



Dissociation and Amnesia: A Study with Male Offenders

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Abstract

Offenders often claim to have committed their crimes in a dissociative state and some allege amnesia for their criminal actions. Although much research has examined dissociative and related phenomena, such as amnesia, in victims and witnesses to traumatic and criminal events, little research has investigated dissociation in incarcerated offenders, particularly in relation to their offences. The present study used the Peritraumatic Dissociative Experiences Questionnaire (PDEQ), the Dissociative Experiences Scale (DES), and the Multidimensional Inventory of Dissociation (MID) to examine a number of issues concerning dissociative and related phenomena in incarcerated male offenders. Thirty-four percent of the sample reported amnesia for their most recent criminal offence. Among other results, participants' reports of state dissociation at the time of their criminal offences were associated with trait dissociation and amnesia for their offences. However, the reported mean state dissociation was not particularly elevated during the offences. Implications for cognitive and correctional psychology are discussed.

Keywords: Dissociation; amnesia; offenders; correctional psychology

INTRODUCTION

In a recent capital murder case, the defendant was found guilty of beating his wife to death (State of Washington vs. Waldrad, 2000). The defendant claimed he committed the murderous act of violence in an altered, dissociative state of consciousness and that he was amnesic for parts of the violence. He reported experiencing symptoms of dissociation such as detachment, emotional numbing, and altered time perception during the murder. With the assistance of the first author, a psychologist used a series of psychometric inventories to assess whether the defendant experienced dissociation earlier in his life and

during the homicide. Based on these inventories and a comprehensive clinical evaluation, the psychologist subsequently testified that the man had experienced valid symptoms of dissociation at the time of his offence and that his claim of partial amnesia was credible. The court concluded the defendant murdered his wife in a state of diminished capacity. Although the defendant was found guilty and was sentenced to life imprisonment, he was spared the death penalty.

It is not uncommon for expert witnesses to address the constructs of dissociation and amnesia during criminal trials. As with many cases, the

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validity of reports of dissociative phenomena, and related psychological constructs such as amnesia, are primary issues affecting legal decisions (Cima, Merckelbach, Nijman, Knauer, & Hollnack, 2002; Porter, Birt, Yuille, & Hervé, 2001; Porter, Campbell, Birt, & Woodworth, 2003). Although a large body of research has examined dissociative phenomena in victims and witnesses to crime and trauma (Cooper, Kennedy, & Yuille, 2001; Mechanic, Resick, & Griffin, 1998; Spiegel & Cardeña, 1991), curiously, little research has examined dissociation in perpetrators of crime. Indeed, as of 2003, only 10 empirical studies on dissociative phenomena in incarcerated samples had been published (Dietrich, 2003) and only a handful have since been completed. As a result of this relative dearth of research, when perpetrators present with dissociative and related phenomena, expert psychologists, in an attempt to educate the triers of fact, often generalize the research on dissociation in victims and witnesses to the perpetrator context. Although it is logical to assume that many of the strong associations apparent in the victim and witness literature would hold true with perpetrators of crime (e.g., the association between state and trait dissociation; the association between dissociation and amnesia), little research has addressed the validity of these generalizations. This lack of research formed the impetus for the present investigation. This study was designed to examine a number of issues that have both theoretical and practical importance concerning dissociative and related phenomena in offenders. The primary objectives were: (a) to examine the rates of state and trait dissociation in offenders; (b) to investigate the association between state and trait dissociation; (c) to examine the frequency of claims of amnesia for offences; and (d) to assess the relationship between dissociation and amnesia. The two secondary objectives were to (a) investigate the variables associated with the field-observer perspective distinction; and (b) to examine the construct validity of a relatively new measure of trait dissociation, the Multidimensional Inventory of Dissociation (MID; Dell, 2000), through its association with the Dissociative Experiences Scale (DES; Bernstein-Carlson & Putnam, 1993) and the Peritraumatic Dissociative Events Questionnaire (PDEQ; Marmar & Weiss, 1994).

Below is a brief review of the construct of dissociation, followed by a review of the literature pertaining to the dissociative and amnesic experiences of witnesses, victims and, to a lesser extent, perpetrators of crime.

The Construct of Dissociation

The construct of dissociation has a rich clinical history stemming from Pierre Janet's classic studies on hysteria (Janet, 1920). As he discussed over a century ago, psychological trauma can cause a variety of acute and chronic psychological after effects (Foa & Hearst-Ikeda, 1996; Gershuny & Thayer, 1999; Kihlstrom, Glisky, & Angiulo, 1994; van der Kolk, 1996; van der Kolk & van der Hart, 1989). In contemporary nomenclature, many of these psychological consequences are classified under the rubric of dissociation (American Psychological Association [APA], 2000). In terms of acute reactions to trauma, some individuals experience state dissociative alterations of consciousness (Candel & Merckelbach, 2004). For example, a person who dissociates during an event may experience state symptoms of dissociation such as depersonalization ('I don't feel connected to myself') and/or derealization ('this just doesn't seem real'; Marmar et al., 1994). Other forms of state dissociation include alterations in sense of time and 'out of body' experiences, during which the person observes what is happening to him/herself from a vantage point outside the body (Cooper, Yuille, & Kennedy, 2002; Yuille & Daylen, 1998).

State dissociation is often viewed as a defensive reaction that blunts the acute psychological impact of a stressful experience (Chu, 1998; Spiegel, 1993). However, chronic dissociation is often related to Post Traumatic Stress Disorder (PTSD), dissociative disorders (Spiegel & Cardeña, 1991), and/or dissociative amnesia (Mechanic et al., 1998). Further, individuals with PTSD and/or dissociative disorders and/or amnesia often show elevated levels of trait dissociation (Bernstein & Putnam, 1986; Cardeña, 1994; Merckelbach & Muris, 2001; Putnam, 1993). That is, due to their prior traumatic experiences, some individuals dissociate in everyday life (not just during traumas; Chu & Dill, 1990; Dell, 2000; Putnam, 1995; Zatzick, Marmar, Weiss, & Metzler, 1994).

Dissociation and Amnesia in Victims and Witnesses

As indicated above, most research on dissociation has focused on victims and witnesses to traumatic and/or criminal events. Dissociative responses have been researched in relation to a wide variety of crimes and traumas including physical and sexual abuse (e.g., Chu & Dill, 1990; Darves-Bornoz, 1997; Dunmore, Clark, & Ehlers, 1999; Herman, 1996; Mechanic et al., 1998; Spiegel & Cardeña, 1991), natural disasters (e.g., Koopman, Classen, & Speigal, 1994), torture (Weisaeth, 1989), and combat (e.g., Marmar et al. 1994). Most of these

studies have shown that traumatized samples have significantly higher levels of trait dissociation than nontraumatized controls (Foa & Hearst-Ikeda, 1996; Gershuny & Thayer, 1999; Putman, 1995). Researchers have also consistently demonstrated significant associations between state and trait dissociation in traumatized individuals. For example, Marmar et al. (1994) reported a modest association ($r = .41$) between trait and state dissociation in Vietnam veterans who retrospectively rated their 'most threatening' combat experience. Cooper (1999) showed a similar association ($r = .57$) between state and trait dissociation in a sample of prostitutes who described their experiences of sexual trauma. More recently, Hunter and Andrews (2000) demonstrated that state and trait dissociation were associated ($r = .33$) in a sample of women with histories of childhood sexual abuse.

Not only have researchers reported relatively robust correlations between state and trait dissociation in traumatized samples, some researchers have shown that both state and trait dissociation are at least partially related to amnesia. For example, Mechanic et al. (1988) demonstrated that 37% of the rape victims in their study attested to "significant levels of amnesia for parts of the rape" (p. 952) and that the levels of state dissociation reported during the rape experiences were associated with such amnesia. Similarly, Hunter and Andrews (2000) showed that high levels of trait dissociation were associated with amnesia for abuse experiences in a sample of adult victims of childhood sexual abuse.

As stated above, an interesting aspect of state dissociation is the tendency for some individuals to perceive their traumatic/criminal experiences from the perspective of an observer, as opposed to taking the more frequently experienced field perspective (i.e., through one's own eyes; Schacter, 1996). Commonly, when individuals take observer perspectives, they reportedly view the event and themselves from a detached viewpoint (Yuille & Daylen, 1998). For example in Cooper's (1999) study, one participant described her rape experience from the perspective of the light fixture on her bedroom ceiling. Unfortunately, little forensically relevant research attention has addressed the observer perspective phenomenon. In one study, Cooper et al. (2002) asked a sample of prostitutes to recall three experiences: a positive experience, an experience of sexual trauma, and an experience of non-sexual trauma. Those who took an observer perspective during their experiences reported significantly higher levels of state dissociation than those who took a field perspective.

Dissociation and Amnesia in Offenders

As opposed to the large body of research that has investigated dissociative phenomena and amnesia in victims and witnesses to criminal and/or traumatic experiences, little research has examined dissociation in criminal offenders (for a review, see Porteus & Taintor, 2000). This is somewhat surprising because both theory and the extant empirical evidence suggests there may be some interesting relationships between criminal acts, dissociation, and amnesia (Hervé, Cooper, Yuille, & Daylen, 2002, 2003; Porter et al., 2001). For example, many offenders claim to have dissociated during the commission of their crimes (Cooper, Hervé, Kendrick, & Yuille, 2003) and some claim amnesia for their criminal offences (Cima, Merckelbach, Hollnack, & Knauer, in press; Cima et al., 2002; Kopelman, 1987; Leitch, 1948; O'Connell, 1960; Parwatikar, Holcomb, & Menninger, 1985; Pyszora, Barker, & Kopelman, 2003; Taylor & Kopelman, 1984). Furthermore, some offenders develop PTSD as a consequence of their criminal actions (Kruppa, Hickey, & Hubbard, 1995; Pollock, 1999) --- and, at least with victims, there is evidence linking PTSD with state dissociative symptoms (Bernat, Ronfeldt, Calhoun, & Arias, 1998; Cardeña et al., 1998; Dietrich, 2003; Koopman, Classen & Spiegel, 1994; Liebowitz et al., 1998; Griffin, Resick, & Mechanic, 1997). Thus, for some offenders, committing some types of crimes is traumatic (Byrne, 2003).

As with the victim literature, some studies with offenders with trauma histories have shown that many offenders present with considerable levels of trait dissociation. For example, Ellason and Ross (1999) used the DES and reported a mean trait dissociation score of 25.4 in a sample of 13 male sex offenders, considerably higher than the mean score typically found in the general population (e.g., 3.7 – 7.8; Bernstein-Carlson, & Putnam, 1993). Similarly, in Dietrich's (2003) investigation of 93 adult offenders, many scored higher on a measure of trait dissociation than individuals from the general population (also see McLeod, Byrne, & Aitken, 2004). While it is logical to generalize from the victim literature and assume that, as with victims, offenders' reports of state dissociation during the commission of their crimes are related to their levels of trait dissociation, to date, only a few studies have examined the association between state and trait dissociation in criminal offenders. Consistent with the findings with victims, Simoneti, Scott, and Murphy (2000) reported a significant association ($r = .44$) between trait dissociation and violence-specific (i.e., state) dissociation in men

charged with domestic abuse. A similar association ($r = .38$) was reported by McLeod et al. who used the revised PDEQ (Marshall, Orlando, Jaycox, Foy, & Belzberg, 2002) to measure offence-specific (i.e., state) dissociation in a sample of 86 Australian offenders. In terms of state dissociation and memory, McLeod et al. demonstrated that state dissociation was negatively associated with reports of memory for crimes. Surprisingly, few other studies have used the PDEQ to assess for state dissociation in offenders and no published studies have applied the field-observer distinction to offenders.

Clearly, there are a host of untested assumptions and findings that merit replication in the area of dissociation and offending. The present investigation was constructed to assess a few of these assumptions that have support in the victim literature and to replicate other under-investigated findings in the offender literature. The study had the following main objectives: (a) to examine the rates of state and trait dissociation in offenders; (b) to investigate the association between state and trait dissociation; (c) to assess the rate of claims of amnesia for offences; and (d) to examine the association between dissociation and amnesia in offenders. The two secondary objectives were to (a) to examine the variables associated with the field-observer perspective distinction; and (b) to examine the construct validity of a relatively new measure of trait dissociation, the MID (Dell, 2000).

METHOD

Participants

Fifty male offenders who were incarcerated at Mountain Institution, a medium- security Canadian Federal Penitentiary located in Agassiz, British Columbia, Canada, participated in the study between May and August 2001. Mountain Institution is a protective custody prison which houses a disproportionate number of offenders convicted of sexual crimes. The offenders' mean age was 35.02 ($SD = 9.16$; range = 21-56). Sixty-eight percent were Caucasian, 12% were Aboriginal, and 2% were Asian. The remainder claimed to be a mixture of ethnic groups. The present mean age and ethnic background is consistent with other research in Canadian federal penitentiaries (e.g., Cooper & Yuille, in press-a). Participants reported a mean of 11.61 ($SD = 9.16$; range = 1-26) years of education. Their index offences (i.e., their most recent offences) were classified as violent (52%; e.g., murder,

manslaughter, assault), sexual (30%; e.g., sexual assault), or property (12%). The remaining three participants were convicted of arson, people smuggling, and drug trafficking.

Measures

Peritraumatic Dissociative Experiences Questionnaire (PDEQ). The first version of the PDEQ (Marmar & Weiss, 1994) is a 10-item scale that measures participants' retrospective accounts of state dissociative symptomatology regarding a specified incident. With their index offence in mind, participants were asked to rate, using a Likert format, the degree to which they experienced altered body image, altered time perception, amnesia, an out of body experience, derealization, and depersonalization (i.e., 0 = no; 1 = a little bit; 2 = definitely). For the purposes of this study, one question was removed (i.e., "Did you get the feeling that something that was happening to someone else was happening to you?") because it was deemed confusing by participants in past research (Cooper, 1999). Thus, in the present study, PDEQ scores could range from 0 to 18, with higher scores representing higher peritraumatic dissociation. PDEQ scores have been shown to be significantly related to DES scores and to PTSD symptoms (Marmar et al., 1994). The PDEQ is routinely used a measure of state dissociation in both research and clinical practice and has sound psychometric properties (e.g., internal consistency ranging from .75-.85; test-retest reliability of .85; intraclass correlation coefficient of .85; Marshall et al., 2002).

Dissociative Experiences Scale (DES). The second edition of the DES (Carlson & Putnam, 1993) is a 28-item self-report inventory of trait dissociation that yields a mean score of 0-100. The instructions for the DES specify that the questions pertain only to times when the person was not under the influence of drugs and/or alcohol. The DES reliably distinguishes between normal adults, those with PTSD, and those with Dissociative Identity Disorder (DID; Bernstein & Putnam, 1986). Test-retest reliability, internal reliability, construct validity (e.g., discriminative, convergent, and criterion), and other psychometric properties are excellent (Carlson & Putnam, 1993; van IJzendoorn & Schuengel, 1996). Since 1998, the DES had been used in over 250 published articles (Carlson, Armstrong, Loewenstein, & Roth, 1998).

The Multidimensional Inventory of Dissociation (MID). The MID 4.0 (Dell, 2000) is a 259-item self-report measure of trait dissociation. Participants respond to each question on a 10-point

Likert scale. As with the DES, participants in the present study were instructed that the questions pertain only to times when they were not under the influence of drugs and/or alcohol. The 13 primary scales of the MID measure specific dimensions of dissociation: memory problems, depersonalization, derealization, flashbacks, somatoform dissociation, trance, identity confusion, voices, ego alien experiences, self-states and alters, self-alteration, discontinuities of time, and disremembered behaviors. Cronbach alpha values for the dimensions of dissociation in American and Israeli samples have been reported to range from .96 to .98 (Dell, 2000; Somer & Dell, 2005). The MID also includes five validity scales: defensiveness, neurotic suffering, attention seeking behavior, rare symptoms, and factitious behavior. MID scores have the same 0-100 metric as DES scores, and are thus easily comparable to DES scores (Dell, 2001; Lauterbach, Somer, & Dell, 2001). Mean scores on the MID have been shown to be highly correlated with mean scores on the DES ($r = .85-.94$; Dell, 2000; Somer & Dell, 2005; Somer, Dell, & Levinger, 2001).

Procedure

Participants were recruited through posters, 'word of mouth', and by calls to their living units. Participants were informed that the study was about dissociation and, for those that enquired, a brief description of the construct of dissociation was provided. They were assured of confidentiality and were informed that participation was completely voluntary and would in no way affect anything

related to their sentence management. The second author collected the data in the psychology department at Mountain institution. The majority of the participants completed the study individually with little to no assistance from the second author. However, on the rare occasion, two or three participants completed the study simultaneously in different areas of the psychology department. Occasionally, participants asked for clarification concerning items on the questionnaires. In such instances, terms and concepts were fully explained. On two occasions, participants claimed to have been illiterate and were consequently read the questionnaires.

The majority of the participants completed the MID, the DES, and the PDEQ in one session. Occasionally, a participant completed the study in two sessions due to an institutional 'lock-down' or another institutional related interruption (e.g., court, meals). The administration of the scales was counterbalanced into a Latin square design to prevent an ordering effect. Upon completion of the PDEQ, participants were asked if they were under the influence of drugs and/or alcohol at the time of the commission of their index offence. Participants received a \$5 honorarium for their participation.

RESULTS

Rates of Dissociation

Participants' mean scores on the MID, the DES, and the PDEQ are provided in Table 1.

Table 1
Rates of Dissociation

	Scale Means		
	\bar{X}	SD	Range
MID	9.76	11.73	0-55
DES	10.92	10.35	0-37.5
PDEQ	6.50	5.89	0-18

Relationships Between Trait and State Dissociation

As illustrated in Table 2, total scores on all three measures were significantly correlated (Pearson 2-tailed correlations were conducted).

Table 2
Relationships between State and Trait Dissociation

State and Trait Dissociation			
	PDEQ	DES	MID
PDEQ	---	---	---
DES	.52*	---	---
MID	.31**	.76*	---

* $p < .01$ ** $p < .05$

Dissociation and Amnesia

Question number 8 on the PDEQ was used to assess for amnesia for the offenders' offences (i.e., "Were you surprised to find out after the event that a lot of things happened at the time that you were not aware of, especially things that you felt you ordinarily would have noticed?"). Participants were dichotomized based on their answers to this question. That is, participants who reported "definitely" on this item were considered to have reported amnesia. Using this definition, 34% ($n=$

17) of the participants reported having amnesia for at least parts of their reported offences. When the amnesic group was compared to the non-amnesic group, their PDEQ scores for item 8 were removed from the total PDEQ scores as to not artificially inflate the associations between amnesia and state dissociation.

As Table 3 illustrates, participants who reported amnesia for their index offences reported significantly higher levels of state dissociation than those who did not report amnesia ($t[48] = 5.67, p < 0.001$).

Table 3
State Dissociation (PDEQ) and Amnesia

	State Dissociation		
	X	SD	N
No Amnesia	<u>3.27</u>	3.60	33
Amnesia	<u>*10.29</u>	5.08	17

* $p < .001$

As shown in Table 4, in comparison to participants who did not report amnesia for their index offenses, those who reported amnesia had significantly

higher levels of trait dissociation on the DES but not on the MID (DES: $t[48] = 2.10, p < .05$; MID: $t[19.72] = 1.64, p > .10$).

Table 4
Trait Dissociation and Amnesia

	Trait Dissociation (MID)			Trait Dissociation (DES)		
	<u>X</u>	SD	N	<u>X</u>	SD	n
No Amnesia	<u>7.42</u>	<u>7.72</u>	33	<u>8.80</u>	9.06	33
Amnesia	<u>14.30</u>	16.41	17	<u>*15.03</u>	11.71	17

* $p < .05$

Field vs. Observer Perspectives: State and Trait Dissociation

PDEQ Item 5 asked participants (regarding their index offence), “Were there moments when you felt as though you were a spectator watching what was happening to you—for example, did you feel as if you were floating above the scene or observing as an outsider?” Based on their responses to this item, participants were dichotomized as either having a field perspective (i.e., perceiving through one’s own eyes) or an observer perspective (i.e., perceiving oneself from an outside vantage point). Participants who indicated “definitely” on this item were considered to have reportedly taken an

observer perspective during their index offences. Using this definition, 10% ($n=5$) of the participants reported an observer perspective during their reported offences. When the observer group was compared to the field group concerning state dissociation, their PDEQ scores for item 5 were removed from the total PDEQ scores as to not artificially inflate the relationship between observer perspectives and state dissociation.

As illustrated in Table 5, participants who took an observer perspective at the time of their index offences had significantly higher levels of state dissociation (PDEQ) than those who took a field perspective ($t[12.04] = 8.99, p < .001$).

Table 5
Field-Observer Perspectives: State and Trait Dissociation

	Field-Observer Perspectives			
	Observer (n = 5)		Field (n = 45)	
	<u>X</u>	SD	<u>X</u>	SD
MID	16.58	13.47	9.00	11.44
DES	17.21	11.74	10.22	10.09
PDEQ	14.80*	1.79	5.20	4.75

* $p < .001$

As shown in Table 5, participants with observer perspectives at the time of their index offences did not have significantly higher levels of trait dissociation as indexed by their DES scores ($t[48] = 1.50, p > .10$) and their MID scores ($t[48] = 1.38, p > .10$).

The Construct Validity of the MID

Depersonalization and Derealization

PDEQ Item 6 (i.e., “Were there moments when your sense of your own body seemed distorted or changed—that is, did you feel yourself to be unusually large or small, or did you feel disconnected from your body?”) assessed for state depersonalization at the time of the participants’ index offences. PDEQ Item 4 (i.e., “Did what was

happening seem unreal to you, as though you were in a dream or watching a movie or a play?”) assessed for state derealization. As indicated above, the MID has a depersonalization scale (12 items) and a derealization scale (12 items). Within measures (i.e., PDEQ and MID) depersonalization and derealization were significantly correlated (i.e., 2-tailed Pearson correlations) with each other (PDEQ: $r = .48, p < .01$; MID: $r = .90, p < .01$). Further, MID trait depersonalization was significantly correlated with PDEQ state depersonalization ($r = .53, p < .01$). However, MID trait derealization was not significantly correlated with PDEQ state derealization ($r = .20, p > .05$).

Amnesia

As indicated earlier, question 8 on the PDEQ was used as an index of amnesia for the participants’

index offences. As stated above, the MID has a memory problems scale (12 items) and a disremembered behavior/actions scale (12 items). Scores on these two MID scales were significantly correlated with each other ($r = .50, p < .01$). PDEQ Item 8 and the MID disremembered behavior/actions scale were not significantly correlated ($r = .20, p > .05$). Similarly, the correlation between PDEQ Item 8 and the MID memory problems scale was not significant ($r = -.04, p > .05$).

Post Hoc Analyses

As the sample reported a variety of index offences and a considerable percentage of the participants claimed to have been under the influence of

alcohol/drugs at the time of their offences (68%), post hoc analyses examined levels of state dissociation by type of index offence and by reported alcohol/drug use at the time of their offences. Analyses also investigated the percentage of amnesic participants who were under the influence of an intoxicant at the time of their offences.

State Dissociation by Index Offence

As shown in Table 6, state dissociation (PDEQ) levels did not differ by the nature of the participants' index offences ($F[3, 46] = .90, p > .50$).

Table 6
State Dissociation (PDEQ) by Index Offence

	State Dissociation		
	<u>X</u>	SD	Range
Property (n= 6)	6.17	5.81	0-16
<u>Violent</u> (n= 26)	7.65	6.49	0-18
<u>Sexual</u> (n = 15)	4.53	4.61	0-15
<u>Other</u> (n = 3)	7.00	6.56	0-14

Drug/Alcohol Use and State Dissociation

As indicated above, 68% ($n = 34$) of the participants reported they were under the influence of drugs and/or alcohol at the time of the commission of their index offences. As illustrated in Table 7, participants who were under the influence had significantly higher PDEQ scores

than those who were not under the influence ($n = 16; F[1, 48] = 8.60, p < .01$). It was also revealed that 15 out of the 17 participants (88%) who reported amnesia for their index offences were under the influence of an intoxicant during their offences.

Table 7
Drug/Alcohol use and State Dissociation

	State Dissociation		
	N	<u>X</u> PDEQ	SD
Under the Influence	34	8.06*	6.20
Not Under the Influence	16	3.19	3.37

* $p < .01$

DISCUSSION

The present study was conducted to explore dissociative and related phenomenon in a sample of offenders. We had four primary objectives. First, we examined the reported rates of dissociation in offenders. Second, we assessed the association between state and trait dissociation. Third, reported rates of amnesia were examined and, fourth, the association between amnesia and dissociation was assessed. In addition we had two secondary objectives. These were to examine the variables associated with the field-observer perspective and to assess the construct validity of the MID.

With respect to our first objective, participants in the present study reported lower levels of DES trait dissociation (10.92) than have been found in other studies with sexual offenders (i.e., 24.9; Ellason & Ross, 1999) and with mixed (i.e., violent and non violent) samples of offenders (i.e., 19.1; McLeod et al., 2004). The participants' reported rate of trait dissociation is slightly higher than what has been typically found in the general adult population (3.7 - 7.8) and is consistent with findings from samples with anxiety (10.4) and affective disorders (6.0 - 12.7; Bernstein-Carlson & Putnam, 1993; van IJzendoorn & Schuengel, 1996). Unfortunately, no published research has used the MID with offender samples. In terms of state dissociation and offending, McLeod et al. reported substantially higher PDEQ scores in their sample of violent (15.2) and non-violent offenders (16.4) than what was demonstrated in the present investigation (6.50). These differences partially reflect methodological issues as McLeod et al. used the revised version of the PDEQ and we used the original version and deleted an item. Note, however, that the original version of the PDEQ has been used in research with victims of crime and trauma and the present mean rate of state dissociation is considerably lower than what has been reported in these studies. For example, in Cooper, Kennedy, and Yuille's (1999) research with prostitutes, the participants reported mean PDEQ scores of 12.3 and 11.3 in relation to sexual and non-sexual traumatic experiences, respectively. As well, the prostitutes reported a mean PDEQ score of 6.4 in relation to positively valenced experiences. The present participants' reports of state dissociation are in line with this latter figure and suggest the average participant in the present study did not report an elevated level of state dissociation during his index offence.

In terms of our next primary objective, we showed the occurrence of dissociative symptoms during participants' criminal actions was associated

with their reported levels of trait dissociation. That is, PDEQ scores (state dissociation) were significantly correlated with both DES scores and MID scores (trait dissociation). These findings are congruent with the reported associations between state and trait dissociation among victims of trauma (Hunter & Andrews, 2000; Marmar et al., 1994) and with offenders of crime (McLeod et al., 2004; Simoneti et al., 2000). Issues of retrospective reporting of dissociative symptoms aside (see Candel & Merckelbach, 2004), theoretically, these findings suggest a high dissociative disposition may facilitate the development of state dissociative symptoms during a specific event. Of course, the findings could also suggest state dissociation leads to trait dissociation or there is a third variable related to both. These findings must be viewed with caution, however, because offence specific (state) dissociation occurred more frequently in participants who were under the influence of drugs and/or alcohol at the time of their offences. Similarly, a high percentage of participants who reported amnesia also claimed to have been under the influence of an intoxicant at the time of their offences. Although there was no valid way to assess whether the participants were actually intoxicated, their reported levels of both state dissociation and amnesia may have been chemically induced. Certainly, we cannot claim to have measured only 'pure' state dissociation and non-organic amnesia. However, alcohol and drugs are quite commonly ingested before the commission of crimes (Lightfoot, 1995; Pyszora et al., 2003). Indeed, Franklin, Allison, and Sutton (1992) reported that 54% of a sample of 13,666 American inmates (aged 14-87) reported being under the influence of a substance during the commission of violent crimes. Similarly, Kouri, Pope, Powell, Oliva, and Campbell (1997) illustrated that 58% of their sample of 133 offenders reported being intoxicated during their index offences and an additional 6% indicated that they were experiencing withdrawal symptoms. The present rate of participants who reported being 'under the influence' (68%) is slightly higher in the present study but remains comparable to these estimates. Future studies should assess for state dissociation and amnesia in equal samples of intoxicated and non-intoxicated participants in order to separate pure state dissociation from chemically induced dissociation and dissociative amnesia from organic amnesia.

Our third primary objective was to examine the reported rates of amnesia for offenders' index offense(s). Consistent with the literature on victims (Mechanic et al., 1998) and perpetrators of crime (Gudjonsson, Hannesdottir, & Petursson, 1999;

Parwatikar Holcomb, & Menninger, 1985), we showed that a considerable minority of participants claimed to have experienced amnesia for at least parts of their reported crimes. The reported rate of amnesia found in the current study (34%) is in line with the rates reported in previous research with offenders (25-45%; Cima et al., 2002; Kopelman, 1987; Pyszora et al., 2003) and victims of crime (37-44%; Darves-Bornoz, 1997; Elliott & Briere, 1995; Mechanic et al., 1998). It is also comparable to reported rates of amnesia for ordinary but nevertheless significant life experiences (e.g., high school graduation, summer camp) in the general population (28-60%; Read, 1997; Read & Lindsay, 2000). Thus, there are converging lines of evidence from a variety of different samples that suggest amnesia for significant life experiences (e.g., criminal acts) is not uncommon and is typically illustrated by a base rate of between 25-60%, depending on the sample studied.

In terms of our fourth main objective, in line with studies of victims of crime (Hunters & Andrews, 2000; Mechanic et al., 1998) and offenders (Cooper et al., 2003), we showed that participants who reported amnesia had higher levels of both state and trait dissociation than those that did not report amnesia. These findings have both theoretical and practical importance. Theoretically, these findings add to a burgeoning body of literature that suggests dissociative processes negatively affect the processing and recall of criminal/traumatic events (Foa & Hearst-Ikeda, 1996; van der Kolk & van der Hart, 1989). Practically, these findings suggest that, when memory distortions are an issue in the forensic context, the witness in question (i.e., perpetrator, victim, bystander) should be assessed for symptoms of both state and trait dissociation. It is important to note that, as others have suggested, there is no direct association between dissociation and amnesia (McLeod et al., 2004). That is, some individuals dissociate during events but do not report amnesia. Our results simply suggest that, at times, dissociation can be a factor related to amnesia. Clearly, research is needed to investigate the variables in which dissociation leads to amnesia and in which it leads to detailed recollections.

With regards to our secondary objectives, our findings related to the field-observer perspective distinction support previous research. As with Cooper et al.'s (2002) research with prostitutes, in the present investigation, participants who reportedly took observer perspectives during the commission of their index offences had significantly higher levels of state dissociation than participants who took field perspectives. Of course,

forensic clinicians should not rely solely on the results of self-report inventories in the determination of the validity of claims of state dissociation, amnesia, and observer perspectives. However, the present findings should encourage researchers to use converging, multi-modal approaches (e.g., clinical interviews, self-report testing, examination of background and collateral information) to rule out the possibility of malingering/deception (Cima et al., 2002; Cooper & Yuille, in press-a).

Finally, our findings add to the construct validity of the MID. Consistent with other research (e.g., Somer & Dell, 2005), MID scores correlated strongly with scores on the DES, the gold standard self-report measure of trait dissociation. MID scores were also significantly correlated with scores on the PDEQ, an increasingly used measure of state dissociation. The significant correlation between scores on the MID depersonalization subscale and scores on the relevant item on the PDEQ (which taps depersonalization) further supports the construct validity of the MID. Although this was the first study to use the MID on a correctional sample, if robust construct validity is found through future research, the MID may be a useful tool for both researchers and practitioners in the forensic context, as it contains subscales that assess different dissociative phenomena. Further, the MID also contains validity subscales that may prove to have utility in the forensic context. The small sample size in the present investigation and a lack of an external measure of malingering precluded an examination of the usefulness of these validity subscales.

In addition to the possibility of chemically induced dissociation and amnesia, the lack of an external measure of malingering, and a small sample, the present study was limited by its retrospective nature and non-random selection process. As state and trait dissociation were assessed at the same point in time, it is not possible to establish a causal relationship. In fact, as alluded to earlier, it is possible that a highly dissociative disposition might have influenced retrospective reports of state dissociative symptoms. Alternately, participants may have developed a dissociative disposition subsequent to committing their index offenses. This latter explanation is, however, somewhat less probable as both the DES and the MID assess for lifetime dissociative experiences. Prospective studies with randomly selected participants and larger samples would increase the generalizability of these findings and would better afford an investigation of causal relationships between state and trait dissociation.

The present study is also limited by its failure to assess for psychopathy. Considering that criminal psychopaths constitute approximately 15-25% of incarcerated North American correctional samples (Hare, 1991) and have a unique affective deficit (Abbott, 2001; Blackburn, 1979; Cleckley, 1941; Hare, 1993; Patrick, 1994), it may be the case that psychopathic offenders are less prone to dissociate and/or develop amnesia than are other offenders (Porter et al., 2001). If so, dissociative symptoms and claims of amnesia might be more common in the correctional population when psychopaths are removed from the data pool. Conversely, considering the fact that psychopaths regularly engage in deception (Cooper & Yuille, in press-b; Peticlerc, Hervé, Hare, & Spidel, 2000; Seto, Khattar, Lalumié, & Quinsey, 1997), psychopaths in the present investigation may have malingered their symptoms of dissociation and amnesia, thereby leading to an erroneously high level of dissociation and amnesia in the total sample.

Finally, the measurement of amnesia in the present study was a limitation. We relied on a single item on the PDEQ that taps memory impairments. Although the authors of the PDEQ refer to the item as an assessment of amnesia, and most of the present findings related to amnesia are consistent with other research, it is clearly the case that future research should rely on more stringent definitions of amnesia.

The results of this study do not lead to any firm conclusions regarding legal issues such as criminal responsibility when an offender commits a crime in a dissociative state and/or claims amnesia (for a review of such issues, see McLeod et al., 2004; McSherry, 2003, 2004). The results simply suggest claims of amnesia related to the perpetration of crimes are not uncommon and appear to be partially linked to the reported occurrence of state dissociation and an elevated trait dissociative disposition. Considering the dearth of research on dissociation in offenders, it is hoped the present research will spark future empirical and theoretical endeavors in this area. Future researchers should employ better measure of amnesia, external measures of malingering, assess for psychopathy, and control for substance induced dissociation and amnesia in their efforts.

Keeping the above limitations in mind, the present results support the utility of screening for dissociation in forensic samples. When completing a risk assessment, for example, it would be informative for the evaluator to know whether the offender dissociated during his/her offence(s). Such symptoms, if valid, may relate to memory impairments as the present research suggests and to

PTSD symptoms as the victim literature suggests (Griffin et al., 1997; Mechanic et al., 1998). Concerning treatment, offenders with high dissociative dispositions and/or unresolved traumas may benefit from treatment strategies that focus on these issues (Ellason & Ross, 2000; Dietrich, 2003). Indeed, considering the level of traumatic experiences in the offender population (Briggs & Hawkins, 1996; McElroy et al., 1999; Romano & De Luca, 1997), and given the link between dissociation and PTSD (Bernat et al., 1998; Cardeña et al., 1998; Liebowitz et al., 1998), offenders with trauma histories, dissociative symptoms, and/or PTSD, may benefit from rehabilitation efforts that converge on these areas.

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