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Do child molesters hold distorted beliefs? What does their memory recall tell us?

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Abstract *Do child molesters hold distorted beliefs (or cognitive distortions) that support their sexual offending? To test this hypothesis, we asked 28 child molesters and 20 inmate controls to read a description of child molestation. Within this vignette, we planted 10 ambiguous descriptions. If child molesters' information processing were driven by cognitive distortions, we hypothesized that they would use this knowledge to disambiguate and cognitively distort each description. This was tested by examining participants' free recall of the vignette. Chi-square tests of association showed that both child molesters and inmate controls had various memory distortions for the vignette, but could not be differentiated based on the numbers of cognitive distortions in their recall classifications. In other words, our findings did not support the widely held cognitive distortion hypothesis—a finding which could promote substantial revision of both how we view child molesters' "cognitive distortions", and how we treat them.*

Keywords *Child molester; cognitive distortion; memory*

Introduction

"I'm not really sure why she told. It wasn't because she didn't like it. I mean she did as much as I did at the end of the day."

This statement was made by a child molester convicted of a sexual assault against a 13-year-old girl. Such statements are not unusual. Ask any clinician or prison psychologist, and they will tell you that they hear them on a daily basis. But what do these statements represent? Are they unveiled glimpses into the general belief system of the child molester, or post hoc justifications and excuses? In the child molester literature, post-offence statements such as these are thought commonly to indicate distorted beliefs. These distorted beliefs are termed *cognitive distortions* following Abel, Becker and Cunningham-Rathner's (1984) pioneering work with child molesters over two decades ago.

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Recently, Ward (Ward, 2000; Ward & Keenan, 1999) has provided a rigorous definition of cognitive distortions. He argues that cognitive distortions are the product of general underlying *implicit theories* or schemas. Throughout this paper the term implicit theory will be used to refer to sets of related beliefs that are connected by an underlying maladaptive theory about the world and the people in it (for example, a theory that the world is full of children who are sexually flirtatious and provocative; Ward & Keenan, 1999). Implicit theories are similar to scientific theories in that they are used to explain, predict and interpret interpersonal phenomenon (Wellman, 1990). The reasons why some individuals develop maladaptive implicit theories are a little unclear. However, it has been hypothesized that maladaptive implicit theories may develop during childhood to explain atypical occurrences such as child sexual abuse (Ward, 2000).

Ward identified five implicit theories that he thought might account for the documented post-offence statements of child molesters: children as sexual beings, entitlement, dangerous world, uncontrollability and nature of harm. The *children as sexual beings* implicit theory refers to beliefs that children are sexual beings who enjoy, and even seek out, sexual relations with adults. The *entitlement* implicit theory refers to beliefs that some individuals are entitled to behave in certain ways towards other, more inferior, individuals. The *dangerous world* implicit theory refers to the belief that the world is a threatening place. This may result in two types of belief. One is the belief that individuals should fight back against hostile individuals, who may include children. The other is the belief that it is mainly adults who are hostile and so children are viewed as comforting and less threatening individuals. The *uncontrollability* implicit theory refers to beliefs that some behaviours are beyond an individual's control. Finally, the *nature of harm* implicit theory refers to beliefs that sexual behaviour, by itself, is rarely harmful, even if the recipient is a child.

Ward argues that child molesters' use implicit theories to interpret, and make sense of, social information. For example, a child molester may use the children as sexual beings implicit theory to interpret the behaviour of a child who runs up to cuddle him. This inappropriate interpretation of sexual intent may then lead to an equally inappropriate response (i.e. sexual molestation of that child). It is important to note here that some of the implicit theories outlined could be held by a wide range of offenders (Polaschek & Ward, 2002), but the ones we intend to focus on in our study are child molester-specific (i.e. children as sexual beings and nature of harm).

The concept of implicit theories in child molesting is important for three main reasons. First, using information processing theory, implicit theories explain where the post-offence statements of child molesters originate. Secondly, implicit theories help to explain how some men break down their inhibitions and sexually offend against a child (e.g. Ward, Loudon, Hudson & Marshall, 1995; Ward & Siegert, 2002). In other words, implicit theories may facilitate and maintain sexual abuse against children. Thirdly, implicit theories may be identified and restructured during therapy (see Drake & Ward, 2002; Drake, Ward, Nathan & Lee, 2001). However, implicit theories have been constructed from the self-reported cognitions of child molesters; in other words, these self-reported cognitions may not necessarily be representative of child molesters' *beliefs*.

So what is the empirical evidence to support the hypothesis that child molesters hold cognitive distortions in the form of implicit theories (referred to hereafter as the *cognitive distortion hypothesis*)? Typically, researchers ask child molesters to rate their agreement with cognitive distortions on questionnaires that have been constructed from other child molesters' post-offence statements (e.g. Abel et al., 1984; Bumby, 1996; McGrath, Cann & Konopasky, 1998; Tierney & McCabe, 2001). Some studies have shown that child molesters have significantly higher total scores on these measures than non-sexual offending groups (e.g.

Bumby, 1996; Hanson, Gizzarelli & Scott, 1994; Hayashino, Wurtele & Klebe, 1995). However, determining what child molesters' cognitive distortion scores look like when they are placed along a *strongly disagree* to *strongly agree* response format shows something very interesting—child molesters rarely agree outright with cognitive distortions (e.g. Bumby, 1996; Gannon, in press). In other words, child molesters are distinguished from control groups on the basis of *strength of disagreement* only. Other questionnaire studies have been unable to differentiate child molesters, statistically, from non-sexual offenders (e.g. Tierney & McCabe, 2001 using the Child Molester Scale developed by McGrath et al., 1998), or have reported such low cognitive distortion endorsement in child molesters that it would be pointless recruiting a control group for any kind of comparison (e.g. Langevin, 1991). Interestingly, researchers fail to use any of these results as an indication of possible falsification of the cognitive distortion hypothesis. Instead, they keep the cognitive distortion hypothesis intact, by employing the *faking hypothesis*; that is, they imply that child molesters are hiding their distortions from us (Kolton, Boer & Boer, 2001; Langevin, 1991).

In one of the only experimental studies testing the faking hypothesis to date, Gannon (in press) gave child molesters a transparent cognitive distortion questionnaire to complete under standard pen-and-paper conditions. As she predicted, molesters tended to disagree with the majority of items on the questionnaire—a finding explained typically using the faking hypothesis. Gannon revisited the same molesters and re-administered her questionnaire. This time, however, she attached half the child molesters to a fake lie detector, telling them that it would detect dishonest responses on the questionnaire. The other child molesters simply completed the questionnaire again under standard conditions and acted as controls. She found that child molesters who disagreed initially with cognitive distortions on the questionnaire did *not* increase cognitive distortion endorsement on the same questionnaire when attached to the fake lie detector. In other words, she found no support for the faking hypothesis (or hidden cognitive distortions).

One explanation for the results reported in Gannon's (in press) study and the other inconsistencies highlighted in the questionnaire literature is that some child molesters do not have distorted beliefs or implicit theories. Continuing to study the post-offence statements of child molesters, using transparent questionnaire methods, leaves this important hypothesis untested. Do child molesters really hold different beliefs to other offenders who have no history of sexual assault convictions? The study reported in this paper aims to strengthen Gannon's (in press) findings concerning cognitive distortions. This time, using some of the same participants from Gannon's study, we use memory recall to directly test the cognitive distortion hypothesis.

Memory recall is a valuable tool for providing insight into the belief system of individuals. There are many theories describing how memory functions (Roediger, 1980), but researchers generally agree that memory is reconstructive (e.g. Neisser, 1981; Schacter, 2001; Vincente & Brewer, 1993). This is because individuals use their beliefs to make sense of, and impose meaning upon, ill-defined or ambiguous social information (Hollon & Kriss, 1984; Sutherland, Pipe, Schick, Murray & Gobbo, 2003). Consequently, when individuals are asked to remember information, the account that they give is full of additions, omissions and interpretations that reflect the use of underlying interpretative theories (see Bartlett, 1932 for an early description of the constructive nature of remembering). Put simply, individuals use their schemas to guess and reconstruct information (Hirt, McDonald & Markman, 1998).

In the following study the constructive nature of remembering is used to test the cognitive distortion hypothesis with child molesters. A factually informed vignette is developed describing an instance of child molestation. Within this vignette, several ambiguities are constructed that may be interpreted using many of the child molester-specific implicit theories

proposed by Ward and Keenan (1999). If, as assumed commonly in the child molestation literature, child molesters hold distorted beliefs or implicit theories that bias their information processing, they should use these to interpret and reconstruct vignettes when asked to recall the vignette. In addition to this, if distorted beliefs are to have any causal explanation in child sexual abuse, then they should also be shown to discriminate child molesters from other criminals who have not sexually offended against children.

Method

Participants

A total of 48 participants agreed to take part in this study. Twenty-eight of these were child molesters, the majority of whom ($n=25$) had taken part in Gannon's (in press) fake lie detector study (15 had actually been connected to the fake lie detector in Gannon's study and 10 in the control group). The remaining three participants were new recruits for this study. Each of the 28 child molesters had sexually offended against their family member (biological or non-biological). These men were aged from 25 to 70 years ($M=47.4$, $SD=11.8$) and their victims' ages ranged from 1 to 12 years. The number of years that these men had spent in formal education ranged from 10 to 15 years ($M=12.3$, $SD=1.4$), and their average estimated full scale IQ using the National Adult Reading Test (NART; Nelson, 1982) was 110 ($SD=9.2$). The majority of these child molesters ($n=23$) were recruited from three Vulnerable Prisoner Units in English prisons. The others were from a residential treatment centre for child molesters in England. Ten child molesters had completed a cognitive-behavioural treatment to help restructure their distorted beliefs, two were part-way through and 16 were untreated.

The remaining 20 participants were inmate controls with no convictions for sexual assault recorded on file. We chose these men as our control group because we anticipated that they would be better matched on educational level, IQ and current environmental setting than a community control group. The majority of inmate controls were imprisoned for non-contact offences such as theft or fraud ($n=16$) and the rest were imprisoned for a contact offence such as manslaughter. These men were aged from 19 to 54 years ($M=26.5$, $SD=8.4$), the number of years they had spent in formal education ranged from 9 to 13 years ($M=11.4$, $SD=0.88$) and their average estimated full scale IQ using the NART (Nelson, 1982) was 110 ($SD=4.4$). These offenders were recruited from two main wings in English prisons.

The groups differed significantly on age, $t(46)=6.72$, $p<0.001$, with the child molesters having a higher mean age than the inmate controls ($M=47.4$, $SD=11.8$ versus $M=26.5$, $SD=8.4$). For the number of years in formal education, a Mann-Whitney U -test was performed because the data from both samples were not normally distributed. This showed that the groups did not differ significantly on the number of years that they had spent in formal education, $z=1.72$, $p=0.09$. Both groups' average estimated full-scale IQ using the NART (Nelson, 1982) was 110. Five of the child molesters and two of the inmate controls had to have the vignette read to them. They stated their recall verbally to the researcher.

Ethical considerations

The University of Sussex Human Ethics Committee approved all procedure and materials for this study. At testing, all participants read (or had read to them) a consent form outlining: (a) details of the study, (b) the need to check previous record on file and (c) their rights as a

participant according to the British Psychological Society. Participants were required to sign this form before they participated in this research.

Materials

A vignette, describing an instance of child molestation, was constructed from two main sources: (a) a review of relevant literature investigating child molesters' offence characteristics (see Elliott, Browne & Kilcoyne, 1995; Lang & Frenzel, 1988) and (b) a review of child molester offence characteristics using files at a local prison. Within the vignette, 10 ambiguous descriptions were used that could be interpreted using distorted implicit theories. They tapped into the implicit theory most likely to be associated specifically with child molesters: children as sexual beings. The ambiguous descriptions, the relevant implicit theory that they tap and the hypotheses are outlined in Table I.

The final vignette, given to offenders, did not include any identifying information of the ambiguous descriptions. However, in the version that follows, each ambiguous description is numbered in bold and underlined. The relevant implicit theory and the identifier for each ambiguous description is presented in parentheses.

Rupert and Mary went to the local Chinese restaurant to talk about recent marriage problems. **1. [Uncontrollability—Drink]—By the end of the night, Rupert was**

Table I. Description of Ward's implicit theories, the 10 ambiguous descriptions constructed to test these and the resulting hypotheses.

Implicit theory	Ambiguous description
Children as sexual beings (CSB)	<ul style="list-style-type: none"> • Child walks in on adult male in the shower • Child wears "little white frilly night-dress" • Child tells adult male she doesn't understand sexual education • Adult male's dressing gown comes undone and child stares at penis • Child puts her hand on adult male's thigh while presumably asleep • Adult male places child's hand on his penis while he masturbates
Description	
Children are provocative, active initiators of sex	
Hypothesis	
Child molesters may recall the child being more sexually provocative, or sexually active, than that stated in the vignette	
Dangerous world (DW)	<ul style="list-style-type: none"> • Wife falls asleep while adult male is showing affection • Child leaves "large red marks" on kitchen lino while drawing
Description	
People are hostile and menacing	
Hypothesis	
Child molesters will interpret these acts as hostile	
Uncontrollability (UNC)	<ul style="list-style-type: none"> • Adult male asks his wife to hurry up with her drink (adult male is not described drinking any alcohol)
Description	
Individuals are at the mercy of factors beyond their control	
Hypothesis	
Child molesters may recall the adult male drinking, or blame his sexual abuse on drinking	
Nature of harm (NOH)	<ul style="list-style-type: none"> • The child lets out a "small whimper" during the abuse
Description	
Children are unharmed by sexual activity	
Hypothesis	
Child molesters may recall this noise as a sign of enjoyment	

touching Mary's leg and asking her to hurry up with her drink so that they could have an early night.

When they got home, Sophie (their daughter) was fast asleep in bed. When the baby-sitter had been paid, Mary went straight to the bedroom while Rupert brushed his teeth.

2. [Dangerous world—Wife]—When Rupert returned to the bedroom and started to cuddle Mary, she said she didn't feel too good and fell asleep.

3. [Children as sexual beings—Shower]—Rupert was in the bathroom getting undressed for a shower when he saw the door slowly open. It was his stepdaughter Sophie. When Rupert went downstairs to make himself a coffee, he heard footsteps on the new kitchen lino.

4. [Children as sexual beings—Nightie]—He turned around and saw his stepdaughter standing by the fridge in a little white frilly nightdress. He asked her what she was doing up so late and she told him that she wanted a drink of Ribena. He told her he would get her one after he had made his coffee.

While he was making his coffee, he looked over at Sophie and saw that she was innocently playing with her long hair. Sophie started chattering on about her day in school. **5. [Children as sexual beings—Babies]—She told him that the teachers had mentioned something about how babies were made, but she didn't really understand it.** Rupert started daydreaming as he made his coffee.

Sophie was bored and so she picked up a big marker pen and sat on the floor drawing on a piece of paper. **6. [Dangerous world—Stain]—While she was scribbling on the paper, she left large red marks on the new kitchen lino.** When Rupert saw what had happened he tried to wipe the marks off the lino. However, the pen had left a large pink stain, which he couldn't shift. **7. [Children as sexual beings—Penis]—As Rupert was kneeling on the floor he noticed that his dressing gown was open and Sophie was staring at his penis.**

When Rupert walked upstairs to bed, he noticed that Sophie's bedroom door was open. He walked into the bedroom and sat on the side of her bed. **8. [Children as sexual beings—Thigh]—Sophie turned over and put her hand on his thigh.** Rupert put his hand inside Sophie's knickers and heard **9. [Nature of harm—Whimper]—Sophie let out a small whimper.** **10. [Children as sexual beings—Masturbate]—He then removed Sophie's knickers, and placed her hand on his penis while he masturbated.**

Procedure

Each participant was instructed to carefully read or, for those with reading difficulties, listen to the vignette. After they had read or listened to the vignette once, the vignette was taken away and participants were given four neutral questions to answer about the vignette (e.g. "if you had to guess, do you think that the writer of this passage was male or female?"). These questions were given to minimize participants' expectancy that they would be asked to recall the vignette. Following these questions, and a 40-minute interval consisting of unrelated tasks, participants were asked to recall as much as they could remember about the vignette. The 40-minute time interval was chosen for two main reasons. First, previous testing showed that longer intervals produced recall of very poor quality. Secondly, research suggests that false recall can occur almost immediately after encoding (e.g. Roediger & McDermott, 1995). Participants either wrote down their own recall or, for those with writing difficulties, recalled the vignette verbally while the researcher wrote down the recall. Participants were given unlimited time to do this.

In addition, to assess the transparency of this method, participants were asked to write a few lines indicating what they thought the study was about. They were also asked to indicate how certain they were that their recollection of the vignette was accurate on a seven-point Likert scale from 1 (extremely unsure) to 7 (extremely sure) and to indicate how close the vignette was to their own offence(s) from 1 (extremely unclosed) to 7 (extremely close).

Results

Before coding participants' recall for memory distortions, *t*-tests were used to determine whether the groups differed significantly on (a) the number of words in their free recall accounts, and (b) the number of ambiguous descriptions referred to in their free recall accounts. Although child molesters used slightly more words in their recall than inmate controls ($M = 154.3$, $SD = 68$ versus $M = 140.5$, $SD = 67.6$) and inmate controls referred to more ambiguous descriptions ($M = 6.3$, $SD = 2.4$ versus $M = 5.6$, $SD = 2.1$), neither difference was statistically significant, $t(46) = 0.69$, $p = 0.49$ and $t(46) = 1.10$, $p = 0.29$ respectively.

Recall coding

Inter-rater reliability. Ambiguous descriptions (defined as the text underlined in the vignette) were rated independently by two postgraduate raters, both blind to the grouping status of the participant. Each rater used implicit theory categories taken from Ward and Keenan (1999, pp. 827–832) to classify each of the descriptions into one of the following: (a) correct recall, (b) cognitive distortion, (c) other distortion and (d) recall failure.

Descriptions were classified as *correct recall* if the recall was judged to have retained the original ambiguity of the text. For a description to be classified as a *cognitive distortion* the meaning of the ambiguous text was judged to have been reinterpreted using the relevant implicit theory. This could be due to either the addition or omission of text information. Descriptions were coded as *other distortion* if the meaning of the description had been reinterpreted in any other way. Again, this could be due to either addition or omission of text information. Finally, if no reference had been made to the description anywhere in the recall then it was classified as a *recall failure*. Table II presents an example of this coding scheme.

To ensure that no cognitive distortion was omitted, three strategies were employed. First, if a participant recalled a description and distorted it in line with any of the other implicit theories outlined by Ward and Keenan (1999), this was still classified as a cognitive distortion. Secondly, distortions relating to any one of the 10 descriptions could occur anywhere in the vignette. Thirdly, raters were instructed to note down any extra cognitive distortions, not related to the ten descriptions. None were noted. Two raters coded half of the scripts. Inter-rater reliability was high ($\kappa = 0.89$) and disagreements were discussed and agreed upon.

Table II. Example of statements fitting into coding classifications for “Nancy let out a small whimper”—nature of harm implicit theory.

Coding classification	Example of statement
Correct recall	“She let out a whimper”
Incorrect recall	
Cognitive distortion	“She squealed with delight”
Other distortion	“Nancy said something”
Recall failure	No reference made to description

Recall analysis

For each ambiguous description, calculations were made of the number of participants in each group who were classified into each recall category (correct recall, cognitive distortion, other distortion or recall failure). A χ^2 test of association was then conducted for each separate description to examine whether the child molesters were significantly associated with cognitively distorted recall. Because of the number of comparisons made, and the problems of Type 1 and Type 2 errors, readers should view cautiously p values between 0.01 and 0.10. The overall pattern of recall classifications and associated χ^2 analyses are summarized in Table III. This main pattern of results is now summarized according to the implicit theories that each ambiguous description was hypothesized to tap.

Table III. Summary of recall classifications and the associated χ^2 value for ambiguous descriptions.

Ambiguous description	Recall classifications % (n)				χ^2	p
	Correct	Recall failure	Cognitive distortion	Other distortion		
CSB 1: Shower						
Inmate controls	15 (3)	75 (15)	5 (1)	5 (1)	—	—
Child molesters	14 (4)	75 (21)	4 (1)	7 (2)		
CSB 2: Nightie						
Inmate controls	20 (4)	60 (12)	10 (2)	10 (2)	—	—
Child molesters	14 (4)	71 (20)	4 (1)	11 (3)		
CSB 3: Babies						
Inmate controls	30 (6)	30 (6)	5 (1)	35 (7)	4.52	0.06
Child molesters	18 (5)	68 (19)	14 (4)	0		
CSB 4: Penis						
Inmate controls	55 (11)	20 (4)	10 (2)	15 (3)	0.79	0.85
Child molesters	46 (13)	18 (5)	11 (3)	25 (7)		
CSB 5: Thigh						
Inmate controls	10 (2)	55 (11)	20 (4)	15 (3)	4.72	0.23
Child molesters	0	50 (14)	25 (7)	25 (7)		
CSB 6: Masturbate						
Inmate controls	70 (14)	0	5 (1)	25 (5)	10.5	0.01 ^a
Child molesters	18 (5)	18 (5)	14 (4)	50 (14)		
DW 1: Wife						
Inmate controls	35 (7)	15 (3)	15 (3)	35 (7)	5.45	0.07
Child molesters	11 (3)	14 (4)	11 (3)	64 (18)		
DW 2: Stain						
Inmate controls	35 (7)	20 (4)	15 (3)	30 (6)	0.68	0.88
Child molesters	46 (13)	18 (5)	11 (3)	25 (7)		
UNC: Drink						
Inmate controls	15 (3)	40 (8)	0	45 (9)	0.40	0.82
Child molesters	11 (3)	36 (10)	0	53 (15)		
NOH: Whimper						
Inmate controls	25 (5)	60 (12)	5 (1)	10 (2)	—	—
Child molesters	18 (5)	78 (22)	0	4 (1)		

Note. Dashes indicate that χ^2 could not be calculated due to low expected frequencies.

^aThis difference was not a function of cognitively distorted classification.

Children as sexual beings. Six ambiguous descriptions tapped this implicit theory. For two descriptions placed in the middle of the vignette (Shower and Nightie), a high percentage of both groups failed to recall the description. In these cases, statistical tests were not conducted due to the low percentage of expected frequencies. However, it was clear, even with these small proportions, that child molesters and inmate controls had comparably low cognitive distortion classifications and did not appear to differ on this, or any other recall classification. For the remaining four descriptions (Babies, Penis, Thigh and Masturbate), the results were fairly consistent. The amount of cognitively distorted recall classifications, for both groups, was low. It could be argued that these participants were not generally introducing distortions into their recall account. However, both groups made other distortion recollections. For example, one inmate control, classified under other distortion, recalled the Babies description as, "Sophie was talking about her day in school". For one description, the χ^2 test of association did reach the 0.01 level of significance (Masturbate). This significant association was not a function of differential cognitive distortion classifications. Instead, follow-up χ^2 analyses showed that child molesters had significantly less correct recall and significantly more other distortion recall classifications. Another theme (Babies) had noticeably higher cognitive distortion classifications for the child molesters. However, this trend should be interpreted cautiously due to the particularly poor recall that child molesters had for this description. Follow-up χ^2 also illustrated a trend for less child molesters to be classified as other distortion, and more to be classified as recall failure for this description.

Dangerous world. There were two ambiguous descriptions tapping the two possible versions of this theory. For both, the results were consistent. Both child molesters and inmate controls had comparably low cognitive distortion classifications. However, both groups made other distortion recollections. For example, one child molester recalled the Wife description as, "while the man was getting ready for bed his wife went to bed and fell asleep". The groups could not be differentiated statistically on cognitive distortions, or any other recall classification.

Uncontrollability. There was one ambiguous description tapping this implicit theory. However, not one participant from either group were classified as having cognitively distorted this description. Nevertheless, they distorted this description in other ways. For example, one child molester stated, "A man and his wife Jane went out for a meal; the wife stated that she wished to go home for an early night because she was tired". The child molesters and inmate controls could not be differentiated statistically based on the remaining recall classifications either.

Nature of harm. There was one ambiguous description tapping this implicit theory. A large percentage of both groups failed to mention this description in their accounts. Statistical tests were not conducted due to the low percentage of expected frequencies. However, it is clear, even with these small proportions, that child molesters and inmate controls had comparably low cognitive distortion classifications and did not appear to differ on this, or any other recall classifications.

Post-recall checks

The follow-up questionnaire asked participants to rate, on a seven-point Likert scale, how certain they were that their recall was correct from 1 (not at all certain) to 7 (extremely certain). Both groups showed a medium to high certainty that their recall was accurate (child

molester $M = 4.4$, $SD = 1.5$; inmate control $M = 5.0$, $SD = 1.5$) and these ratings were not significantly different, $t(46) = 1.4$, $p = 0.18$.

One possibility for the particularly low classifications of cognitively distorted recall for the child molester group was that the participants could not relate to the offence described in the vignette. However, in the follow-up questionnaire, when child molesters were asked how close the vignette was to their own offence(s) from 1 (not at all close) to 7 (extremely close), child molesters' answers ranged from 2 to 7 ($M = 4.8$, $SD = 1.6$). So, in the main, child molesters indicated that their own offences were fairly comparable to that described in the vignette.

Another possibility for the lack of cognitively distorted recall may have been that, despite all efforts, the task was transparent. To test this, after recalling the vignette, participants were given a follow-up questionnaire asking them what they thought the experiment was about. If a participant left this space blank, then the script was classified as *no idea*. If the participant showed some awareness that the research was interested in thoughts and feelings about child sexual abuse, this was classified as *some idea*. Finally, a high level of awareness (i.e. indicating that interpretation of key descriptions would be important) was classified as *task transparent*.

The first postgraduate rater, blind to the participant grouping, coded all these follow-up questionnaires. One-quarter of these scripts were selected randomly and rated by the second rater ($\kappa = 0.76$). Just over a third of both groups (child molesters $n = 9$; inmate controls $n = 7$), were classified as having no idea of the task aims. Approximately half of both groups (child molesters, $n = 13$; inmate controls, $n = 10$) were classified as having some idea of the task aims. Finally, 21% of child molesters ($n = 6$) and 15% of inmate controls ($n = 3$) were classified as task transparent. A χ^2 test of association did not detect a significant association between group and insight into task aims, $\chi^2(2, n = 48) = 0.323$ $p = 0.65$. Further χ^2 analyses were conducted to examine if there were any relationship between the child molesters' insight into task aims and whether recall was cognitively distorted or not (i.e. all classifications other than cognitive distortion were classified as *no distortion*). Because of the low amount of cognitively distorted recall, in some cases expected frequencies were low. Nevertheless, the outcome was consistent. Across all the themes, there did not appear to be any association between the child molesters' insight into task aims and whether they introduced cognitive distortions into their recall accounts.

Discussion

Participants from both groups introduced a number of distortions into their recall accounts. Not only did they distort each of the descriptions, they also added extraneous elements to the stories, indicating that they were filling in their memory gaps. In fact, excluding themes with a particularly bad recall rate (Shower, Nightie and Whimper), just under half the child molesters (47%) misremembered the text presented to them (i.e. they were classified under cognitive distortion or other recall). This supports the literature suggesting that memory is reconstructive rather than reproductive (Bartlett, 1932; Neisser, 1981; Vincente & Brewer, 1993). Also, despite the amount of distortion in recall accounts, child molesters indicated that they generally thought that their recall was an adequate representation of the vignette. However, the findings did not support the existing cognitive distortion literature predicting that child molesters are generally guided by a number of implicit theories (e.g. Ward, 2000; Ward & Keenan, 1999). Generally, child molesters did not distort cognitively the descriptions designed to tap into Ward's implicit theories any more than comparison inmate controls, who also displayed low levels of cognitively distorted recall. This was the case even though the child molesters indicated, on average, that they felt that their offences were similar to those

depicted in the vignette. In addition to this, less than a third of each group could articulate task aims clearly when asked on a follow-up questionnaire.

The fact that these men did not introduce significantly more cognitive distortions into their recall accounts suggests that, at least for these child molesters, cognitive distortions do not represent deviant implicit theories used to interpret offence relevant situations. Our findings also add strength to Gannon's (in press) previous findings with many of the same child molesters (i.e. we now have convergent evidence to show that these molesters do not hold cognitive distortions that they are hiding). This is a finding at odds with assumptions made in much of the literature. In fact, as a whole, our findings suggest that neither child molesters nor inmate controls were using implicit theories to interpret the vignettes; a finding which speaks volumes in itself, and would remain unchanged even if we added more control groups for comparison.

A number of possible factors may have contributed to this unexpected finding. The simplest of these is that the implicit theories of these particular molesters were weak or inaccessible. This seems likely. Intrafamilial molesters, especially self-selecting volunteers, may not have the chronic offence histories associated typically with extrafamilial molesters (see Ward, 2000). So, intrafamilial molesters may either lack implicit theories altogether, or simply be in the early stages of implicit theory development. While recent research has begun to play down the existence of these implicit theories in such molesters (i.e. Ward, 2000), much literature still exists that speaks of distorted beliefs in child molesters generally (e.g. Marshall & Serran, 2000; Marshall, Anderson & Fernandez, 1999). It should be noted here that treatment may also have reduced the accessibility of implicit theories for a small proportion of these men, making implicit theories hard to detect.

Another important issue to address in relation to the value of these null results is that of statistical power. Could the failure to detect a significant association between group and recall classification simply be the result of low power due to small sample size? In order to address this issue, post-hoc power calculations were made for each χ^2 . Average power was 0.64 to detect a medium to large effect ($w=0.4$) at $\alpha=0.05$. This falls below the 0.80 convention (Cohen, 1992). Because of this, we encourage other researchers to increase the power to detect a significant effect and investigate our findings.

A further possibility for the lack of cognitively distorted recall in these studies may have been that the descriptions in the vignettes were not ambiguous enough. Therefore, it may be that some participants were being classified as correct recall when, in actual fact, they did hold deviant implicit theories. For example, statements such as "Sophie was staring at his penis" may be sufficient to support the already deviant implicit theories that are set in place for interpreting children's interpersonal interactions. However, if child molesters were using deviant implicit theories, then information processing theory predicts that these men would attend preferentially to schema-consistent information (see Hollon & Kriss, 1984; MacLeod & Mathews, 1991). Yet the series of χ^2 analyses suggested that child molesters did not have an enhanced ability to correctly recall these descriptions. In addition, Gannon's (in press) previous results with many of the same molesters add weight to our lack of support for the cognitive distortion hypothesis.

An interesting point in relation to these implicit theories is whether it is possible to represent, in any meaningful way, an offending situation. Vignettes were chosen carefully to reflect the type of offences on which these men are commonly convicted. Certainly, these child molesters did appear to be able to relate to these vignettes shown by their post-experiment ratings. This evidence suggests that vignette-type studies are a little more relevant to the child molester himself than questionnaire studies (e.g. Bumby, 1996; Hayashino et al.,

1995). In fact, vignettes have been used successfully to investigate the schemas of aggressive children (e.g. Dodge & Newman, 1981) and adults (e.g. Epps & Kendall, 1995).

Finally, it is important to note that our study reported some high levels of recall failure for participants. Of course, this suggests that there may be considerable room for improving our measurement of cognitive distortions. Currently, we are working upon another memory related paradigm for future testing of the cognitive distortion hypothesis (Keown, Gannon, Polaschek & Ward, 2005). Within this paradigm, child molesters and inmate controls are given ambiguous sentences to read (e.g. "While 8-year old Kate played, she showed her knickers"). Following an unrelated distracter task, participants will be presented with either a sexual interpretation of this sentence (e.g. "While 8-year old Kate played, she *deliberately* showed her knickers") or a benign interpretation (e.g. "While 8-year old Kate played, she *accidentally* showed her knickers"). If child molesters recognize the sexual interpretations disproportionately, this will provide some evidence to support the cognitive distortion hypothesis.

Treatment implications

The findings from this study are not being used to suggest that all child molesters lack implicit theories or cognitive distortions. However, they do suggest that researchers should exercise caution before presupposing the existence of distorted implicit theories in all child molesters. This is especially important for treatment. Many of the post-offence statements made by child molesters are thought to provide insight into the distorted thinking of the child molester. While this may be true for some highly deviant offenders, the issues that may arise from teaching all child molesters that they have distorted thinking are discussed rarely. Specifically, this discourse suggests to molesters that they have pathological thinking problems that are difficult to alter. In fact, the post-offence statements uttered by some child molesters may represent normative justifications or excuses used by everyone. Whether these processes would operate unconsciously is unknown, however (Beech & Mann, 2002). We also know little about when these types of cognitions could emerge. For example, could they play a causal or maintenance role in the offence process (see Beech & Mann, 2002)?

Recently, Beech and Mann (2002) have argued that any kind of distance created between client and therapist may reduce the molesters' motivation to engage in therapy. Thus, it is suggested here that framing relatively normative processes as "abnormal" may create an obstruction between the molester and therapist, leading the molester to lack motivation in areas of the treatment programme that may be of particular benefit to him. In fact, Ward (2002) has argued recently that the traditional approach of targeting primarily criminogenic factors fails to take into account the human needs of the offender. Like everyone, molesters need to be guided by positive motivation. Some molesters, who are not guided by distorted beliefs, may be better motivated to engage in treatment and manage their offending, if they are encouraged that some of their cognitions linked with their offending represent perfectly normal strategies used by all. Certainly, more controlled empirical research needs to be conducted to examine the origins of post-offence statements for a range of child molesters.

Final comments

As yet, the mechanisms and conditions for implicit theories are unknown. In offending situations, the child molester must deal with a range of interpersonal cues that cannot be captured in a vignette. It is possible that the mere context of the potential offending situation

and the affective state of the child molester may trigger or prime these extensive theories resulting in their biased interpretative nature (Polaschek & Ward, 2002). Although this study has illustrated that some child molesters do not appear to use implicit theories to fill in memory gaps, it is important to note that vignettes strip the offence process of the usual contextual, affective and interpersonal elements that may accompany an offending situation. Because of this, these results may not necessarily transfer across all situations and contexts. Nevertheless, they represent the early findings for a hypothesis that has been neglected empirically and we look forward to researchers developing other innovative methods to shed more light on the cognitive distortion hypothesis.

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