding emotions to the *production* of language.

Locus of Emotional Terms in Language

The second hypothesis of the present study predicted that psychopaths should produce fewer emotional references representing the emotional state of another. An initial analysis of locus revealed that psychopaths and controls do not differ with regard to the frequency of references representing the emotional state of the crime victim or others involved in the offense. One possible interpretation for this result may be attributed to the callous interpersonal style demonstrated by psychopathic populations. Recall that Obradovic et al., (2007) described

callousness to result in deceitful, manipulative, selfish, superficially charming, remorseless, and uncaring behavior. As a result of these behavioral characteristics, specifically with regard to the deceptive, manipulative and superficial disposition, psychopaths may be able to "fake" an understanding of others' emotional abilities through verbal communication.

However, a more in-depth analysis was performed in order to determine whether the frequency of emotional references produced by psychopaths extends to emotional references that demonstrate empathic ability. The first level of analysis for the second hypothesis assessed all "other" locus emotional references and did not differentiate between "other" and empathy. This second level of analysis measuring empathic emotions in psychopathic communication revealed that psychopaths produce less emotional references indicating empathy compared to controls.

The low frequency of empathic references in psychopathic communication suggests that a deficit in empathic processing is evident in linguistic production. Consistent with the theoretical implications of Blair's VIM model (Blair et al., 1995), psychopaths failed to produce emotional references that indicated another's distress; thereby, demonstrating a deficiency in verbally communicating moral emotions. Further, another study conducted by Blair (2006) suggests that psychopaths have difficulty recognizing emotions indicating fear and sadness due to amygdala deficiencies. In the present study, expressions of fear and sadness were often assigned an "emotional apprehension" code. Therefore, consistent with Blair's findings, the present study revealed that a deficit in expression recognition for specific emotions is evident in the language production of psychopaths as well.

Valence of Emotional References

The final objective of the present study was to examine the valence of emotional references present in psychopathic communication. Recall that two opposing hypotheses were proposed. The first hypothesis (H3a) predicted that because amygdala impairment is less marked in the processing and recognition of positive emotions, psychopaths should produce positive emotional references more frequently than negative. In contrast to this hypothesis, the second hypothesis (H3b) examining valence predicted that linguistic production should track closely with externalizing behaviors; therefore, psychopaths should produce negative emotional references more frequently than positive because psychopathic behavior tends to be negatively oriented.

Inconsistent with the hypothesis H3a, proposed based on a study conducted by Levenston et al., (2001), the results of the present study reveal that psychopaths do not produce positively oriented emotional references more frequently than negative. In fact, controls produced a higher proportion of positive emotional references than psychopaths. This result was marginally significant. The lack of support for the former hypothesis may be due in part to the nature of the events discussed. Because participants were asked to recall their memory of an event that involved murder, emotions at the time are inherently negative. Nonetheless, both psychopaths and controls discussed their murders, suggesting that the stories should be equally negative in their emotional tone.

The data are more consistent with the hypothesisH3b, with the coding suggesting that emotional references produced by psychopathic offenders tend to be more frequently negatively oriented than controls. These results are consistent with a number of theoretical interpretations and empirical studies exploring instrumental aggression in psychopathic behavior. Specifically,

Bandura (1983 qtd in Woodworth & Porter, 2002) and Eisenberg (2002 qtd in Blair, 2006) suggest that a lack of empathy is often the result of instrumental aggression and failure of social moralization in psychopaths. As a result, psychopaths tend to exhibit violent behavior that is goal oriented. Furthermore, Perry and Perry (1974) indicate that when a victim is not perceived to be experiencing pain, aggressive behavior increases in individuals prone to aggression. Although these studies do not address language production, it is not surprising that production of emotional references coincide with their behavioral patterns.

Limitations

The present study had a number of limitations. First the sample size was small and had an uneven sample of psychopaths and controls. These participants however were comparable in that they have been convicted of an offense that has led to confinement in a medium security prison. A second limitation regards the use of secondary data. Because the interviews were not conducted for the purposes of the present study, responses to interviewer questions that prompted an emotional response had to be eliminated.

Implications

The results of the present study reveal that variations in language content can be found between incarcerated psychopaths and non-psychopathic controls. The findings with regard to frequency of emotional references, locus and valence suggest that language variations can be detected and possibly used to identify psychopaths in criminal settings, which may prove to be particularly useful for mental health professionals and forensic interrogators.

The enterprise of analyzing characteristics of the way psychopaths communicate is important for advancing our understanding of how their deficient emotional perceptions guide their behavioral tendencies. Based on the results of hypothesis H3b, it is important to question why psychopaths produced negative emotional references more frequently than positive. Considering the nature of the event described, it would be expected that one should experience mainly negative emotions. With this in mind, given that psychopaths are often regarded as highly skilled manipulators as a result of their callous interpersonal style, it may be that psychopathic offenders were not actually experiencing these emotions, but were merely mimicking the emotions they thought they should be experiencing at the time of the offense in order to deceive the interviewer. Interestingly, the valence of emotional references in non-psychopathic communication revealed complex emotional experiences. There were a higher proportion of positive emotional references present in non-psychopathic communication which was marginally significant compared to psychopathic participants. Negative and neutral emotions were present in communication as well. It may be that controls were verbalizing their true emotional experience at the time which included a complex array of emotions; whereas psychopaths were only able to verbalize emotions in a simple and obvious way.

The same may be true for the psychopath's ability to produce references representing the emotional state of the crime victim and others. The results of the present study reveal that psychopaths and controls do not differentiate in the production of general emotional references that represent the emotional experience of another. This also may be that given the psychopath's manipulative, superficial and deceitful personality traits, they are able to communicate a fake understanding of another's emotional disposition in order to convince others that they are normal

functioning human beings. However, they do demonstrate a deficiency in communicating complex interpretations of another's emotional state that is responsive to environmental stimuli.

The implications of these finding may be that psychopaths communicate the "convincing mask of sanity" described by Cleckly in 1941, by presenting themselves as individuals who feel and perceive appropriate emotions during events that normally tend to be emotionally charged. In order to determine whether psychopaths are actually processing the emotional references they produce, future research could examine both processing of emotional stimuli and production of emotional references simultaneously. A review of the literature revealed that the methods such as linguistic processing examinations (Williamson, Harpur, Hare, 1988: 1991 qtd in Hiatt & Newman), psychophysiological measures (Herpertz, et al., 2001), measures of reflex potential (Levenston et al., 2000) were used in order to measure emotional processing in psychopathy. Research using these methods in conjunction with the methods used in the present study might advance our understanding of how closely linguistic production of emotional references model emotional processing.

As mentioned previously, understanding verbal communication patterns has significant implications for mental health professionals and forensic interrogators. The present study is the initial step in a program of research designed to identify psychopaths through verbal communication. The goal of future studies in this program will be to use methods and findings of the present study to create a linguistic analysis program that would be able to determine subtle linguistic cues that may be difficult for professionals to determine using the PCL-R checklist. Because psychopaths exhibit high rates of criminal recidivism, it is important that the most reliable tools for diagnosing psychopathy are available. An implicit type of measure that

examines the frequency, valence, locus, and apprehension of emotional instances would be useful in identifying affective and interpersonal components that are characteristic of psychopathic offenders.

A measure that examines subtle linguistic cues may also have implications on how criminals are treated within the legal system. Because psychopaths pose a dangerous threat to society, it is important that mental health professionals and forensic interrogators use the most reliable tools for diagnosis. In the United States an offender may not be released without showing that he will not be dangerous in the future (Edens & Petrila, 2007). Having an implicit measure will be useful in determining this.

Further, the ability to analyze the language of psychopaths has particular value in computer mediated contexts such as Facebook.com and MySpace.com. Both of these companies have been sued recently for not doing enough to protect their clients, especially children from psychopaths and other types of predators. If the language of psychopaths can be automatically analyzed, it may be possible to identify them in online contexts, and prevent future instances of predation. Future studies could explore whether the analysis in the present study can be used to examine psychopathy in written language produced through computer-mediated-communication. However, a number of ethical concerns may be raised if a linguistic analysis program is used to identify psychopaths without probable cause of a crime.

Conclusion

The primary goal of the present study was to determine whether subtle linguistic cues can be used to identify criminal psychopaths. The present study is the first to examine the production

of emotional references in psychopathic communication. An analysis of 14 psychopathic and 36 non-psychopathic offenders reveals that psychopaths differ in their production of emotional references in terms of frequency, empathic ability and valence. These results shed light into the fundamental characteristics of psychopathic communication. By understanding their communicative ability, we may improve our understanding of how they maintain “a convincing mask of sanity” (Cleckley, 1941).

References

Blackburn, R (2006). Other Theoretical Models of Psychopathy. In C. J. Patrick (ed.) *The Handbook of Psychopathy*. (pp.35-37). New York, USA: Guilford Press.

Blair, R.J.R., Sellars, C., Strickland, F., Clark, F., Williams, A.O., Smith, M., &Jones, L. (1995). Emotion Attributions in the Psychopath. *Personality and Individual Differences, 19.* 431-437.

Blair, R.J.R (2006). Subcortical Brain Systems in Psychopathy: The Amygdala and Associated Structures. In C. J. Patrick (ed.) *The Handbook of Psychopathy.* (pp.296-312) New York, USA: Guilford Press.

Blair, R.J.R. (2007). Emphathic dysfunction in psychopathic individuals. In T. Farrow and P. Woodruff (eds.) *Empathy in Mental Illness* (pp. 3-16). Cambridge, UK: Cambridge University Press

Douglas, K.S., Vincent, G.M. & Edens, J.F. (2006). Risk for Criminal Recidivism: The Role of Psychopathy. In C. J. Patrick (ed.) *The Handbook of Psychopathy* (pp. 533-554). New York, USA: Guilford Press.

Edens, J.F. & Petrila, J. (2007) Legal and Ethical Issues in the Assessment and Treatment of Psychopathy. In C. J. Patrick (ed.) *The Handbook of Psychopathy* (pp.573-588) New York, USA: Guildford Press.

Eisenberg, N. (2006) Emotion, Regulation and Moral Development. *The Annual Review Psychology, 51,* 665-697.

Fowles, D.C., & Dindo, L (2006) Dual Deficit Model of Psychopathy. In C. J. Patrick (ed.) *The Handbook of Psychopathy*. (pp. 14-34) New York, USA: Guilford Press.

Herpertz, S.C., Werth, U, Lukas, G., Mutaz, Q, Schuerkens, A, Kunert, H.J., Freese, R., Flesch, M., Mueler-Isberner, R., Osterheider, M., & Sass, H.(2001) Emotion in Criminal Offenders with Psychopathy and Borderline Personality Disorder. *Archives of General Psychiatry, 58. 737-745.*

Hiatt, K.D. & Newman, J.P. (2006) Understanding Psychopathy: the Cognitive Side. In C. J. Patrick (ed.) *The Handbook of Psychopathy.* (pp. 334-352) New York, USA: Guilford Press.

Levenston, G.T., Patrick, C.J., Bradley, M.M. & Lange, P.J. (2000) The Psychopath as Observer Emotion and Attention in Picture Processing. *Journal of Abnormal Psychology, 109,* 373-385.

Lykken, D. T. (2006).Psychopathic Personality; The Scope of the Problem. In C. J. Patrick (ed.) *The Handbook of Psychopathy*. (pp. 3-13) New York, USA: Guilford Press.

Miller, P. & Eisenberg, N. (1988). The Relation of Empathy to Aggressive and Externalizing/Antisocial Behavior. *Psychological Bulletin, 103,* 324-344.

Obradovic, J., et al., (2007). Measuring Interpersonal Callousness in Boys from Childhood to Adolescence: An Examination of Longitudinal Invariance and Temporal Stability. *Journal of Clinical Child and Adolescent Psychology, 36,* 278-292.

Pardini, D.A. (2006). The Callousness Pathway to Severe Violent Delinquency. *Aggressive Behavior, 32,* 590-598.

Perry, D.G. & Perry, L.C. (1974). Denial of Suffering in the Victim as Stimulus to Violence in Aggressive Boys. *Child Development, 45,* 55-62.

Porter, S. & Woodworth, M. (2006). Psychopathy and Aggression. In C. J. Patrick (ed.) *The Handbook of Psychopathy*. (pp. 481-494) New York, USA: Guilford Press. 481-494

Rieber, R.W. & Vetter, H. (1994). *The Psychopathology of Language and Cognition*. New York: Plenum Press.

Woodworth, M. & Porter, S. (2002). In Cold Blood: Characteristics of Criminal Homicides as a Function of Psychopathy. *The Journal of Abnormal Psychology, 111,* 436-445.

Appendix A

Examples of Emotional References in Psychopathic Communication

Locus and Valence	**Examples**
Positive/ Self	"I figured everybody would be so *glad* that he's gone that, uh at least he could borrow the money to pay for it." "I remember feeling a wave of relief."
Negative/Self	"Myself I was *scared shitless*." "I was just, starting to get a little bit *agitated*."
Neutral/Self	"I saw blood coming down his face and I went into *shock*." "I felt *obligated* to go over and do it, for no reason, like he didn't have to die."
Absence of Emotion/Self	"I wasn't really *scared* at first." "Do you feel it normal to kill somebody and *not feel anything*?"
Positive/Other	"The person was a transvestite. It fell in *love* with me when I got out." "If I had a bat or a knife someone might feel *brave*."
Negative/Other	"She *hated* me and her friend hated me so much that she'd probably try and kill me rather than help him." "I sped up and apparently that was too fast because now he's *freaking out*."
Neutral/Other	"Well they were, *dumbfounded*." 'I think he went into *shock*."
Absence of Emotion/Other	"And her mother was very *aloof*." "She wasn't *scared* at first."

Note: Italicized terms = unit of analysis

Appendix B

Coding Scheme Analyzing Emotional Content

Follow the steps below to code emotional references in transcribed interviews. The unit of analysis here is an emotional term spontaneously produced by interviewee. Each unit of analysis will be assigned two code types. Locus identifies the target of the specified emotion. Valence identifies the charge of the emotional term.

Step One: Identify valence of emotional reference

Valence Code Type	**Properties of Code Type**	**Examples**
Positive	Reference describes a pleasant emotional experience.	"I figured everybody would be so *glad* that he's gone." "I remember feeling a great *relief* that he wasn't dead."
Negative	Reference describes an unpleasant emotional experience.	"She hated me." "I was worried about a great evil."
Neutral	Reference describes neither a pleasant or unpleasant emotional experience.	"I was in absolute *shock*, and it was like, they were escorting me but I was, uh there but I wasn't there." "I was *content.*"
Absence of Emotion	Reference is negated, indicating a lack of emotion during the experience.	"There was no *anger* involved." "I honestly didn't *care.*"

Note: Italicized terms = unit of analysis

Step Two: Identify locus of emotional reference

Locus Code Type	**Properties of Code Type**	**Examples**
Self	References that describe participant's personal emotional experience	"I was so *frustrated* with him and so desperate to get rid of him." "I was really *relieved* to leave the house."
Other	References that are perceived by the participant to be experienced by another.	"She was *jealous*." "She ran all the way down the hill in a *frantic state.*"

Note: Italicized terms = unit of analysis

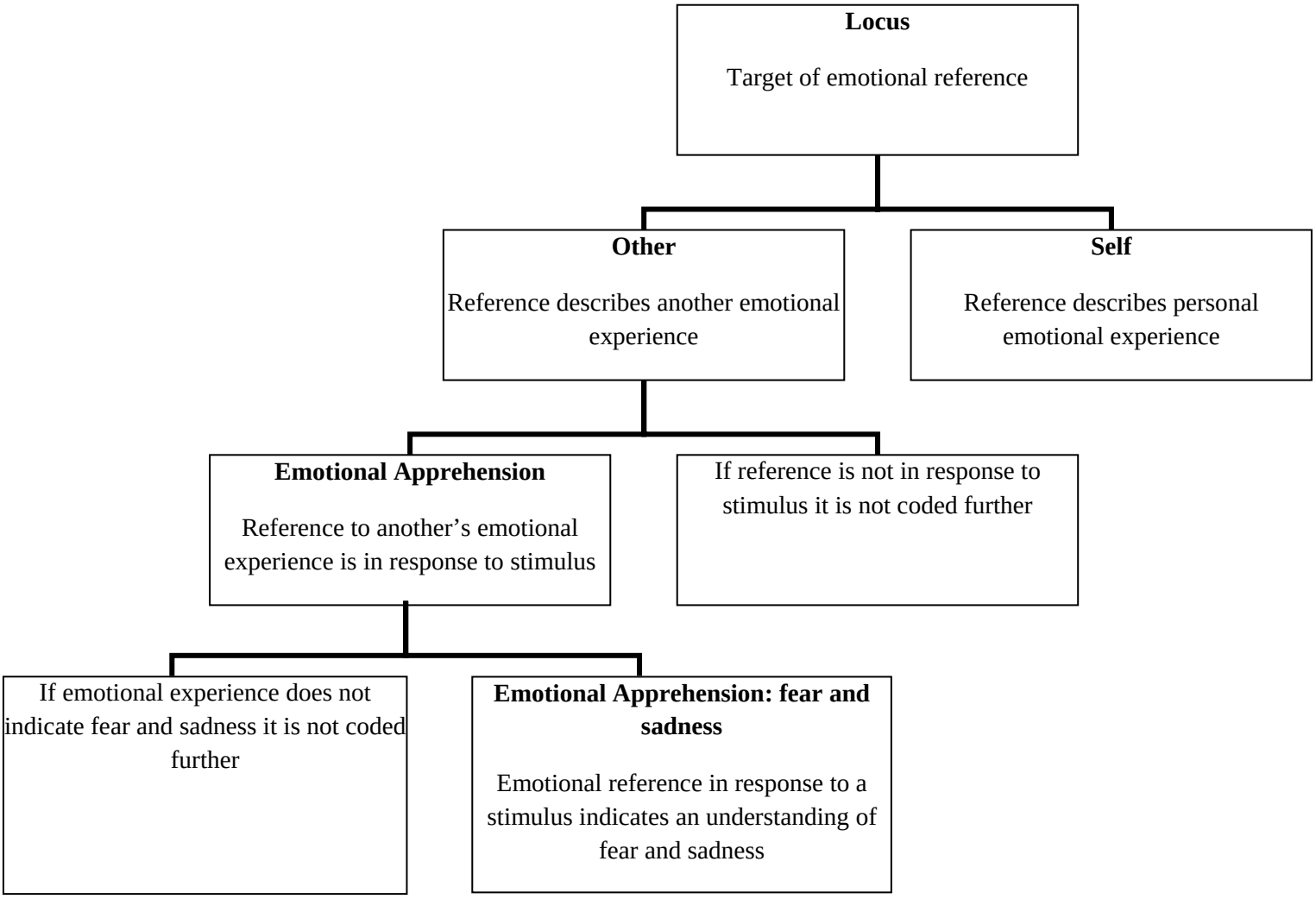
Step Three: Identify other codes that indicate empathy and empathy for fear and sadness

"Other" Code Type	**Properties of Code Type**	**Examples**
Emotional Apprehension	Apprehension or comprehension of another's emotional state in response to a stimulus	"He was like *scared* when I was walking towards him because I still had the knives in my hand." "She was coming towards me to touch me, just to see if it was real, because she was so freaked out."
Emotional Apprehension; fear and sadness	Apprehension or comprehension of another's emotional state in response to a stimulus that indicates fear or sadness	"Standing there drinking. Watching the whole think sitting on the bed, getting *panicky*." "Now he was so *upset* about XX* missing."

Note: Italicized terms = unit of analysis
* Personal information is replaced with XX

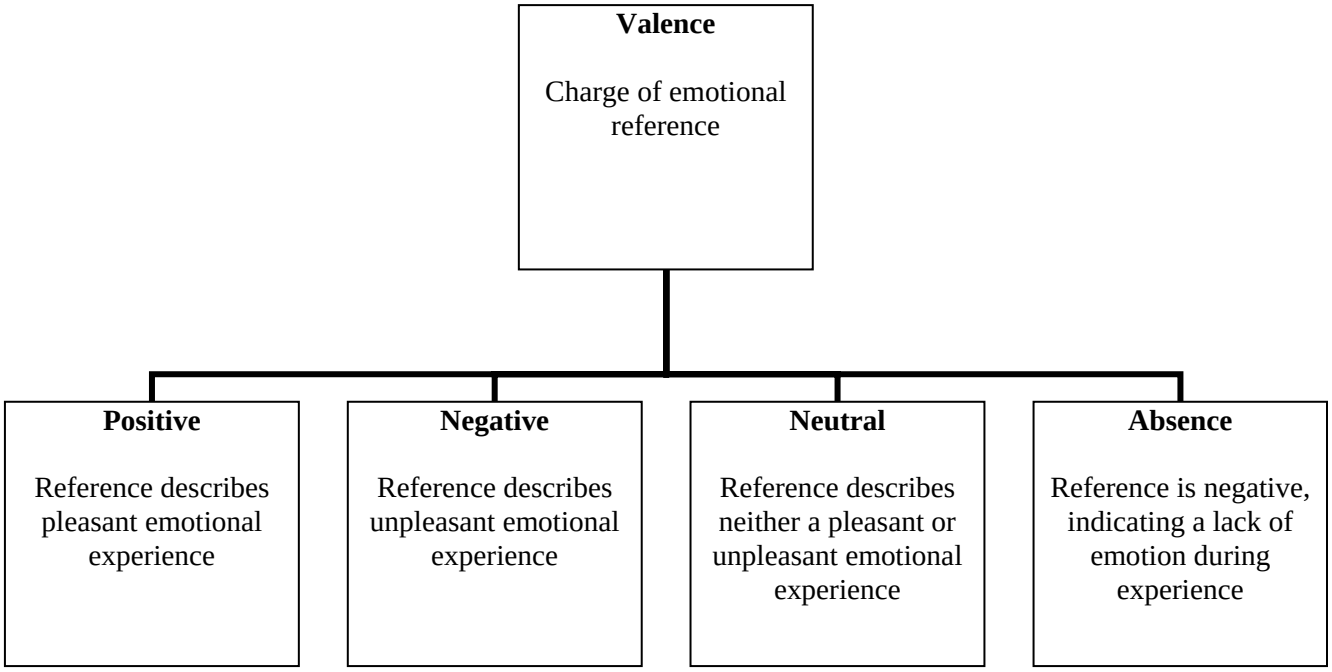
Appendix C

Categorizing Locus Codes



Appendix D

Categorizing Valence Codes



Appendix E

Kappa after first phase of coding

Code	**Kappa**
Negative	.76
Positive	.75
Neutral	.49
Absence of Emotion	.51
Self	.73
Other	.60

Kappa after second phase of coding

Code	**Kappa**
Negative	.83
Positive	.87
Neutral	.60
Absence of Emotion	.58
Self	.80
Other	.69

Table 1

Means and Standard Deviations for Codes Assigned a Valence and Locus Code by PCL-R Classification. Based on Sum

	Psychopath		Non-Psychopath	
	Sum		Sum	
	M	*SD*	*M*	*SD*
Total Emotion	5.8	7.18	12.45	14.71

Table 2

Means and Standard Deviation Locus Codes Assigned Self or Other by PCL-R Classification. Based on Sum.

	Psychopath		Non-Psychopath	
	Sum		Sum	
	M	*SD*	*M*	*SD*
Proportion of Locus "Self"	67.23	34.11	72.67	24.22
Proportion of Locus "Other"	30.73	32.68	24.5	24.63

Note: One psychopathic participant produced no emotional references and was excluded from the proportion analysis.

Table 3

Means and Standard Deviation Locus Codes Assigned Emotional Apprehension and Emotional Apprehension: Fear and Sadness by PCL-R Classification. Based on Sum.

	Psychopath		Non-Psychopath	
	Sum		Sum	
	M	*SD*	*M*	*SD*
Emotional Apprehension	0.53	0.74	1.57	2.25
Emotional Apprehension: Fear and Sadness	0.266	0.59	0.60	1.12

Table 4

Means and Standard Deviations for Codes Assigned Valence Code by PCL-R Classification. Based on Sum and Proportions

	Psychopath				**Non-Psychopath**			
	Sum		Proportion		Sum		Proportion	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
% Negative	4.73	5.56	0.87	0.17	9.66	12.33	0.71	0.31
% Neutral	0.47	0.92	0.06	0.14	1.26	2.15	0.13	0.23
% Positive	0.60	1.30	0.06	0.10	1.54	2.50	0.15	0.24

Note: One psychopathic participant produced no emotional references and was excluded from the proportion analysis.