

Psychopathic Storytelling:

The Effect of Valence on Self and Time in Psychopathic Language Use

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Rebecca Morrow

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Research Advisor: Jeffrey Hancock

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Abstract

This study used computerized textual analysis to examine the characteristics of stories about positive and negative events provided by 13 psychopathic and 38 non-psychopathic criminal offenders. Psychopathic offenders were expected to display linguistic characteristics consistent with narcissistic personality disorder and to display a greater degree of psychological distancing than non-psychopathic offenders. Their language use supported these predictions. Compared to non-psychopaths, psychopaths produced a higher rate of first person singular pronouns (“I”), and fewer first person plural pronouns (“we”), consistent with narcissism, and fewer past tense verbs but more present tense verbs when retelling positive stories, consistent with psychological distancing. The results suggest that a psychopath’s narcissistic personality and psychological distancing can be detected in language production.

Introduction

Theophrastus, a student of Aristotle, was deft at characterizing personality types. His “Unscrupulous Man” portrays characteristics of the modern conception of psychopaths:

The Unscrupulous Man will go and borrow more money from a creditor he has never paid... When marketing he reminds the butcher of some service he has rendered him and, standing near the scales, throws in some meat, if he can, and a soup-bone. If he succeeds, so much the better; if not, he will snatch a piece of tripe and go off laughing. (Qtd. in Millon, Simonsen, & Birket-Smith, 1998, p. 3)

Theophrastus shows psychopaths as eager to cheat and lacking in remorse. Today, psychologists agree that psychopaths share a number of characteristics including egocentricity, impulsiveness, shallow emotions, little empathy, guiltlessness, pathological lying, and a willingness to violate social norms (Hare, 1998). In addition to these distinctive personality characteristics, psychopaths have a high propensity for crime: in a federal offender sample, psychopaths committed an average of 7.32 violent crimes compared with an average of 4.52 violent crimes for nonpsychopathic offenders (Porter & Porter, 2007). Within one year of committing violent crimes, psychopaths are more likely than nonpsychopaths to be repeat offenders for additional serious violent crimes (Porter & Porter). Psychopaths, however, present themselves as normal people, wearing a “mask of sanity” according to Cleckley (1941). The purpose of this study is to examine the language of psychopathic offenders for evidence of egocentricity, narcissism, and psychological distancing that may leak out from behind their mask.

Main Attributes of the Psychopath

Psychopaths are most commonly identified by the Psychopathy Checklist-Revised (PCL-R), a 20-item instrument (Hare & Neumann, 2006). Scores on the PCL-R are determined by semistructured interviews and information from files. Each of the 20 items is scored on a 3-point scale from 0-2, so scores can range from 0-40. The criteria to diagnose psychopaths in North America are scores above 30 on the PCL-R. Some of the items are “glibness/superficial charm ... grandiose sense of self worth ... pathological lying ... lack of remorse or guilt ... shallow affect ... juvenile delinquency” (Hare & Neumann, p. 63), which are cornerstone descriptions of psychopathic personality. PCL-R scores can be analyzed in terms of underlying factors. In 1991, the PCL-R was divided into two factors: Factor 1, Interpersonal/Affective; and Factor 2, Social Deviance (Hare & Neumann). In 2003, Hare divided the PCL-R analyses into four factors: interpersonal, affective, lifestyle, and antisocial.

Psychopaths are known for their egocentricity and inability to love (Lykken, 1995). They have trouble forming deep attachments to other people, and according to Levenson, this “trivialization of the other,” needs to be researched further in psychopathy studies (qtd. in Blackburn, 2006, p. 50). Evidence also shows that psychopaths are motivated by thrill seeking and sadistic interests (Porter & Woodworth, 2006). Psychopaths show more violence when they commit sexual crimes (Gretton, McBride, Lewis, O’Shaughnessy, & Hare, 1994 qtd. in Porter & Woodworth, 2006), and take advantage of others more often in their crimes (Forth & Kroner, 1995 qtd. in Porter & Woodworth). In addition, when psychopaths describe their crimes, they tend to reframe their experiences by shifting blame away from themselves,

and describing their crimes as more reactive than police records did (Porter and Woodworth, 2005 qtd. in Porter and Woodworth, 2006).

Another hallmark of the psychopathic personality is shallow affect, which can be seen in the ways they process emotional language differently from non-psychopaths. Hare found that psychopaths react less to emotional connotations of descriptions (Lykken, 1995). In another study, Hare compared psychopaths' and non-psychopaths' reaction times and brain-wave responses (event-related potentials or ERPs) to a word-identifying task. He found that non-psychopaths responded quicker to emotional words than neutral words than psychopaths did. Non-psychopaths also showed a greater difference the patterns of their ERPs than psychopaths did (Lykken). Psychopaths tend to misunderstand the connotative meanings in words, and when asked to group similar words together, psychopaths grouped words based on denotative meaning more often than non-psychopaths, who grouped words together based on connotative meaning (Blackburn, 2006). Psychopaths also have subdued responses to other people's distress. One study measured involuntary responses when subjects believed others received electric shocks, and they found that psychopaths had less involuntary responses than non-psychopaths (see Blair, Mitchell, & Blair, 2005). In another experiment, psychopaths showed less involuntary responses than controls when provoked by distressing images (Blair et al, 2005).

Psychopaths specifically respond much less dramatically to negative stimuli than non-psychopaths. For example, Lykken performed a classic conditioning experiment by sounding a buzzer (the conditioned stimulus) then giving participants a safe but painful electric shock (the unconditioned stimulus). Sweating is the unconditioned response to the unconditioned stimulus, so Lykken wanted to examine the extent of the conditioned response to the buzzer.

He found that when faced with an imminent threat of electric shock, psychopathic offenders show a significantly reduced conditioned response compared to non-psychopaths (Blair et. al, 2005). However, few studies examined the differences between psychopathic offenders' and non-psychopathic offenders' responses to positive stimuli. One study examined how differently valenced images affected the startle response in non-psychopaths, mixed offenders, and psychopathic offenders. The normal, mixed, and psychopathic groups did not differ in startle blink magnitude during neutral and positively valenced images, but psychopathic offenders displayed a significantly lower startle blink magnitude during negative images (Patrick, 2007).

Language and Psychopaths

Note that these studies analyzed psychopath's language processing, but few studies have examined the way psychopaths use language. Psychopaths have been found to produce more disfluencies, such as "uh" or "um," compared to controls when discussing their murders, which suggests that retelling such an emotional story was uncomfortable for them (Woodworth, Hancock, and Porter, 2008). In one recent study examining language production, Kornet (2008) found when offenders speak about their murders, psychopaths produce fewer emotional references than non-psychopaths. Overall, psychopaths use emotional terms less frequently, and the emotional terms they use are more negatively valenced than controls (Kornet, 2008). These findings are consistent with psychopaths' shallow affect. What other personality traits unique to psychopaths might be reflected in their language use?

One possibility is that psychopaths often display characteristics consistent with the narcissistic personality, such as an aggressive-sadistic personality style, self-love, arrogance,

and other-exploitation. Indeed, psychopathy is often present at the same time as, or co-morbid with, narcissistic personality disorder (Widiger, 2006). Stone (1993) notes that: “all psychopathic persons are at the same time narcissistic persons” (qtd. in Widiger, 2006, p. 162). However, narcissistic people feel guilt and remorse due to their negative actions, unlike psychopaths (Widiger, 2006).

The fact that psychopaths tend to exhibit narcissism is potentially important as there appears to be a link between narcissistic personality disorder and personal pronoun use. The use of “I” in language can be interpreted as a measure of egocentrism because its primary function is to distinguish between the self and the other (Raskin & Shaw, 1988). In one experiment, Raskin and Shaw (1988) asked subjects to talk about a topic of their choice for 5 minutes. After the monologue, subjects took the Narcissistic Personality Inventory, the Eysenck Personality Questionnaire, and the Rotter Internal-External Locus of Control Scale. They found that subjects with higher narcissism scores used “I” more and “we” less than subjects with lower narcissism scores (Raskin & Shaw, 1988).

Another important aspect of the psychopath that may be reflected in their language is the process of psychological distancing. According to Renninger and Cocking (1993, p. 24), psychological distance “refers to the way in which the individual equilibrates and represents information for him- or herself.” The concept of psychological distance was influenced by Piaget’s theory of the stages of cognitive development in children, as it referred to children being able to separate objects from their physical appearances (Siegel and McGillicuddy-De Lisi, 2003). Siegel and Cocking implemented a program, *Educating the Young Thinker*, which aimed to study psychological distancing in children. They would put children in situations where they had “to separate himself or herself mentally from the here and now and

transcend the ongoing present either by orienting self into the past or the future” (Siegel and McGillicuddy-De Lisi, pp. 700).

Psychological distancing can be measured through text analysis. When writing personal blog entries, compared to people with low psychological distance, people with high psychological distance use longer words, less present tense, and less first person singular pronouns (Cohn, Mehl, and Pennebaker, 2004). This kind of psychological distancing was observed in a recent study in which offenders when offenders retold the story of their murders. In this study, psychopaths psychologically distanced themselves to a greater degree than non-psychopaths (Woodworth, Hancock & Porter, 2008). However, psychological distancing has not been studied in relation to psychopaths’ everyday speech, which typically does not include stories of murder. The effect psychological distancing plays in influencing psychopathic and non-psychopathic offenders’ language use is potentially important because it can provide insight into psychopaths’ motivating psychology.

Research Questions/Empirical Hypothesis

Given that psychopaths show a high co-morbidity with narcissism, and that narcissism is linked with higher rates of first person singular pronoun use, psychopaths should produce higher rates of personal pronouns and lower rates of other-oriented pronouns than controls.

H1: Psychopaths will use first person singular pronouns (“I” “me”) more frequently than controls

H2: Psychopaths will use first person plural pronouns (“we” “us”) less frequently than controls

H3: Psychopaths will use third person singular personal pronouns such as (“he” “she”) less frequently than controls

As noted above, psychological distancing is reflected in verb tense. If this is the case, both psychopaths and controls should produce more past tense verbs when describing negative stories in their past than during positive stories. Conversely, they should produce more present tense verbs when describing positive stories than during negative ones.

H4a: In general, more past tense verbs should be used when describing negative events relative to positive events

H4b: In general, more present tense verbs should be used when describing positive events relative to negative events

Given that psychopaths tend to feel less guilt and show less remorse than controls, psychological distancing should be more salient in psychopathic language than in non-

psychopathic language. Thus, psychopaths should use less past tense verbs when describing negative events and more present tense verbs during positive events.

H5a: When describing negative events, psychopathic offenders will use more past tense verbs than controls.

H5b: When describing positive events, psychopathic offenders will use less past tense verbs than controls.

H6a: When describing negative events, psychopathic offenders will use less present tense verbs than controls.

H6b: When describing positive events, psychopathic offenders will use more present tense verbs than controls.

Methods

Participants

The data in this study originally comes from transcripts taken from violent offenders in two Canadian maximum security correctional facilities: one in British Columbia and the other in Nova Scotia. The transcripts were originally collected in 2000 for a previous study (see Woodworth & Porter, 2002). In this study, psychopaths are defined as having a score of 25 or higher on the pCL-R, and this sample includes 51 offenders: 13 psychopathic and 38 non-psychopathic offenders.

Materials

Offenders were told that they were in a study about their memory, and they were asked to recount a positive experience, a negative experience, and their violent offense—a homicide. The transcripts were cleaned, and the interviewer's questions were removed. The present analysis focuses only on their descriptions of positive and negative experiences, and not on their description of their murder. Positive experiences ranged from births, to marriages, to job tasks. Negative experiences were mostly non-homicidal crimes ranging from bank-holdups, kidnapping, and drug trafficking. There were 13 positive psychopathic transcripts, 11 negative psychopathic transcripts, 34 positive control transcripts, and 35 negative control transcripts.

Transcripts varied in the amount of detail provided. For example, one offender described a positive life event, a mechanics course, as “It was a lot of book study, a lot of on the job training,” and after probing by the interviewer to provide more detail, the offender told him “That about covers it.” Other offenders provided a lot of detail, including specific days, descriptions, and prefacing information. For example, one offender describes a positive

life event, meeting his father for the first time, and provides the interviewer with a lot of information:

Oh, okay. My father left...or was removed from our family when I was 4. I went through a period of blaming myself for that...that I thought I had done something wrong, and he was punishing me. So, I went through a lot of my whole adult life, afterwards punishing myself. But in 1975, my grandmother...give me his address where he was. So, I went to live with him, unbeknownst to him. While - my grandmother and myself, and everyone else, we lived in Halifax, and my father was living up in Virginiatown, Ontario - a little remote community of about 3500 up in Northern Ontario. You know where Kirkland Lake is?

Linguistic Analysis

Transcripts were analyzed using quantitative text analysis. Transcripts were analyzed for parts of speech categories using Wmatrix corpus analysis and comparison tool (Rayson, 2003, 2008b). Wmatrix uses the Constituent Likelihood Automatic Word-tagging System, or CLAWS, to code for parts-of-speech (i.e. pronoun, verb, noun, etc.) based on surrounding linguistic context (i.e. “laugh” can be a verb or a noun depending on its surrounding context) (Rayson, 2008a). CLAWS consistently achieves an accuracy rate of 96-97% in classifying parts-of-speech (Rayson, 2008a). Transcripts were combined together into six groups: psychopaths speaking about positive events (N=13), psychopaths speaking about negative events (N=11), controls speaking about positive events (N=34), controls speaking about negative events (N=35), a combined group of psychopaths speaking about both positive and negative events, and a combined group of controls speaking about both positive and negative

events. Significance levels were determined by one degree of freedom log-likelihood ratios (*LLR*), which were calculated from contingency tables of pronoun or verb frequencies in each group. The results were significant if $LLR > 7$.

The transcripts were analyzed in terms of pronoun and verb use, specifically the use of self-related pronouns, self plural pronouns, third person pronouns, past tense verbs, and present tense verbs. Self-related pronouns were defined as the first person singular objective personal pronoun, “me,” and the first person singular subjective personal pronoun, “I.” Self plural pronouns were defined as first person plural objective personal pronoun, “us,” and first person plural subjective personal pronoun, “we.” Third person pronouns were defined as the objective personal pronoun, “him,” or “her,” plural objective personal pronoun, “them,” singular subjective personal pronoun, “he,” or “she,” and plural subjective personal pronoun, “they.” The present analysis does not include the use of second person pronouns “you” or “yours.”

Past tense verbs were defined as “were” “was” “been” “did” “done” “had,” past tenses of lexical verbs such as, “worked,” and past participles of lexical verbs “given.” Present tense verbs were defined as “being, am, are, is, do, doing, does, having, has,” base forms of lexical verbs such as “give,” and –s forms of lexical verbs such as “works,” (See tables 11-15).

Results

Narcissism and Pronoun Analysis

First person singular analysis. Did the narcissistic nature of psychopaths lead them to use more language referencing themselves when re-telling their stories? As expected, psychopaths used more first person singular overall ($freq = 1,391$, $relative\ freq = 7.00\%$) compared to controls ($freq = 3,403$, $relative\ freq = 6.36\%$), $LLR = 9.17$ $p < 0.01$. A second question is whether the valence of the story affected the psychopaths' production of first person singular. Although offenders overall used more first person singular during negative events ($freq = 2,775$, $relative\ frequency = 6.89\%$) than during positive events ($freq = 2,019$, $relative\ freq = 6.09\%$), $LLR=18.03$, $p < 0.001$, as predicted psychopaths used more first person singular pronouns ($freq = 603$, $relative\ freq = 6.77\%$) during positive stories than controls ($freq = 1416$, $relative\ freq = 5.84\%$) $LLR = 8.92$, $p < 0.01$. In contrast, when describing negative events, psychopathic stories ($freq = 788$, $relative\ freq = 7.20\%$) did not differ from control stories ($freq = 1,987$, $relative\ freq = 6.78\%$), $LLR=1.99$, ns. This pattern of results suggest that psychopaths used more first person singular when describing events in their lives compared to controls, but that this effect is most salient when they are describing positive stories (See Figure 1). The results support H1, which predicted that psychopaths would use first person singular pronouns more frequently than controls given their narcissistic nature.

First person plural analysis. Did psychopaths use less first person plural pronouns (i.e. "we" and "us) during their speech?? As predicted, psychopaths used less first person plural pronouns ($freq = 162$, $relative\ freq = 0.82\%$) more than controls across positive and negative stories ($freq = 785$, $relative\ freq = 1.47\%$), $LLR = 52.23$, $p < 0.0001$. In addition,

psychopaths used more first person plural when describing negative events ($freq = 108$, $relative\ freq = 1.07\%$) compared to positive events ($freq = 54$, $relative\ freq = 0.61\%$), $LLR = 8.95$, $p < 0.01$. These results suggest that psychopaths use less first person plural pronouns when describing events in their lives, but the effects are most salient when describing positive events (See Figure 2). The results supported H2, which predicted that psychopaths would use first person plural pronouns less frequently than controls.

Third person analysis. Psychopaths used less third person language when speaking about negative events ($freq = 368$, $relative\ freq = 3.36\%$) than controls ($freq = 1,208$, $relative\ freq = 4.4\%$), $LLR = 12.17$, $p < .001$. There were no other significant effects (See Figure 3). The results partially supported H3, which predicted that psychopaths would use third person singular personal pronouns less frequently than controls. Taken together, these pronoun patterns suggest that the narcissistic nature of psychopaths is reflected in their pronoun use, and that their increased self-focus increases when discussing positive events.

Psychological Distancing and Verb Tense Analysis

Past tense analysis. Consistent with psychological distancing, offenders used more past tense during negative events ($freq = 4,751$, $relative\ freq = 11.80\%$) than during positive events ($freq = 3,303$, $relative\ freq = 9.96\%$), $LLR = 56.36$, $p < 0.0001$. The results support H4a, which predicted that during negative events, psychological distancing would be evidenced in a general increase in past tense verbs compared to positive events. Overall, psychopaths ($freq = 2,114$, $relative\ freq = 10.64\%$) did not differ from controls ($freq = 5,940$, $relative\ freq = 11.09\%$) in their use of past tense verbs $LLR = 2.69$, ns. The question of interest, however, was how the valence of the story affected past tense verb production for psychopaths compared to controls. H5a predicted that during negative events, psychopaths

would use more past tense verbs than controls. This hypothesis was not supported.

Psychopaths ($freq = 1,301$, $relative\ freq = 12.88\%$) and controls ($freq = 3,450$, $relative\ freq = 12.55\%$) produced the same rate of past tense verbs during their telling of the negative stories, $LLR = 0.08$, ns. A difference did emerge, however, during positive events. As predicted, psychopaths used less past tense ($freq = 813$, $relative\ freq = 9.12\%$) than controls ($freq = 2,490$, $relative\ freq = 11\%$) during positive events, $LLR = 8.84$, $p < 0.01$. The results supported H5b, which predicted that during positive events, psychopathic offenders would use less past tense verbs than controls. The results suggest that offenders use less past tense overall when telling positive stories, but the effect is more salient when psychopaths tell positive stories (See Figure 4).

Present tense analysis. Consistent with psychological distancing, offenders used more present tense during positive events ($freq = 1,930$, $relative\ freq = 5.82\%$) than during negative events ($freq = 1,687$, $relative\ freq = 4.19\%$), $LLR = 97.59$, $p < 0.0001$. The results supported H4b, which predicted that during positive events, offenders in general would use more present tense verbs than during negative events. Overall, psychopaths ($freq = 1,012$, $relative\ freq = 5.10\%$) and controls ($freq = 2,605$, $relative\ freq = 4.87\%$) did not differ in their use of present tense verbs, $LLR = 1.54$, ns. The key question was whether the valence of the story affected present tense usage differently in psychopaths and controls. H6a predicted that during negative events, psychopaths would use less present tense verbs than controls. This hypothesis was not supported. During negative events, psychopaths ($freq = 429$, $relative\ freq = 3.92\%$) and controls ($freq = 1,258$, $relative\ freq = 4.58\%$) produced the same rate of present tense verb usage during the retelling of their negative stories, $LLR = 2.7$, ns. Similar to the pattern found during past tense verb usage, a difference emerged during positive

events. As predicted, psychopaths used more present tense (*freq* = 583, *relative freq* = 6.54%) than controls (*freq* = 1,347, *relative freq* = 5.96%), *LLR* = 10.56, *p* < 0.001. The results supported H6b, which predicted that when describing positive events, psychopathic offenders would use more present tense verbs than controls. The results suggest that offenders use more present tense when telling positive stories, but the effect is more salient for psychopaths (See Figure 5).

Discussion

This study aimed to uncover language differences in storytelling between psychopathic and non-psychopathic offenders. The research focused on psychopathic language use and whether it highlighted their self-centered and remorseless nature. The research focused on two traits specific to the psychopath: characteristics consistent with the narcissistic personality disorder, and the manner in which they psychologically distance themselves differently than controls. Psychopaths were expected to use more language referring to themselves, less language referring to other people, and show more salient psychological distancing effects than controls through their use of past and present verb tenses.

Narcissism

Consistent with the predictions, psychopaths used more first person singular pronouns – “I” and “me” – than controls, suggesting that psychopaths show symptoms similar to the narcissistic personality disorder including self-love and egocentricity (Widiger, 2006). These findings supported research by Raskin and Shaw (1988), who found that characteristics of the narcissistic personality are reflected in an increased rate of first person singular pronouns and a decreased rate of first person plural pronouns. For example, one psychopathic offender described a positive event in his life, the birth of his son: “And I remember laying in my cell that night, and uh, just saying, ‘I wonder what time it is, I wonder what time it is.’ I was like a kid in a candy store, always checking the clock, always checking the clock.” Note that the offender does not mention the mother of his child, nor his son in the excerpt. He only mentions himself and how the experience made him feel. Birth is an extremely other-oriented

experience, so the effects of narcissism are evident when the psychopathic offender fails to mention the two other important people involved in the experience.

Also consistent with the predictions stemming from the narcissistic nature of psychopaths, psychopaths used significantly less first person plural pronouns than controls. Furthermore, psychopaths increased their use of first person plural pronouns during negative events, consistent with Porter and Porter's (2007) observation because the results suggest that psychopaths are more instrumental in their descriptions of the crime. They are less likely to blame themselves, so they speak about their accomplice in addition to themselves. For example, one psychopathic offender recalls an experience of a bank hold-up:

Well, for the bank and that I was part of a few guys there, and uh, for us, it was, I wasn't ready and uh, I was really intoxicated, coke and everything now, and uh, and uh when we do bank it was like uh, to get some more money to spend and have fun and it was uh, like a challenge to do that because sometimes we do, three guys we go and uh, we do them all at the day, you know, sometimes we do three a day, we do bank, and we do them all bank, and on that time, that's year seventy, that was long time ago and uh, on this time uh, the bank was easy to do, you know, they give you the money and that was it, and you leave, and we never think about the consequences of that.

Note that the psychopathic offender shifts blame away from himself and onto his friends by using the pronoun "we." Even more importantly, the psychopath mentions that he never thought about the consequences of his actions using "we" as the sentence subject. The psychopathic lack of guilt and remorse is resilient in this subject's speech. When psychopaths

increase their production of self plural pronouns, they shift blame away from themselves, psychologically distancing themselves from the experience.

Contrary to predictions, psychopaths did not use less other-related pronouns overall or during positive events. However, in positive events, psychopaths use more first person singular pronouns and less first person plural pronouns compared to controls. These two types of pronouns may balance each other out and leave room for the same rate of third person pronouns. During negative events, however, psychopaths used less other-related pronouns compared to controls. This suggests that psychopaths fail to identify with their victims—consistent with Factor 1 on the PCL-R (Hare & Neumann, 2006).

Psychological Distancing

According to psychological distancing theory, the higher the degree of psychological distancing from an event, the further in time that event should be represented psychologically (Renninger & Cocking, 1993; Siegel & McGillicuddy-De Lisi, 2003) and linguistically (Cohn, Mehl, & Pennebaker, 2004; Woodworth, Hancock, & Porter, 2008). People should try to be more psychologically distant from negative events than from positive ones. This was the case in the present study. In general, when offenders spoke about their experiences, they used more past tense verbs when describing negative events than when describing positive events, consistent with the effects of psychological distancing.

Psychopaths were expected to show this effect to an even greater degree than non-psychopaths. That is, psychopaths should be more distant from negative events but more “in the moment” for positive events relative to controls. This prediction was partially supported. When psychopaths spoke about positive stories, they used less past tense verbs than controls. Psychopaths were less psychologically distant than controls during positive events. For

example, one psychopathic offender described a positive experience, his time at an Olympic training camp:

Basically I uh, get up in the morning . . .eat, get ready, go to the uh . . .to the jumping uh, area and be there at 8: 30, 9 in the morning, and you'd jump until about 11:00, 12, go for lunch, and you'd come back in the afternoon, and do the same thing. All's it is, is you have a pair of skis, ski boots, a wet suit, a life jacket and a helmet, that's it. You get on the water ramps and you go from there. The trampoline was - well for training with harnesses.

Note that this experience happened in the past, but the offender describes it as if it is happening in the present. He is clearly not removed from his positive experience, which is consistent with lowered psychological distancing. Compare this line of description with a control talking about a positive experience, the birth of his daughter:

Well, I was at a friend's house, and I got a call saying that, you, your girlfriends in labor, and I actually, not in labor, just had the baby. And, I went to the hospital, and I just, I seen my little girl and she looked, she was all me and it made me feel, now I finally had something to live for. It was, it was incredible...

The control is moved by the birth of his child, but he speaks about it in the past tense. He does not live in the moment, and his use of the past tense suggests that it is merely a memory, not a time that he is stuck in and cannot leave.

Consistent with the predictions, offenders in general used more present tense verbs during positive events, which suggests that they were less psychologically distant during positive events. During positive stories, psychopaths used more present tense verbs than

controls. Similar to the past tense verb analysis for positive stories, the results suggest that psychopaths are less removed from their positive experiences. During negative events, psychopaths and controls produced the same rate of present tense verbs, which implies that the effects of psychological distancing moderate present tense verb production.

Limitations

There were a number of limitations in this study. There was a small sample of psychopathic offenders, so if the sample were larger, the research would be better able to generalize to the population of psychopaths more precisely. In addition, certain offenders spoke more during their interviews than others. Furthermore, the results were calculated using a sum of all transcripts combined instead of averages from each transcript, so individual offenders could have a disproportionate effect on the results as a whole.

Significance

The research contributes significantly to the theoretical literature because it confirms previously known aspects of the psychopathic personality through a new measurement—linguistic analysis. Previous research about psychopathic offenders used self report and clinical studies to determine characteristics such as egocentricity and lack of remorse, and shallow affect (Lykken, 1995; Hare & Neumann, 2006), but few studies analyzed their language production to draw the same conclusions. Recall that Hancock, Porter, and Woodworth (2008) found that when retelling the story of their murder, psychopathic offenders psychologically distance themselves to a greater degree than non-psychopathic offenders. This study supports these findings that language production can be used to measure characteristics unique to the psychopath. Furthermore, this research supports the notion that language production can be used to glean insight into the general population.

Previous research found that linguistic analysis revealed significant differences when people were depressed or recovering from a trauma (Cohn, Mehl, & Pennebaker, 2004). When speaking about normal events, offenders in general demonstrated psychological distancing. The research contributes significantly to the theoretical literature because it reaffirms that language production reflects psychological states.

This study has practical significance as well because it suggests that characteristics unique to the psychopath can be found through textual analysis. The pCL-R is a valid and reliable measure of psychopathy, but it has one significant drawback—it requires lengthy interviews and can only be used on convicts (Hare & Neumann, 2006). Therefore, linguistic analysis could be useful in law enforcement because the speech sample could be obtained from suspects who are not prisoners, which could help identify those with psychopathic tendencies. Furthermore, psychopaths are harmful to the workforce because they create significant damage to companies. Psychopaths have “manipulated their bosses and coworkers, they were deceitful, lied, actually did minimal work...created interpersonal conflict...abused some fellow employees...padding their expense accounts” (Babiak, 2007, p. 414). Linguistic analysis could be potentially helpful in identifying psychopaths in the workplace.

There are ethical considerations to computerized linguistic analysis as well. For example, this study only found differences between psychopaths and controls; it did not come up with a valid cut off level for first person singular pronouns, first person plural pronouns, or verbs. Thus, we cannot determine how well this type of analysis can be used to diagnose psychopathic personality disorder. Furthermore, this research raises the potential

that institutions could analyze samples of speech, categorizing people into personality groups (i.e., psychopath vs. non-psychopath), raising privacy concerns as well.

Conclusion

This study aimed to determine linguistic differences between psychopathic and non-psychopathic offenders during retelling of positively and negatively valenced stories. Linguistic differences were salient across narcissistic and psychological distancing dimensions. Psychopaths were found to use more first person singular pronouns, less first person plural pronouns, fewer past tense verbs and more present tense verbs when retelling positive events than controls. The results suggested that psychopaths display characteristics consistent with the narcissistic personality disorder and psychologically distance themselves in a different manner than controls. Studying offenders' storytelling opens doors into understanding the motivating psychology behind psychopathic offenders.

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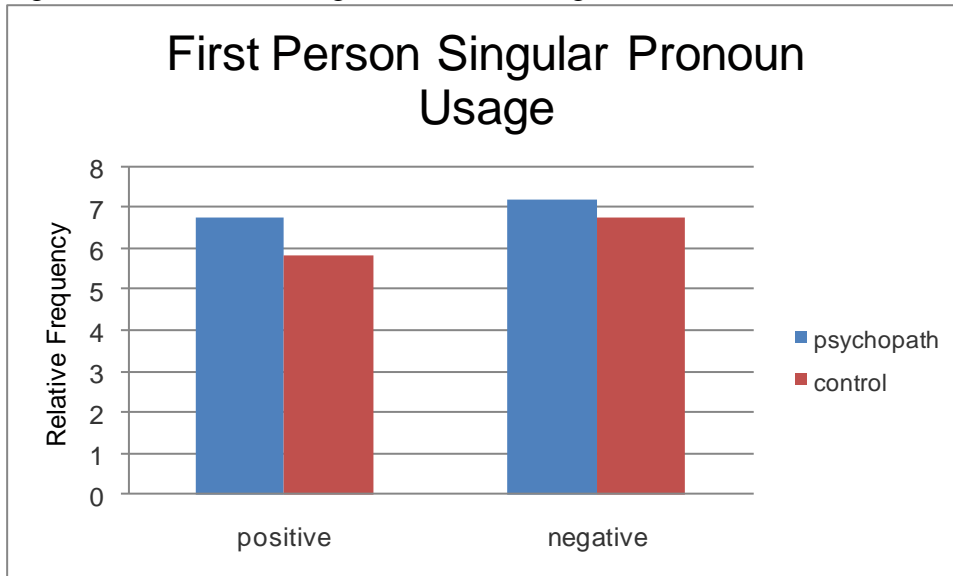
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Figures

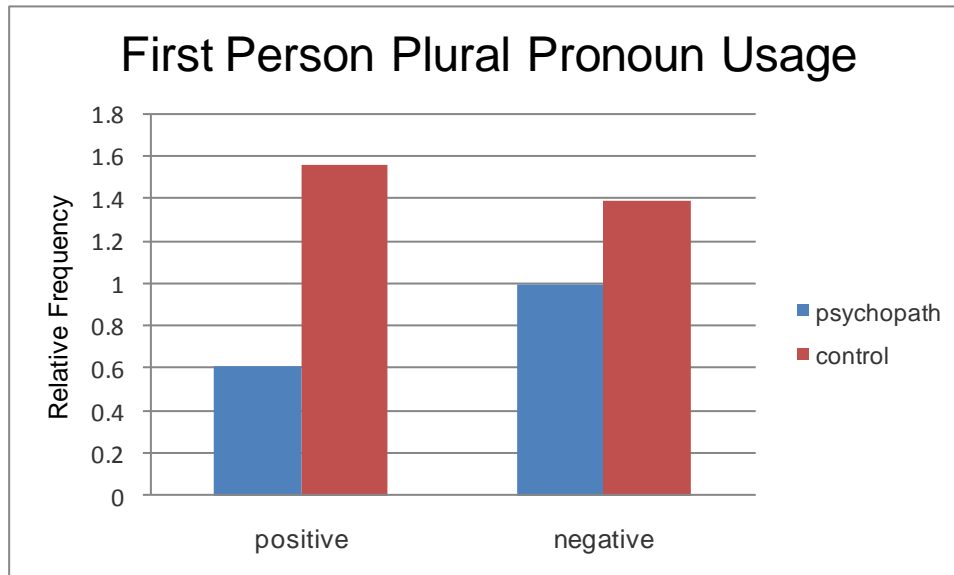
Figure 1. First Person Singular Pronoun Usage



Note: Statistical differences across story valence and psychopath condition

First Person Singular Interaction Effects	Log Likelihood Ratio
Psychopath Positive vs. Control Positive	8.92
Psychopath Negative vs. Control Negative	1.99
Psychopath Positive vs. Psychopath Negative	1.31
Control Positive vs. Control Negative	18.45
First Person Singular Main Effects	Log Likelihood Ratio
Positive vs. Negative	18.03
Psychopath vs. Control	9.17

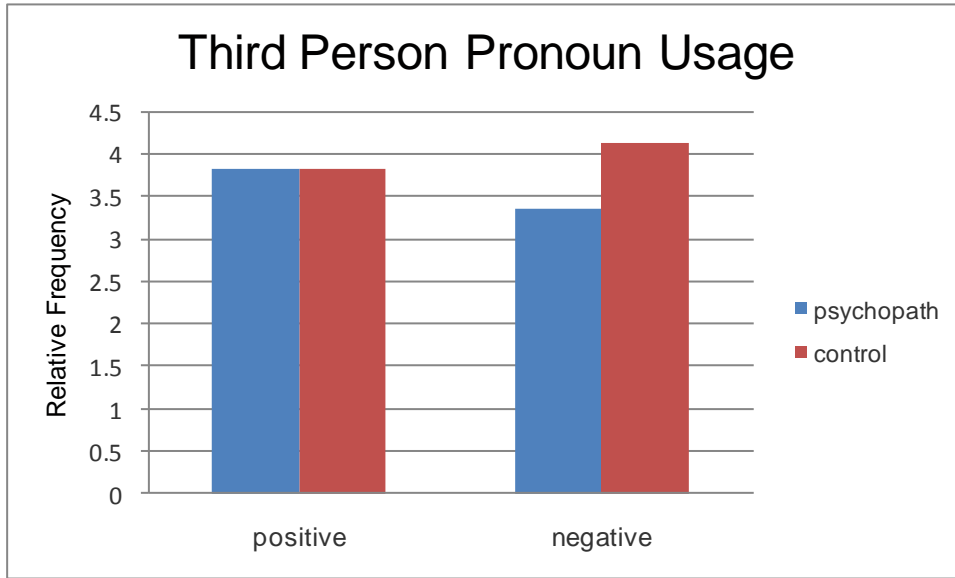
Figure 2. First Person Plural Pronoun Usage



Note: Statistical differences across story valence and psychopath condition

First Person Plural Interaction Effects	Log Likelihood Ratio
Psychopath Positive vs. Control Positive	53.08
Psychopath Negative vs. Control Negative	10.65
Psychopath Positive vs. Psychopath Negative	8.95
Control Positive vs. Control Negative	2.63
First Person Plural Main Effects	Log Likelihood Ratio
Positive vs. Negative	18.03
Psychopath vs. Control	9.17

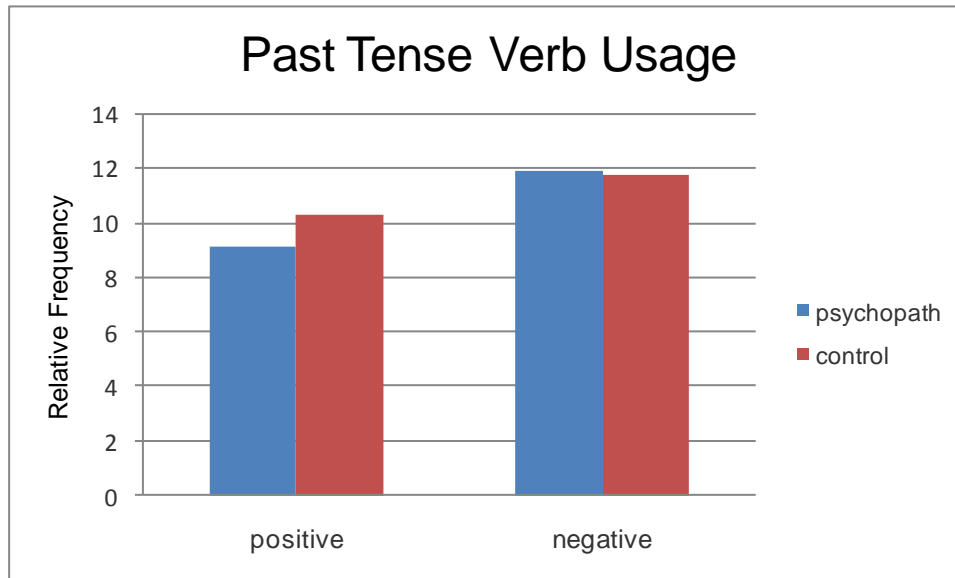
Figure 3. Third Person Pronoun Usage



Note: Statistical differences across story valence and psychopath condition

Third Person Interaction Effects	Log Likelihood Ratio
Psychopath Positive vs. Control Positive	0
Psychopath Negative vs. Control Negative	12.17
Psychopath Positive vs. Psychopath Negative	2.96
Control Positive vs. Control Negative	3.11
Third Person Main Effects	Log Likelihood Ratio
Positive vs. Negative	0.43
Psychopath vs. Control	6.52

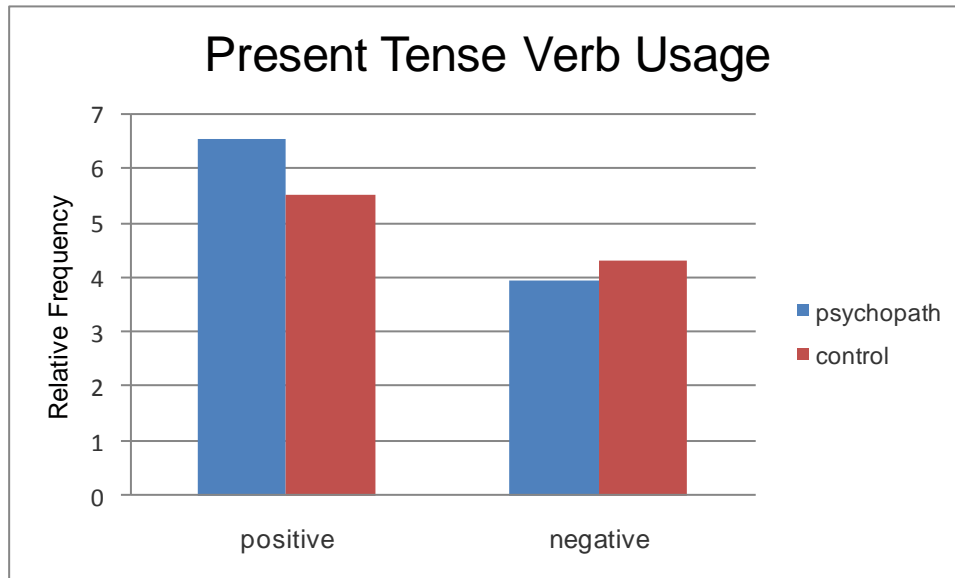
Figure 4. Past Tense Verb Usage



Note: Statistical differences across story valence and psychopath condition

Past Interaction Effects	Log Likelihood Ratio
Psychopath Positive vs. Control Positive	8.84
Psychopath Negative vs. Control Negative	0.08
Psychopath Positive vs. Psychopath Negative	35.6
Control Positive vs. Control Negative	26.98
Past Main Effects	Log Likelihood Ratio
Positive vs. Negative	56.36
Psychopath vs. Control	2.69

Figure 5. Present Tense Verb Usage



Note: Statistical differences across story valence and psychopath condition

Present Interaction Effects	Log Likelihood Ratio
Psychopath Positive vs. Control Positive	10.56
Psychopath Negative vs. Control Negative	2.7
Psychopath Positive vs. Psychopath Negative	65.9
Control Positive vs. Control Negative	43.41
Present Main Effects	Log Likelihood Ratio
Positive vs. Negative	97.59
Psychopath vs. Control	1.54

Tables

Table 1. Description of each linguistic category and frequency across positive and negative story categories by psychopath and control

Code	Definition	Psychopath Stories		Control Stories	
		Positive	Negative	Positive	Negative
First person singular pronouns					
PPIO1	1st person sing. objective personal pronoun (me)	107	122	186	350
PPIS1	1st person sing. subjective personal pronoun (I)	496	666	1230	1637
Total first person singular		603	788	1416	1987
First person plural pronouns					
PPIO2	1st person plural objective personal pronoun (us)	5	20	51	58
PPIS2	1st person plural subjective personal pronoun (we)	49	88	327	349
Total First person plural		54	108	378	407
Third Person Pronouns					
PPHO1	3rd person sing. objective personal pronoun (him, her)	83	60	142	224
PPHO2	3rd person plural objective personal pronoun (them)	16	37	71	103
PPHS1	3rd person sing. subjective personal pronoun (he, she)	197	136	521	555
PPHS2	3rd person plural subjective personal pronoun (they)	45	135	191	326
Total third person pronouns		341	368	925	1208
Past tense verbs					
VBDR	were	18	49	149	160
VBDZ	was	197	310	695	858
VBN	been	11	13	31	32
VDD	did	64	58	96	178
VDN	done	8	6	16	20
VHD	had (past tense)	54	86	228	251
VVD	past tense of lexical verb (e.g. gave, worked)	375	650	1039	1601
VVN	past participle of lexical verb (e.g. given, worked)	86	129	236	350
Total Past tense verbs		813	1301	2490	3450
Present tense verbs					
VBG	being	6	3	24	16

VBM	am	31	17	80	65
VBR	are	29	11	64	42
VBZ	is	134	80	180	210
VD0	do, base form (finite)	35	44	117	113
VDG	doing	3	19	20	33
VDI	do, infinitive (I may do... To do...)	13	11	29	53
VDZ	does	3	3	2	10
VHG	having	8	2	12	9
VHZ	has	6	5	17	8
VV0	base form of lexical verb (e.g. give, work)	217	213	711	626
VVZ	-s form of lexical verb (e.g. gives, works)	98	21	91	73
Total present tense verbs		583	429	1347	1258

Table 2. Contingency table of frequencies and (relative frequencies) across positive and negative story categories by psychopath and control

First person singular pronouns	Positive	Negative	Total
Psychopath	603 (6.77)	788 (7.2)	1391 (7.00)
Control	1416 (5.84)	1987 (6.78)	3403 (6.36)
Total	2019 (6.09)	2775 (6.89)	4794.00
First person plural pronouns	Positive	Negative	Total
Psychopath	54 (.61)	108 (0.99)	162 (0.82)
Control	378 (1.56)	407 (1.39)	785 (1.47)
Total	432 (1.30)	515 (1.28)	947.00
Third person pronouns	Positive	Negative	Total
Psychopath	341 (3.83)	368 (3.36)	709 (3.57)
Control	925 (3.82)	1208 (4.12)	2133 (3.98)
Total	1266 (3.82)	1576 (3.91)	2842.00
Past tense verbs	Positive	Negative	Total
Psychopath	813 (9.12)	1301(11.88)	2114 (10.64)
Control	2490 (10.27)	3450 (11.77)	5940 (11.09)
Total	3303 (9.96)	4751 (11.80)	8054.00

Present tense verbs	Positive	Negative	Total
Psychopath	583 (6.54)	429 (3.92)	1012 (5.10)
Control	1347 (5.52)	1258 (4.29)	2605 (4.87)
Total	1930 (5.82)	1687 (4.19)	3617.00

Table 3. Total Word Count

Type	Word Count
Psychopath Positive	8913.00
Psychopath negative	10949.00
Control positive	24237.00
Control Negative	29307.00
Psychopath total	19862.00
Control total	53544.00
Positive total	33150.00
Negative total	40256.00