



Coherence in the narratives of psychopathic and nonpsychopathic criminal offenders

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Abstract

Previous research has demonstrated that the speech of psychopaths is more disorganized than that of nonpsychopaths [Williamson, S. E. (1991). *Cohesion and coherence in the speech of psychopathic criminals*. Unpublished doctoral dissertation, University of British Columbia]. This paper attempts to explain Williamson's findings and examines the specific hypotheses that (a) psychopaths are poor at resolving action in spoken narratives and (b) psychopaths' narratives can be improved by giving them tangible story guides. Prison inmates were asked to produce stories based on the content of two Thematic Apperception Test (TAT) cards, using specified story ideas. These narratives were coded using coherence/plot unit analysis. For Caucasians, psychopaths resolved fewer plot units than controls, but they were hindered by the story guides. For African-Americans, there were no significant group differences in the number of plot units resolved. Psychopaths do seem to have more poorly organized speech, but this effect appears to be limited to Caucasians. © 1999 Elsevier Science Ltd. All rights reserved.

1. Coherence in the narratives of psychopathic and nonpsychopathic criminal inmates

Cleckley (1976) has characterized psychopaths as egocentric, deceitful, callous and impulsive individuals with lifelong difficulties relating to others. Although psychopaths often appear as competent and charming individuals, they typically engage in persistent antisocial acts (including substance abuse and criminal activity) which are harmful to both themselves and others (Hare, McPherson, & Forth, 1988; Hart & Hare, 1989; Smith & Newman, 1990). This behavior is puzzling because psychopaths tend to have no outward signs of mental illness such as delusions, hallucinations or depression (Hart & Hare, 1989).

One interesting, and often overlooked, characteristic of the psychopath is their 'glib and superficial charm' (Hare, 1991). Due primarily to their almost legendary ability to persuade and manipulate others, psychopaths are traditionally thought of as being fluent and skilled con-

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versationalists (Cleckley, 1976). Clinical observers, however, have cited instances in which psychopaths confuse their audience by using unnecessary retractions and clumsy constructions such as double negatives (Eichler, 1965). Although some might characterize this speech pattern as an intentional attempt by psychopaths to make their audience more susceptible to persuasion, such an explanation can not account for psychopaths' unusual speech and language perception in situations which do not involve persuasion or deception (Brinkley, Newman, Harpur, & Johnson, *in press*). An alternative to this motivational hypothesis is that psychopaths may have a subtle form of thought disorder or cognitive deficit that impairs their information and language processing (Gillstrom & Hare, 1988; Williamson, 1991).

Studies of language perception provide some evidence for possible processing anomalies in psychopaths. Hare & McPherson (1984) have reported that, unlike controls, psychopaths do not show a right ear advantage for language stimuli on a dichotic listening task. Similarly, Hare & Jutai (1988) have demonstrated that psychopaths do not show the same right visual field advantage for processing abstract English words that nonpsychopaths do. These results suggest that the language processing resources of psychopaths may be distributed differently than those of nonpsychopaths.

Other research has demonstrated that psychopaths' language processing is not facilitated by semantic cues. Williamson, Harpur & Hare (1991) have reported that, unlike controls, psychopaths do not show enhanced reaction times or increased event-related potentials when responding to emotional words in a lexical decision task. Williamson, Harpur & Hare (1990) also found that, when asked to categorize words, psychopaths were significantly less likely than controls to do so using their emotional content as a guiding strategy. These results suggest that psychopaths may not make use of subtle cues that would be useful in the processing of linguistic stimuli.

The cited studies provide evidence that psychopaths perceive language differently than do controls. The original clinical observations, however, were of psychopathic language production. To date, there has been little research on the speech produced by psychopaths. Based on the reports of Eichler (1965) and Gillstrom & Hare (1988), Williamson (1991) predicted that narratives produced by psychopaths would be more poorly organized than that of nonpsychopaths. She also proposed that this relative level of disorganization could be measured using a technique called coherence analysis.

According to Propp (1968), narratives are considered coherent to the extent that previously established expectations for later plot developments are resolved within the context of a story. Coherence can be evaluated systematically using a technique called plot unit analysis (Botvin & Sutton-Smith, 1977). This technique considers narratives to be a series of plot dyads consisting of actions and resolutions. Coherence is determined by comparing the number of action dyads a narrator begins to the number of action dyads he or she resolves. Consider for example the following two story elements:

1. Marcus, the school bully, hit Jack on the playground.
2. Jack, unhurt by the blow, turned around and knocked Marcus unconscious.

The first plot dyad sets up expectations in the reader who will want to know what happened to Jack. The second unit provides closure for the plot in question. The story becomes coherent

because there is a logical course of action and it becomes clear that the two clauses are part of the same text. If the second plot dyad were not provided, then the audience might become confused because they never find out what happened to Jack and Marcus. When a participant fails to provide a resolution to an action proposition, an incomplete plot dyad is formed and the narrative becomes more difficult for a listener to follow.

In the Williamson (1991) study, male prison inmates were asked to tell two stories: one about a time when they were afraid and another about a time when they had difficulty doing something. Her prediction was that psychopaths would close fewer plot dyads than nonpsychopaths, particularly in the emotional condition. This prediction was based on the hypothesis of Williamson (1991) that psychopathic language difficulties may be related to a more general difficulty in processing emotional stimuli (Patrick, 1994; Hare, 1996). What she found was that psychopaths closed fewer plot dyads than controls in both the emotional and neutral conditions. Although this does provide support for the hypothesis that psychopathic speech is disturbed, it also implies that something more than emotional processing difficulties contributed to the observed effect. Thus it might be useful to consider an alternative hypothesis as to why psychopaths display language deficiencies.

Newman (1998) has proposed that psychopaths, while engaged in goal-directed activity, are less likely to make use of contextual cues which might otherwise enhance their performance. Communication can be thought of as a goal directed activity in which one attempts to convey information (Brown & Yule, 1983). Contextual cues, in this case, could be feedback from the intended audience, past experiences informing the individual's present communication strategy or current information from the environment which provides clues about how to structure one's communication. When psychopaths are attempting to persuade or inform someone, they may have difficulties modulating their attention between the content of their message and other aspects of the interchange which might be important to communicating effectively. Thus psychopaths may come across as confident (missing cues that the audience is skeptical), rude (missing environmental politeness cues) and/or confusing (by focusing on the content of a message at the expense of its form).

If psychopaths do have difficulties processing contextual cues while engaged in goal directed behavior, we might expect that we can reduce any observed linguistic deficiencies by reducing the psychopaths' need to modulate their attention between the content and the form of their message. One way to accomplish this might be by providing a tangible guide to either the communication's content or its form. Given this aid, the psychopaths would not have to hold both elements of the message in their minds and switch their attention from one to the other.

In the present study, participants were asked to tell two stories about the contents of two pictures. In addition, they were given the goal directed task of including seven different story elements in each of their narratives. For one story, participants had to memorize the list of story ideas. For the other, they were able to use a printed list of the story ideas as a reference. Based on the response modulation theory and the existing research on psychopaths' language processing, it was hypothesized that: (1) psychopaths would focus on the content of their narratives (the seven story elements) to the exclusion of their form resulting in less coherent stories than those produced by controls; (2) observed deficits would improve when participants were provided with a tangible guide to story content and (3) the improvement shown by psychopaths should be greater than that demonstrated by controls.

2. Methods

2.1. Participants

The participants for this experiment were 42 Caucasian and 36 African–American male inmates from the Oakhill Correctional Institution in Oregon City, WI. They were classified as psychopathic or nonpsychopathic using the Psychopathy Checklist — Revised (PCL-R; Hare, 1991). This 20-item scale has been shown to be both valid and reliable in the assessment of psychopathy (Hare, 1980, 1991, 1996). Using institutional data and information collected in extensive personal interviews, raters assessed each participant's behaviors and personality in order to determine a score for each item on the PCL-R. Scores range from zero to two, zero indicating the item content is not present and two indicating that it is. A global measure of psychopathy is provided by the summed score which ranges from zero to 40.

In the current experiment, interviews and ratings were carried out by two clinical psychology graduate students, trained in the use of the PCL-R. When possible, two independent ratings of inmates were done to examine reliability. The obtained reliability coefficient (Pearson's product moment correlation of 0.84) is roughly comparable to those obtained by others (Hare, 1991). For the purposes of this experiment, participants were considered psychopathic only if their PCL-R score was 30 or greater and nonpsychopathic if their score was less than or equal to 22. Previous research has demonstrated that such cut off scores differentiate performance, personality and criminal activity in psychopaths and controls (Newman, Schmitt, & Voss, 1997).

There is a tradition in psychopathy research of using some measure of anxiety to subdivide psychopaths into low- and high-anxious groups (Newman & Brinkley, 1997). This is important because prior experimental work has demonstrated that anxiety interacts with psychopathy to predict outcome on many behavioral tasks (Arnett, Smith, & Newman, 1997; Newman, Patterson, Howland, & Nichols, 1990; Smith, Arnett, & Newman, 1992). For this reason, we administered the Welsh Anxiety Scale¹ (WAS; Welsh, 1956) and classified participants as either high- or low-anxious. Caucasian participants scoring 11 or higher on the WAS were considered high-anxious and those scoring less than 11 were considered low-anxious. The corresponding cutting score for African–American participants was 14.

To insure that participants were capable of understanding task instructions, making use of experimental stimuli and responding appropriately to questionnaires, participants were excluded if their institutional file indicated they had less than fourth grade reading or math skills or were currently using any kind of psychoactive medication. We also administered the Shipley Institute of Living Scale (SILS; Zachary, 1986) to examine the possible confounding effects of intelligence on task performance. The SILS is a brief measure of general intellectual functioning. It consists of a 40-item vocabulary test and a 20-item abstraction test, has demonstrated good psychometric properties and has been shown to produce reliable estimates of scores on the Wechsler Adult Intelligence Scale — Revised (WAIS-R; Zachary, 1986).

¹ Although the WAS measures a construct which is broader than the traditional experimental anxiety construct (Watson & Clark, 1984), we will refer to it as 'anxiety' in the interests of brevity.

2.2. Procedure

Following the original PCL-R interview, participants were recalled and given the cover story that we were conducting a test of their memory. Each participant was read a set of instructions explaining that (a) they were going to be required to tell two stories, (b) these stories were going to be based on pictures they would see, (c) they would be given a list of story ideas which needed to be included in the study, (d) they would be paid based on how many of the story elements they included in their story, (e) their stories needed to be coherent narratives with a beginning, middle and end, (f) the stories would be recorded. After the instructions were read and the experimenter answered any questions, participants were presented with two trials.

During each trial the participants were given one of two different lists of story ideas which they were told to study so they could incorporate them into their narrative. Each list contained seven different story ideas. Although the specific story ideas on the individual lists differed in content, they were similar in form. Some examples of the story ideas included on these lists are “the main character has a plan” and “the main character seeks help”. In both trials, participants were given 5 min to study the list of story ideas. Our motivation for providing this lengthy study period was to minimize memory effects and allow the inmates to focus on the structure of the stories.

At the end of the 5 min, the participants were given one of two TAT cards (card number 9 or 18) and they were asked to tell a story about the character depicted in the TAT card. In the *aided* condition, participants also retained access to the list of story elements while they constructed the narrative. In the *unaided* condition, the list was collected when the TAT card was handed to the participant and the participant had to construct their story using only the TAT card as a reference. In order to control for potential ordering effects of TAT card and condition of aid, participants were assigned randomly to one of four conditions. The conditions differed based on which TAT card was used first (card number 9 or 18) and for which story in the set the participant had the benefit of the list as an aid (first or second).

All narratives were recorded on TDK D90 IECE/Type I dynamic audio cassettes using a hand held Panasonic tape recorder with external microphone. Participants who produced two stories were paid somewhere between US\$3 and US\$6 depending on how many story ideas they included in their narratives.

2.3. Coherence ratings

The author and two undergraduate assistants, both blind to the psychopathy ratings of the participants, orthographically transcribed all of the elicited stories. These speech samples were analyzed for coherence which, in this study, was determined by plot unit analysis. This technique involves identifying each instance in which a speaker introduces a story element which will require resolution before the story is completed. These story elements, together with their resolutions, are referred to as plot dyads. Plot dyads are considered completed when a story element is both introduced and resolved. The measure of overall coherence was the number of completed plot dyads adjusted for the number of opened plot dyads. Because the number of plot dyads which could be introduced into a story is virtually limitless, it is typical to select a small number of specific plot dyads which will be coded before conducting the study. The plot dyads coded in this study were the same ones used by Williamson (1991). A complete list of plot dyads used in this study

and their definitions can be found in Appendix A. When possible, two independent ratings were done to assess coding reliability. Interrater reliability for coding plot unit completion, computed using the Pearson product moment correlation for a subset of 52 stories from the sample, was found to be 0.84.

3. Results

Despite preliminary evidence for the reliability and validity of the PCL-R when used with African–American offenders (Kosson, Smith, & Newman, 1990), recent work has suggested that African–Americans do not show expected differences on laboratory tasks found to distinguish between Caucasian psychopaths and controls (Kosson et al., 1990; Thornquist & Zuckerman, 1995; Newman et al., 1997). We did not wish race to be a potential confounding factor in our results so we felt it was appropriate to analyze data for Caucasians and African–Americans separately.

Preliminary analyses were conducted to test for possible group differences in intelligence (i.e. the SILS). Two ANOVA's were conducted, one for each race. Psychopathy and anxiety were used as the between-subjects variables and the WAIS-R estimate of the SILS was used as the dependent measure. The results of these analyses verified that there were no significant main effects or interactions involving intelligence.

Another set of preliminary analyses was conducted to determine if the TAT card the participants used to tell their stories influenced performance. We performed two Analyses of Covariance (ANCOVA) — one for each race. TAT card (9 or 18) was used as the within-subjects variable, psychopathy (high–low) and anxiety (high–low) as the between-subjects variables and number of plot units closed as the dependent measure. Because the number of plot dyads which can be completed is dependent on the number opened, number of plot units opened was used as a covariate. Before completing these analyses, however, we first verified the ANCOVA assumption that the relationship between the number of plot units opened and closed did not differ by group using a regression analysis. The two ANCOVA analyses indicated there were no significant main effects or interactions for which TAT Card (9 or 18) the participants used to tell their stories.

To evaluate the study's a priori hypotheses, we performed two mixed model ANCOVA's — one for each race — with number of plot units closed as the dependent variable. Condition of aid was used as the repeated variable and psychopathy (high–low), anxiety (high–low), and order of the aided condition (first or second) as the between subjects variables². Once again, number of plot units opened was used as a covariate.

For the Caucasian participants, there was a significant main effect for psychopathy ($F(1, 33)=4.26, p<0.05$). Overall, psychopaths closed fewer plot units than controls. There was no significant effect for condition of aid ($F(1, 33)=0.02, ns$) or for the Psychopathy \times Condition of

² In addition to the ANCOVA's, we performed two other sets of analyses which used different methods to control for the amount of speech produced. These analyses were (a) repeated measures ANOVA's with number of plot units opened and number of plot units closed as the repeated measures and (b) ANOVA's with the percentage of plot units closed as the dependent variable. Both sets of these analyses produced the same results as the original ANCOVA's.

Table 1
Means and standard deviations of opened and closed plot units for Caucasian psychopaths and controls

	Plot units	<i>n</i>	Aided condition first		Unaided condition first	
			aided trial <i>M</i> (<i>S.D.</i>)	unaided trial <i>M</i> (<i>S.D.</i>)	aided trial <i>M</i> (<i>S.D.</i>)	unaided trial <i>M</i> (<i>S.D.</i>)
Low-anxious controls	opened	12	5.00 (3.16)	5.25 (1.70)	5.13 (1.89)	5.13 (2.03)
	closed ^a		3.93 (0.76)	3.73 (0.91)	2.33 (0.53)	2.08 (0.63)
High-anxious controls	opened	13	4.40 (2.30)	4.00 (2.55)	4.88 (1.55)	4.00 (1.60)
	closed ^a		2.62 (0.68)	3.35 (0.80)	3.66 (0.54)	3.50 (0.63)
Low-anxious psychopaths	opened	9	5.75 (1.26)	5.75 (2.75)	5.20 (2.77)	5.60 (2.19)
	closed ^a		0.57 (0.77)	1.57 (0.90)	2.97 (0.67)	3.24 (0.81)
High-anxious psychopaths	opened	8	4.50 (2.77)	5.50 (2.19)	4.75 (3.00)	4.50 (2.38)
	closed ^a		3.34 (0.75)	2.77 (0.89)	2.89 (0.75)	2.34 (0.89)

Note: *n* is the cell size, *M* the mean and *S.D.* standard deviation.

^aMeans and standard deviations for closed plot units are adjusted for the number of plot units opened.

Aid interaction ($F(1, 33)=0.10$, ns). Thus, aid did not improve coherence in either group and it was not more beneficial to psychopaths than controls. There was, however, a significant Psychopathy \times Anxiety \times Order of Aid interaction ($F(1, 33)=10.38$, $p<0.01$). Means and standard deviations for the Caucasian participants are presented in Table 1.

Four *t*-tests were performed in order to clarify this three-way interaction. As shown in Table 1, low-anxious psychopaths closed significantly fewer plot units than low-anxious controls when they received the aided condition first ($t=3.97$, $df=19$, $p<0.001$) and they closed nonsignificantly more plot units than low-anxious controls when they received the unaided condition first. By contrast, high-anxious psychopaths closed nonsignificantly more plot units than high-anxious controls when they received the aided condition first and nonsignificantly fewer plot units when they received the unaided condition first.

For the African–American participants, there were no significant main effects or interactions (all *F*'s (1, 27) < 1.0). For the purposes of comparison with the Caucasian's results, we present the main effect for Psychopathy ($F(1, 27)=0.33$, ns), the Psychopathy \times Condition of Aid interaction ($F(1, 27)=0.01$, ns) and the Psychopathy \times Anxiety \times Order of Aid interaction ($F(1, 27)=0.48$, ns). Means and standard deviations for the African–American participants are presented in Table 2.

4. Discussion

The results of the present study support the hypothesis that, for Caucasians, psychopaths' communication is more poorly structured than nonpsychopaths'. Higher levels of psychopathy were associated with fewer completed plot units. This implies that psychopaths set up expectations in their listeners which they failed to address, thus making it difficult to follow their narratives. These findings replicate those of Williamson (1991).

Table 2
Adjusted means and standard deviations of opened and closed plot units for African-American psychopaths and controls

	Plot units	<i>n</i>	Aided condition first		Unaided condition first	
			aided trial <i>M</i> (<i>S.D.</i>)	unaided trial <i>M</i> (<i>S.D.</i>)	aided trial <i>M</i> (<i>S.D.</i>)	unaided trial <i>M</i> (<i>S.D.</i>)
Low-anxious controls	opened	7	4.00 (1.00)	5.00 (2.60)	7.50 (2.12)	7.50 (0.71)
	closed ^a		2.29 (0.76)	2.69 (.90)	3.60 (1.23)	3.10 (1.44)
High-anxious controls	opened	9	6.28 (1.50)	5.43 (2.77)	6.00 (2.82)	4.00 (5.65)
	closed ^a		3.18 (0.65)	3.98 (0.77)	2.99 (1.18)	3.69 (1.42)
Low-anxious psychopaths	opened	10	5.50 (1.29)	4.50 (0.58)	4.83 (1.47)	5.17 (2.40)
	closed ^a		1.54 (0.85)	2.39 (1.02)	2.52 (0.69)	2.83 (0.82)
High-anxious psychopaths	opened	10	3.67 (2.52)	4.33 (2.40)	5.00 (2.52)	5.00 (4.51)
	closed ^a		3.22 (0.96)	4.15 (1.16)	2.52 (0.62)	2.81 (0.75)

Note: *n* is the cell size, *M* the mean and *S.D.* standard deviation.

^a Means and standard deviations for closed plot units are adjusted for the number of plot units opened.

The main effect for psychopathy, however, was qualified by the significant Psychopathy × Anxiety × Order of Aid interaction. This interaction indicates that psychopaths' poor cohesion was only observed under specific circumstances. We originally anticipated that psychopaths would not show global deficits in coherence. In fact, we explicitly manipulated aid and assessed anxiety to examine these variables' impact on psychopaths' coherence. Aid and anxiety, however, did not have the impact we were expecting.

Psychopathy and anxiety appear to be independent constructs (Hare, 1991; Schmitt & Newman, in press), both of which are theoretically related to a participants' performance on a behavioral task. Newman and Brinkley (1997) have suggested that these two constructs may have independent and opposite effects on psychopathic and nonpsychopathic participants. For example, high levels of anxiety might disrupt a control's ability to concentrate and, thus, impair task performance (Watson & Clark, 1984). The same level of anxiety, however, might improve performance in psychopaths by increasing their sensitivity to contextual cues (e.g. Gray, 1987). If this were the case, one might expect high-anxious psychopaths to perform very much like low-anxious controls and low-anxious psychopaths to perform similarly to high-anxious controls on tasks assessing response to both primary and contextual cues. Further, group differences between the two high-anxious groups could wash out as the controls' performance becomes worse and the psychopaths' performance becomes better. This might explain why several studies have found that differences between the laboratory performance of psychopaths and controls is, in fact, often limited to low-anxious groups (e.g. Newman et al., 1990, 1997; Smith et al., 1992; Arnett et al., 1997).

Following Williamson (1991), no explicit predictions were made about anxiety's impact on task performance in the present study. However, we included the Welsh Anxiety Scale so that we could observe such effects if they were present. Consistent with previous research, the difference between

psychopaths and controls was most pronounced in the low-anxious groups (see Table 1)³. The effects of anxiety, however, were further qualified by the order in which participants received the aided condition.

It was originally anticipated that psychopaths' cohesion would suffer when they were required to modulate their attention between the content and the form of their stories. The aided condition was designed to provide a tangible guide to story structure, thus allowing participants to focus on telling coherent stories. But contrary to our predictions, the experimental manipulation did not result in more coherent stories for the Caucasian participants.

Although we did not observe the expected main effect for condition of aid, we did find a significant three way interaction involving psychopathy, anxiety and *order* of aid. In contrast to low-anxious controls, low-anxious psychopaths closed significantly fewer plot units when they received the aided condition first. Thus, when given first, the aid manipulation actually hampered the performance of low-anxious psychopaths relative to controls (see Table 1).

Examination of the transcripts produced by low-anxious Caucasian psychopaths provides a potentially important clue as to why this might be. When presented with the aided condition first, low-anxious psychopaths told extremely sparse stories which included little more than the beginnings of the plot ideas they were told to include in the story. Thus there appears to have been something about receiving the aided condition first which encouraged this group to adopt a set in which they focused on inclusion of plot elements. Further, this focus appears to have interfered with their ability to bring the plot units they introduced to resolution.

Why might low-anxious Caucasian psychopaths have done so poorly in the aided first condition? One possible explanation relates to the relative salience of the aid stimuli as compared to the task instructions. There is some evidence to suggest that psychopaths may be more responsive to immediate and salient cues in their environment. For example, Schmauk (1970), has noted that psychopaths readily learn from mistakes when faced with a visibly salient punishment (i.e. a hand taking away money) but fail to learn from mistakes when presented with punishments with no salient, tangible, physical reference (e.g. electrical shock or verbal feedback).

In the present experiment, the original directions to tell a coherent story are relatively subtle. They are mentioned early in the task and must be remembered by the participants. In contrast, the list of story elements is a tangible, immediately accessible and highly salient cue. Further, participants were told they would be paid for how many of the story elements from the list they included in their narratives. Such incentives might serve to increase the relative salience of the list of story elements when compared to the instruction to tell a coherent story.

The list of story elements contained suggestions for opening plot elements, but provided no guide to closing them. If the low-anxious psychopaths focused on the highly salient story elements

³ It is worth noting that in a previous study, Brinkley et al. (in press) did not find that anxiety moderated psychopathic language production deficits. That study, however, only required participants to generate narratives and included no experimental manipulations. The present results suggest that language production deficits in psychopaths may be moderated by anxiety, but that observing such an interaction may depend upon experimental manipulations which create response sets. In the present study, for example, the distinctive performance of low-anxious psychopaths only became apparent when they received aid in the first condition. Thus, the present results may not contradict those of Brinkley et al. (in press). Rather, they may suggest a potential reason why the Psychopathy \times Anxiety interaction expected in that study was not significant.

at the expense of the less salient instructions to be coherent, this might explain why they would open a number of plot elements, but not close them. This effect would be limited to the aided first condition because psychopaths would need access to the more salient cue in order to develop the response set of focusing on the list to the exclusion of the task instructions.

Clearly, the a priori hypotheses of this study were not fully supported by the present data. According to Meehl (1978), this means one of two things — either the underlying theory is flawed or there were flaws in the experimental design. In the present study, it appears that the latter is the more likely explanation. The aided condition was intended to facilitate response modulation between the content and form of the story. The evidence, however, seems to suggest that in some circumstances, the aided condition actually hampered participants' ability to modulate attention between the various aspects of their narratives. Low-anxious Caucasian psychopaths who received aid first were, in fact, poor at regulating their behavior (speech) while engaged in a goal-directed behavior (inclusion of the plot elements in narratives). So although the a priori hypotheses were not fully supported, the data for Caucasian participants are not necessarily inconsistent with the response modulation hypothesis.

Unfortunately, no conclusions can be drawn about the speech of African–American psychopaths and controls. Performance in these groups did not differ significantly. A close examination of the data suggests that the low-anxious African–American groups showed a similar pattern of results as their Caucasian counterparts. The low-anxious psychopaths did relatively poorly when they received the aided condition first (see Table 2). This effect, however, appears to be about half the size it is in the Caucasian sample and was not significant. This pattern of results is similar to those reported by Kosson et al. (1990). This suggests that either the PCL-R may not identify African–American groups which are as homogenous as their Caucasian counterparts or that the effects of

Table 3
Plot units and definitions used for coding narratives

Problem	Result	Description
Plan	carried out/not carried out	an organized scheme for doing something
Attack	counterattack/wound/flee	attacking a participant with intent to harm
Injury	recovery/death	physical harm to a participant
Pursue	capture/escape/release	chasing a participant to capture or harm
Search	find/not find	looking for something
Negative feeling state	nullified/not nullified	description of narrator as having negative feelings
Villainy	nullified/not nullified	malevolent act committed against narrator
Deception	revealed/not revealed	misleading act or statement
Threat	nullified/not nullified	source of danger or distress
Compete	win/lose	compete for something
Command	obeyed/not obeyed	ordered to do something
Aid	accepted/not accepted	offering of aid
Promise	kept/not kept	promising a participant something
Problem	resolved/not resolved	problem hard for a participant to cope with

Taken from Williamson (1991).

the cognitive processes which underlie psychopathy may be diluted in the African–American population.

In summary, the present results demonstrate that stories told by Caucasian psychopaths are lacking in coherence. Their failure to close previously opened plot units makes their text difficult to follow and suggests some underlying cognitive difficulties. This study involved no obvious emotion manipulation, implying that the observed differences may be due to a more general cognitive difficulty than the affective deficit emphasized in previous work. These results also suggest that the observed linguistic difficulties occur only when low-anxious psychopaths are presented with a highly salient, tangible task (i.e. including specific plot elements in narratives) which, we have argued, replaces telling a coherent story as their primary task.

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