

The timing, triggers and qualities of recovered memories in therapy

Bernice Andrews*, Chris R. Brewin, Jenny Ochera, John Morton,
Debra A. Bekerian, Graham M. Davies and Phil Mollon

Department of Psychology, Royal Holloway, University of London, UK

Objectives. To report descriptive data on memory recovery of traumatic material including: degree of prior amnesia, triggers to recovery, qualities of the memory and length of time taken to recover different types of memory.

Design. British Psychological Society practitioners who reported having clients with recovered memories in a previous large-scale survey were contacted for an in-depth interview. They each provided information on up to three such clients.

Methods. From telephone interviews with 108 therapists, we elicited 236 detailed accounts of clients recovering a traumatic memory. Interviews were semi-structured with investigator-based ratings.

Results. The degree of amnesia varied widely according to therapists: some clients had prior total amnesia, others a prior vague sense or suspicion, and others prior partial memories. Time in therapy before first recall was longer for memories involving child sexual abuse than for memories of other traumas. The majority of the memories, but not all, were similar to those reported by patients with post-traumatic stress disorder: they were fragmented, accompanied by high levels of emotion, and experienced as a reliving of the original event.

Conclusions. On the basis of current understanding of memory processes, several mechanisms may be needed to explain all the data, including disruptions to the encoding and retrieval of traumatic events and errors in the attribution of the source of specific memories. It will be important to confirm these findings by interviewing clients themselves.

Despite evidence that substantial proportions of officially identified and self-identified abuse survivors report periods when they partially or completely forgot the abuse (e.g. Briere & Conte, 1993; Elliott, 1997; Elliott & Briere, 1995; Feldman-Summers & Pope, 1994; Herman & Harvey, 1997; Melchert, 1996; Williams, 1994), there exists, as yet, relatively little systematic knowledge about the characteristics of recovered memories. In a previous article (Andrews *et al.*, 1999) we reported data from an interview survey of therapists concerning their experiences with recovered memory clients including the content of the memories, degree of corroboration

* Requests for reprints should be addressed to Bernice Andrews, Department of Psychology, Royal Holloway, University of London, Egham, Surrey TW20 0EX, UK (e-mail: b.andrews@rhbnc.ac.uk).

available, and the use of different therapeutic techniques. The main findings were that around a third of such memories involved traumas other than sexual abuse; a third were recovered before entering therapy; only in a minority were techniques used before the first memory was recovered; memories were commonly reported to have been corroborated. In this article we report descriptive data from the same survey concerning the degree of prior amnesia, the triggers to memory recovery both inside and outside therapy, the number and qualities of the memories recovered, and the length of time taken to recover different types of memory.

It is sometimes assumed that individuals recovering memories of trauma have no memory whatsoever for the events prior to the recovery process. However, recent research has made clear that abuse survivors report different degrees of forgetting (Elliott & Briere, 1995; Herman & Harvey, 1997; Herman & Schatzow, 1987; Loftus, Polonsky, & Fullilove, 1994). Similarly, from clinical observation, Harvey and Herman (1994) reported their impression that the most typical adult survivor of early trauma seen in their clinic had a partial memory for the experience, always remembering certain elements and sometimes recalling new elements. Gold, Hughes, and Hohnecker (1994) further distinguished between individuals seeking treatment who had either no memory of abuse, a vague sense or suspicion of abuse, varying degrees of partial memory of abuse, and fairly complete recall.

Individuals also differ in the extent to which they report awareness of the existence of a memory, as opposed to the content of a memory, and in the extent to which they report actively trying to keep memories out of consciousness. In Melchert's (1996) questionnaire survey of college students, a majority of the 41 who reported they had previously forgotten early physical, emotional or sexual abuse also reported they had consciously attempted to avoid memories, whereas a minority reported being previously completely unaware of the memories.

There is good reason to be cautious about the veracity of memories recovered should therapists use prolonged, suggestive attempts to have patients recall childhood episodes (Lindsay & Read, 1994, 1995). We know little, however, about other events that trigger memory recovery, whether the triggers are repeated or prolonged, and whether there is any element of suggestion involved. Nor do we know about the average time taken before memories are recovered in therapy, and whether this is related to the content of the memory or to the depth of apparent amnesia. There is evidence that the events of therapy are only one of many triggers for memory recovery (Andrews *et al.*, 1995; Elliott, 1997; Feldman-Summers & Pope, 1994; Herman & Harvey, 1997). However, with the exception of a clinical study which included 25 patients reporting delayed memories (Herman & Harvey, 1997) existing studies involve non-clinical samples. In Herman and Harvey's study the majority of patients with delayed recall had recovered memories before entering therapy. More detailed research is therefore needed with larger numbers of patients who have recovered their first memory both before and in therapy to confirm that experiences and events in therapy are not the only triggers in clinical samples.

Further questions that await more research concerning the qualities of recovered memories, and whether they resemble other traumatic memories observed in clinical and research contexts. A basic distinction exists between autobiographical facts and personal memories (e.g. Brewer, 1986). The former correspond to factual knowledge

about the self, for example that one has visited France; whereas the latter correspond to specific episodic memories of events involving the self that took place during the visit. Since level of detail, and particularly perceptual information, is one of the main criteria for distinguishing actual from imagined experiences (Johnson, Hashtroudi, & Lindsay, 1993), it is important to know whether recovered memories typically involve generalized facts or specific, detailed personal memories and, if the latter, whether such memories involve a single event or multiple events.

Numerous authors have claimed that memories for highly emotional events, and traumatic memories in particular, have different properties to those of other memories. There is now a consensus that memory for the central facts of emotional events tends to be accurate and persistent, whereas memory for peripheral details of such events is less consistent and may be impaired (Christianson, 1992; Koss, Tromp, & Tharan, 1995; Yuille & Cutshall, 1989). In some cases, individuals retain clear, detailed, though not always accurate, images for long periods ('flashbulb memories': Brown & Kulik, 1977), although this is not invariably the case and is related to several factors including the personal significance of the event (Conway, 1995).

Research on individuals with post-traumatic stress disorder (PTSD) has found that their intrusive memories are often characterized by even greater clarity and persistence than flashbulb memories, being accompanied by high levels of emotional arousal, and containing strong sensory and perceptual features ('flashbacks'). However, flashbacks differ from ordinary autobiographical memories in that they often consist of parts or fragments rather than whole memories, and they are often experienced as a reliving of the event in the present. Also, flashbacks are triggered automatically by internal or external cues and, unlike ordinary autobiographical memories, their content cannot be consciously inspected (Brewin, Dalgleish, & Joseph, 1996; Foa, Molnar, & Cashman, 1995; Terr, 1991; Van der Kolk & Fisler, 1995). It should be noted, however, that traumatic memories in non-clinical samples may not always share these characteristics. One study found that reported rape memories, compared to other unpleasant memories, were less clear and vivid, involved less visual detail, and were less well remembered (Tromp, Koss, Figueredo, & Tharan, 1995).

It is evident that memories of highly emotional events may vary considerably in their properties, depending on the severity of the event and the clinical status of the individual. It is therefore of great interest to learn more about the properties of reported recovered memories of trauma. Authors who regard dissociation as the basis of intrusive PTSD symptoms and as the most plausible reason for the forgetting of trauma (Alpert, Brown, & Courtois, 1996; Van der Kolk & Fisler, 1995) would presumably expect reported recovered memories to be similar in their properties to intrusive memories in PTSD, i.e. fragmented, affect-laden, and experienced as a reliving of the trauma. There is evidence from one clinical study that recovered memories of sexual abuse are often of a fragmented nature initially (Roe & Schwartz, 1996), but no empirical data concerning their other properties, or the properties of recovered memories of non-sexual trauma have yet been reported, however. Our aim was therefore to gain new information on the nature of memory recovery, by documenting: (a) the extent and types of existing memory prior to reported memory recovery, (b) the length of time taken to recover memories, (c) immediate triggers

for memory recovery within and outside therapy, and (d) the properties and nature of the memories reported to have been recovered, including whether they involved facts or episodes, the number of episodes, the degree of fragmentation in the memories and the amount of detail, and the extent to which events were experienced as being relived. As previous analysis of the data reported in the current paper had demonstrated that reports of memories recovered in therapy involve both child sexual abuse (CSA) and other non-CSA trauma (Andrews *et al.*, 1999), type of trauma was examined in relation to all the above factors.

Method

Sample

A full description of the sample and details of sample selection have been given in Andrews *et al.* (1999). Respondents were selected from a sample of practitioner members of the British Psychological Society (BPS) who had previously taken part in a questionnaire survey about recovered memory beliefs, experiences and practices (Andrews *et al.*, 1995). Of the original 810 respondents, 36% ($N = 291$) reported having at least one client who had recovered a memory of trauma in therapy in the previous year, and 71% ($N = 208$) of those identified themselves as willing to take part in further research. Seventy-two per cent ($N = 118$) of those contacted were interviewed, and 108 respondents gave valid interviews (upon interview the remaining 10 did not have clients with recovered memories according to our criteria¹). Their mean age was 48 ($SD = 9.5$; range 30–80), and 61% were women. The interviewed sample did not differ from those self-identified but not interviewed (including contacted and non-contacted individuals) in terms of responses to the questions in the original survey. However, all those self-identified differed from those not identifying themselves on two items: they were more likely to have seen clients reporting satanic abuse, and to believe in the accuracy of recovered memories (although they were just as likely to believe memories could be false).

Interview procedure

Details of the content of the interview were sent to respondents in advance. Respondents were initially asked to calculate the total number of clients seen since April 1993 (the year before the questionnaire survey) who had (a) recovered memories of CSA in therapy with them, (b) recovered memories of other trauma in therapy with them, and (c) recovered any memories of trauma prior to any therapy. The 99 respondents who fully answered these questions generated a total of 690 such clients. They were told we wished to interview them in detail on up to three recovered memory clients, and if they had more than three of these clients they were asked to select one client from each of the above categories. Respondents were instructed to consult their clinical notes in advance about the selected clients. This procedure generated 236 detailed client cases, 82% female and 18% male, with a mean age of 36 ($SD = 11.2$; range 16–72). Seventy-one per cent ($N = 166$) recovered their first memory in therapy with the respondent, 9% ($N = 21$) in therapy with someone else, and 19% ($N = 46$) before entering any therapy (in three cases the context of memory recovery was unknown). Of the 67 clients who recovered their first memory prior to therapy with the respondent, 12 had no further recall of the supposed trauma.

In 55% of the detailed client cases the information was based on the respondent's notes ($N = 129$) and in a further 5% (where there were no notes) the case was current ($N = 12$). To check that reliance on memory was not a significant source of bias, cases where notes were consulted were compared with cases where they were not. There was however, only one significant difference in terms of the study variables which is dealt with in the relevant section of the results.

¹ A recovered memory was defined as the recovery of a traumatic event or series of events (whether real or illusory) where there was no previous conscious memory, or recovery of a significant new piece of information about a partially remembered traumatic event. Recovery of forgotten feelings surrounding an event that had always been remembered was not included.

Fifty-five per cent of the respondents had three or fewer clients in the study period, and could therefore only report on those they had. Those 45% with more than three made a choice in selecting clients following the instructions given above. It was possible that certain client types were selected over others, introducing a source of bias in the descriptions of the detailed client cases. However, in the main this did not appear to be the case: only one study variable differed significantly between client cases of respondents with three or fewer and those with four or more, and this is discussed in the relevant section of the results.

The interviews, conducted by telephone, were tape-recorded for later transcription, with the respondent's permission. The interview schedule was structured, but clarification was given on questions where requested, and probes were used to encourage elaboration where relevant. As aspects of the study were exploratory, both closed and open questions were asked to allow for later categorization of responses where relevant. Where responses required investigator judgment in the rating, agreement was reached between at least three members of the research team for every rating. Ratings by the investigator are based on the respondent's transcribed comments on the basis of predetermined criteria for each scale point of the particular measure. Account is taken of the respondent's report of what the client said in preference to the respondent's opinion. Details of questions asked, rating criteria, and inter-rater reliability where relevant are given in the results and in the Appendix. For each client selected the interview covered the following variables reported here: the context of the beginning of memory recovery, description of the type of trauma recovered, degree of prior amnesia, immediate triggers for initial memory recovery, time taken to recover initial memory, the properties and nature of the memories recovered, reliving experiences in memory recovery, and the use of techniques for recovering memories. The full interview schedule is available from the first author.

Two variables, more fully described in Andrews *et al.* (1999), type of trauma recalled, and the use of memory recovery techniques, require brief description.

Type of trauma recalled. This was rated from the respondents' descriptions. Predetermined categories were recovered memories reported to involve (1) CSA, (2) other trauma, and (3) both CSA and other trauma. On examination of the 'other trauma' category, a further distinction was made between memories of child maltreatment (involving physical abuse or other cruelty in childhood), and other trauma, which included recovered memories of supposed trauma in both childhood and adulthood. Half of the memories reported for the 236 clients involved CSA, 22% both CSA and other trauma, 11% child maltreatment, and 16% other trauma.

The use of techniques to aid recall. This was rated if the respondent indicated having used at least one technique with the client in question, specifically to help him or her remember past experiences rather than for any other therapeutic reason. Techniques were taken from a list implicated by previous theorists as 'risky' (Lindsay & Read, 1994; but see critiques of the concept of 'risky' techniques by Brown, Schefflin, & Hammond, 1997, and Pope, 1997). They included hypnosis, dream interpretation, guided imagery, use of photos, relaxation, instructions to remember, interpreting physical symptoms and writing and artwork. Respondents were further asked whether the technique had been used before or after the client's first memory was recovered. We investigated the use of techniques to aid recall before initial memory recovery in the analysis of length of time taken to recover the initial memory. Because the frequency of the use of individual techniques before recovery was low (see Andrews *et al.*, 1999), they were combined in the current analysis.

Results

Degree of amnesia for the first recovered memory

Respondents were asked whether the client's first memory had been recovered from total amnesia, from a vague sense or suspicion (with no conscious memory of an actual event), or from partial memory (where memory for details was sketchy or vague, or the event was not thought about, rather than not known about). Where memories were recovered in therapy, degree of amnesia was rated for the status of

these memories *at the outset of therapy*. Where memories were recovered prior to therapy, degree of amnesia was rated for the status of these memories *before the first event was recovered*. Full details of the definitions adopted for the different types of amnesia, which form the criteria used in rating degree of amnesia, are given in the Appendix. After agreement had been reached on every rating by three research team members (BA, CRB and JO), 20 ratings were randomly selected from all categories of amnesia to test inter-rater reliability. Good inter-rater agreement of the 3-point scale was achieved between two raters, one of whom was not a member of the research team (weighted kappa = .73). In the 226 cases where it was known, rates reported were 55% with total amnesia, 14% with a vague sense or suspicion, and 31% with a partial memory.

Of the 125 clients rated as having total amnesia, five had prior disturbing dreams, and three had always known about the event in the memory because they had been told by others that it had occurred, even though they had no prior conscious memory. Of the 32 clients rated as having a vague sense or suspicion, 47% appeared to have had a sense, 25% a suspicion, 9% both and 19% had a fear or wariness about a particular person without knowing why. Among the 69 clients rated as having a partial memory prior to memory recovery, in just one case this involved having a flashback memory only. In the rest of the cases there was at least an existing sketchy or fragmented narrative memory. In eight cases (12%) there was evidence from the respondent's account that the event was not thought about rather than not known about. In five of these cases it was reported that the client recovered further forgotten details, in the other three the supposed trauma had not been thought about for a long period, and the clients showed considerable surprise when the memory came back.

Respondents reporting from notes more often described clients with a vague sense than those reporting only from memory. These respondents reported 51% with total amnesia, 21% with a vague sense, and 28% with partial memory, compared with rates of 60%, 5% and 35% reported by respondents relying only on their memory, $\chi^2(2, 223) = 11.8, p < .01$. When vague sense or suspicion was combined with total amnesia (as neither involve any prior conscious memory), this difference disappeared, $\chi^2(1, 223) = 1.35, p > .05$. Therefore, in order to overcome any potential reporting bias arising from the presence or absence of notes, this recoded variable (total amnesia versus partial memory) was used in the rest of the analyses to assess degree of forgetting. Respondents with four or more clients reported more with partial memories (37%) than those with three or fewer clients (22%), $\chi^2(1, 213) = 4.9, p < 0.5$. It is unclear whether this represented a reporting bias or a genuine group difference.

How long in therapy before first memory emerges?

Of the relevant client cases where recovery of the first memory was in therapy with the respondent, initial memory recovery occurred within 1 month of the start of therapy in 21%, in 27% between 1 and 3 months, in 14% between 3 and 6 months, in 20% between 6 and 12 months, and in 18% over a year (range 1 week to 11 years).

Table 1 shows the mean number of weeks in therapy before recalling different

Table 1. Weeks in therapy before the first memory was recovered by type of memory recovered (excludes clients with first memory recovered outside therapy with respondent)

	CSA (<i>N</i> = 80)	CSA and other (<i>N</i> = 31)	Child maltreat- ment (<i>N</i> = 19)	Other trauma (<i>N</i> = 32)	<i>F</i> (3, 162)
Mean weeks before recovery (SD)	56.17 ^a (96.9)	50.61 ^a (66)	16.42 ^b (16.1)	15.12 ^b (21.5)	6.9*

* $p < .001$.

Note. Means that do not share the same superscript are significantly different from each other ($p < .05$).

types of trauma. It can be seen that time before recall of memories of CSA, and both CSA and other trauma, was considerably longer than time before recall of child maltreatment, and other types of trauma. The same pattern of results emerged when the number of sessions was substituted for the number of weeks before recall. The significant difference between the groups shown in Table 1 was obtained after log transformation to normalize the distribution of weeks before recall. *Post hoc* comparisons of the transformed data, using Duncan's test, showed that time before recall of other trauma and child maltreatment was significantly shorter than time before recall of CSA and both CSA and other trauma. A further three-way ANOVA on time before recall was carried out including degree of amnesia (total amnesia versus partial memory) and the use of techniques to aid recall (techniques reported versus techniques not reported) as additional factors. To ensure sufficient numbers in the cells, the trauma type factor was collapsed into two levels (CSA elements versus no CSA elements in the memory). There was a significant effect of trauma type, $F(1, 159) = 8.4$, $p < .01$, but no significant effects for degree of amnesia or techniques used, and no significant interactions.

Despite the lack of an association between the use of memory recovery techniques and time before recall, it was still possible that the longer time before recall of CSA memories was a function of the therapist. Therapists with clients recovering CSA events might have different methods and approaches than therapists without such clients. The effect of the therapist was therefore controlled by conducting a within therapist analysis of reported time before recall of CSA and non-CSA trauma. Forty respondents reported details of at least one client who had recovered memories with CSA elements, and at least one who had recovered other non-CSA memories. Where the respondent described three detailed cases, with two in the same category (e.g. two with CSA memories) the number of weeks before recall was averaged for the two cases. Among these respondents the mean time before recall of CSA and non-CSA memories was 33 weeks and 13 weeks, respectively. When the data were transformed, there was a significant difference between time before recall for two different types of memories, $t(39) = 3.53$, $p < .001$.

What triggers the first recovered memory in and outside therapy?

Before being asked whether they had used techniques to aid recall, respondents were asked if they knew what had triggered the first memory. Table 2 lists triggers implicated, within and outside of therapy. As expected the most commonly reported single trigger within therapy was a therapeutic technique although these accounted

Table 2. Triggers for first recovered memory while in and prior to therapy with respondent (excluding clients recovering first memory with another therapist)

	In therapy with respondent (<i>N</i> = 166) %	Before any therapy (<i>N</i> = 46) %
No trigger noted/not known	31	24
Triggers in therapy with respondent		
Therapeutic technique	15	—
Therapist's comment or question	8	—
Talking about supposed perpetrator	9	—
Other event in therapy	5	—
Total triggers in therapy	37	—
Triggers outside therapy		
Events or circumstances involving client's children	2	17
Physical contact or danger to client or others	7	13
Books/media	3	9
Training course	1	7
Someone who knew reminded client	4	7
Loss or threat of loss	5	4
Someone else described abuse	1	4
Change in medication/substance use	2	4
Other event	6	11
Total triggers outside therapy	31	76

for less than half the instances of reported memory recovery. The most common triggers prior to therapy were events involving the client's children, or children reaching the same stage of development as the client was at the time of the supposed trauma, followed closely by events involving physical contact with the client, or physical danger to the client or another known person.

The nature of memories recovered in the process of therapy

In what form are memories recovered? Reported memories were overwhelmingly in the form of specific personal episodes (94%) rather than autobiographical facts (6%). In these 6% it was reported that the client recalled the fact that the trauma had

happened but could not recall any specific episodes of when or where it happened. The vast majority of the clients (80 %) recovered more than one memory, with 71 % recovering memories of different events, and 9 % recovering aspects of the same single event, according to the respondents. When asked whether memories came back whole or in parts, respondents reported that in the relevant cases 42 % of the client's memories came back only in fragments, 20 % recalled fragments and subsequently whole memories, and 38 % recalled only whole memories. For further analysis these categories were reduced to two, whole memories only versus at least some fragmentation. The completeness of the memories was not related to degree of amnesia $\chi^2(1, 213) = 0.03, p > .05$, but was related to type of trauma recalled. Memories were more likely to be wholly or partly fragmented when there was an element of CSA than when there was not: fragmented memories occurred in 67 % with CSA, and 73 % with both CSA and other trauma, compared with 40 % with child maltreatment and 49 % with other types of trauma, $\chi^2(3, 220) = 11.78, p < .01$.

Are memories recovered in detail? Respondents were asked about the degree of detail in the reported memories on a 4-point scale, where 4 was marked, 3, moderate, 2, sketchy, and 1, little or no detail. Examination of the accounts suggested that respondents had difficulty making fine discriminations between levels of detail between scale points 3 and 4, and 1 and 2. The scale was dichotomized accordingly with points 4 and 3 indicating 'high detail', and 1 and 2 indicating 'low detail'. High detail included cases where at least some of the memories were detailed. In the relevant cases, the vast majority of the memories (82 %) were recounted to the respondents by the clients with a high degree of detail. Level of detail was not related to degree of amnesia, $\chi^2(1, 211) = 0.10, p > .05$, or to type of trauma recovered, $\chi^2(3, 218) = 6.41, p > .05$.

Are recovered memories accompanied by behaviour and affect corresponding to the supposed trauma? Respondents were asked whether memory recovery involved reliving the trauma, and whether it was accompanied by any emotion. Reliving was scored as full, partial or none. Criteria for full reliving involved a subjective sense of re-experiencing all or part of the event in the present, with bodily and other vivid sensations and intense affect. Partial reliving was characterized by affect and other sensations corresponding to the supposed trauma, but in the absence of any mention of re-experiencing the event in the present. No reliving was characterized by either no reported emotion, or emotions that appeared to be subsequent to the supposed trauma, for example, sadness or anger over what was believed to have happened. Using the procedure described above for amnesia, good inter-rater reliability was achieved with an independent rater (weighted kappa = .80). The majority of the relevant cases (60 %) involved full reliving; 23 % involved partial reliving, with the remaining 17 % involving no reliving according to our criteria. Degree of reliving was not significantly related to type of trauma recalled, $\chi^2(6, 222) = 0.71, p > .05$, or to degree of prior amnesia $\chi^2(2, 215) = 0.21, p > .05$.

The most common emotion accompanying reported memory recovery was fear, reported in 41 % of the relevant cases, followed by general distress (24 %), guilt (16 %), disgust (7 %) and sadness (6 %). In 9 % of the cases, the respondent reported

that the client appeared to be in physical pain. The one emotion distinguishing the reliving groups was fear: 59% with full reliving expressed fear, compared with 28% with partial reliving, and none with no reliving $\chi^2(2, 221) = 46.45, p < .001$. Fear was also related to fragmentation: 47% of those with at least some fragmentation of the recovered memory expressed fear at recall, compared with 31% who recovered whole memories only $\chi^2(1, 220) = 4.9, p < .05$.

Are features of memory recovery related to reports of corroboration? Respondents' reports of corroborative evidence for the memories (see Andrews *et al.*, 1999) were investigated in relation to the following features: time in therapy before recall, personal episodes versus autobiographical facts, completeness and detail in the memories and number of episodes recovered, and degree of reliving. None of these relationships were significant, smallest $p > .17$.

Discussion

This is the first study to investigate systematically both the timing of and triggers to memory recovery in therapy as well as the properties of memories recovered. As suggested by previous authors (Elliott & Briere, 1995; Gold *et al.*, 1994; Herman & Harvey, 1997; Herman & Schatzow, 1987; Loftus *et al.*, 1994), the degree of prior amnesia reported appears to vary widely, from total amnesia (the most common), through a vague sense or suspicion, to partial knowledge of related facts. In some cases a degree of deliberate avoidance was implicated. Like Loftus *et al.* (1994), we found that, when forgetting was reported, the majority of instances involved total amnesia. This pattern may not hold true for other samples such as college students, however (Melchert, 1996).

Length of time in therapy before the first memory emerged varied from 1 week to 11 years, with over 80% emerging within 12 months. As in the surveys of non-clinical samples (Elliott, 1997; Feldman-Summers & Pope, 1994), and Herman and Harvey's (1997) small clinical sample, a wide variety of triggers was reported, involving events inside and outside therapy. Whereas respondents reported using techniques to aid recall prior to first memory recovery in 30% of relevant cases (Andrews *et al.*, 1999), in only half that proportion was a technique reported to be the actual trigger to memory recovery. This may suggest that the risk associated with using techniques to aid recall is not as great as it at first appears. However, it is also possible that techniques have a general priming effect and increase the likelihood of retrieving actual or pseudo-memories to other related cues. Thus, while some of the data allow that recovery may only have followed prolonged therapeutic suggestion, other data are not consistent with this explanation. A specific test of this hypothesis found that time taken to recover memories was unrelated either to the degree of amnesia or to the use of therapeutic techniques to aid recall.

An unexpected finding from both between-participants and within-participants analyses was that time in therapy before recall was significantly longer for CSA memories than for non-CSA trauma. One possible explanation is that therapists who believe their clients' symptoms are a sign of CSA persevere longer with clients in attempts to recover real or pseudo-memories of CSA. However, it could also be

argued that if therapists had a mission to uncover early sexual trauma, they would be more effective in retrieving such real or pseudo-memories faster. Another possibility is that there is greater cognitive avoidance associated with CSA memories than with other memories, either because of the sexual elements *per se* or because of dynamics involving betrayal (Freyd, 1996). Initial attempts to block out or avoid thinking about sexual material, followed gradually over the course of therapy by a greater willingness to admit it into consciousness, could result in the longer retrieval times that we found for the CSA memories. It might also be the case that part of the effect is due to some therapists themselves inhibiting discussion of their clients' early sexual experiences for fear of uncovering issues they feel ill equipped to deal with. However, evidence of victims' avoidance of traumatic sexual material comes from two recent studies of victims of organized state violence. Both found that those who had been sexually tortured reported more of the avoidance symptoms of PTSD (such as avoiding thoughts or reminders of the torture) than those who had experienced other forms of severe torture (Ramsay, Gorst-Unsworth, & Turner, 1993; Van Velsen, Gorst-Unsworth, & Turner, 1996).

The recovered memories our respondents described revealed many similarities with descriptions of 'flashbulb memories' and with the memories of patients diagnosed with PTSD (Brewin *et al.*, 1996; Foa *et al.*, 1995; Terr, 1991; Van der Kolk & Fisler, 1995). The memories were overwhelmingly recovered in the form of specific episodes rather than autobiographical facts, and it was usual to recall a number of memories of different events. Fear and distress were the most common emotions, and most, but not all, memories were detailed and involved what appeared to be a degree of reliving of the original experience. There was more heterogeneity, however, in terms of whether memories were recovered in parts or fragments, or whether they were recovered as whole episodes. In line with Roe and Schwartz's (1996) study of patients reporting recovered memories of child sexual abuse, the majority of the reported memories appeared to be recovered at least initially in the form of fragments.

These findings are to a large extent consistent with the theorizing of Alpert *et al.* (1996) and Van der Kolk and Fisler (1995). These authors have proposed that dissociation at the time of the trauma disrupts the encoding of information in memory, prevents further processing and the construction of a coherent narrative account, and leads to the forgetting of the degraded information. At recall, therefore, the individual regains access to material that has received little, if any, additional processing subsequent to the trauma. As a consequence it is fragmented, and experienced as though the trauma is happening in the present. In our data the fragmentation of memory was particularly marked in reported cases of CSA, suggesting that this mechanism may be prevalent in the case of this form of trauma.

There has been considerable speculation about the factors that may promote forgetting and impede memory retrieval. As previously noted, Freyd (1996) has argued persuasively for the importance of betrayal, citing for example the dilemma faced by children who may be being abused by the same person from whom they require care and protection. This theory fits the case of intra-familial physical and sexual abuse very well, but has perhaps less explanatory power when it comes to the forgetting of extra-familial abuse, medical procedures and road traffic accidents. In

addition to evidence for the avoidance of traumatic sexual experiences reported by Ramsay *et al.* (1993) and Van Velsen *et al.* (1996), this study yields alternative suggestions for what may drive forgetting. We found a specific association between fear and both fragmentation in the memory and the apparent reliving of the prior trauma. If fragmentation and the intensity of reliving are indexes of the extent to which the processing of the traumatic event has been disrupted, then we may speculate that fear is an important element in promoting forgetting. Independent research has found that individuals with a repressive coping style have particular difficulty in retrieving specific autobiographical memories characterized by fear, hurt and self-consciousness (Davis, 1987; Myers, Brewin, & Power, 1992). However, it might also be the case that reliving a real or imagined trauma may in and of itself induce fear, especially if the individual interprets it as meaning they are unstable or going mad (e.g. Ehlers & Steil, 1995).

It is evident that not all recovered memories of trauma are detailed, fragmented, or accompanied by intense affect and the experience of reliving the trauma. In this they display the heterogeneity typical of memories of highly emotion-laden events. These observations are, however, quite consistent with recent theories specifically proposing that individuals store two different kinds of memory of emotion-laden events, one an ordinary autobiographical memory and one based on lower-level perceptual processing (Brewin, 1989; Brewin *et al.*, 1996; Pillemer & White, 1989). This evidence for the retrieval of what appear to be ordinary autobiographical memories that possess a relatively coherent narrative, even though they are in the minority, nevertheless suggests that the dissociation hypothesis is not fully able to account for the data. Assuming at least some of these memories are valid, it is plausible that alternative mechanisms will be necessary to account for the forgetting of memories that have received fairly extensive conscious processing.

A number of authors (Bjork, Bjork, & Anderson, 1996; Freyd, 1996) have suggested that the experimental literature on directed forgetting provides a plausible laboratory analogue for some instances of the forgetting of trauma. In some of these experiments participants who are told to forget the first half of a word list and remember the second half, do poorly in a free recall test of the to-be-forgotten items. This has been attributed to retrieval inhibition operating on the to-be-forgotten items. The relevance of these experiments to clinical hypotheses concerning the total or partial forgetting of traumatic material has been discussed in greater detail elsewhere (Brewin & Andrews, 1998). For the purposes of this discussion, it is only necessary to note that possible mechanisms of forgetting may include not only disruption to encoding, but also disruption to the retrieval of adequately encoded memories. Morton (1994) suggested alternative mechanisms of forgetting based on applying the Headed Records model of memory (Morton, Hammersley, & Bekerian, 1985) to cases of multiple personality disorder. For example, he proposed that memories would be inaccessible if the description of self used to search for the memories was discrepant from the description of self contained in the memory heading.

This study was unable to confirm or disconfirm the authenticity of the recovered memories, although data on available corroborative evidence have been presented and suggest that a sizeable proportion are likely to have corresponded to actual

events (Andrews *et al.*, 1999). We have argued that the variety of the content of the memories, of the contexts in which they were recalled, and of the ways in which they were recalled, make it unlikely that any one explanation will account for all the data. Readers should be aware, however, of cautionary research from the laboratory that is relevant to the issue of the authenticity of these memories (e.g. Belli & Loftus, 1994; Destun & Kuiper, 1996). Studies indicate that adults do not in general find it easy to discriminate between real and imagined childhood events, largely because of the decay in perceptual information associated with childhood autobiographical memories (Johnson, Foley, Suengas, & Raye, 1988). The greater the perceptual information available, the more an individual will generally conclude an event really happened. The qualities of traumatic memories, being often more perceptually based, more detailed, and accompanied by unusually intense affect, are precisely those that would typically lead to a judgment that a memory corresponded to a real event.

From this research perspective, therefore, therapeutic manipulations that encourage imagery and visualization will tend to add such perceptual information, and therefore make the discrimination between real and imagined events more difficult. An important task for the future is to investigate whether these laboratory data are relevant to the issue of the authenticity of recovered traumatic childhood memories. Our results showed that corroboration was no less likely to be reported for recovered memories with features such as high detail and reliving than for memories without these features. However, further research investigating independent corroboration of the authenticity of such memories is needed.

A further issue concerns the reliability and validity of the respondents' reports. Information was derived from therapists' observations of client reports and behaviour, rather than directly from the clients who had recovered memories, and the reliability of therapists' observations and memories is unknown. However, in the majority of cases, material regarding memory recovery in therapy was recorded by the therapists around the time it occurred. As a further check on validity, it was reassuring that, with one exception, dealt with in the analysis, there were no significant differences in the variables analysed between those who used notes and those who did not. Again, although the reliability and validity of information contained in therapists' notes are unknown, at present we do not know of any data to contradict the assumption that information from the therapists is as representative and reliable as information from the clients themselves.

In summary, this study has provided new information on the factors involved in memory recovery. There is considerable variation in the extent of prior amnesia, the time taken to recover memories, the triggers to recovery, and the properties of the memories. On the basis of our current understanding of the processes involved in forgetting and misremembering, it appears that several mechanisms may be needed to explain all the data, including disruptions to the encoding and retrieval of traumatic events and errors in the attribution of the source of specific memories. It should be remembered, however, that as the information was obtained from therapists, the validity of the data relies on the opportunities available to them to observe their clients experiencing memory recovery. It will be important to confirm these findings by interviewing clients themselves.

Acknowledgements

The study was supported by a grant from the UK Economic and Social Research Council ref: ROO0236111. Special thanks are due to the therapists involved who gave so much of their time.

References

- Alpert, J. L., Brown, L. S., & Courtois, C. A. (1996). Symptomatic clients and memories of childhood abuse: What the trauma and child sexual abuse literature tells us. *Working Group On Investigation of Memories of Childhood Abuse. Final Report*. Washington, DC: American Psychological Association.
- Andrews, B., Brewin, C. R., Ochera, J., Morton, J., Bekerian, D. A., Davies, G. M., & Mollon, P. (1999). The characteristics, context and consequence of memory recovery among adults in therapy. *British Journal of Psychiatry*, *175*, 141–146.
- Andrews, B., Morton, J., Bekerian, D. A., Brewin, C. R., Davies, G. M., & Mollon, P. (1995). The recovery of memories in clinical practice: Experiences and beliefs of British Psychological Society practitioners. *The Psychologist: Bulletin of the British Psychological Society*, *8*, 209–214.
- Belli, R. F., & Loftus, E. F. (1994). Recovered memories of childhood abuse: A source monitoring perspective. In S. J. Lynn & J. Rhue (Eds.), *Dissociation: Theory, clinical and research perspectives* (pp. 415–433). New York: Guilford.
- Bjork, E. L., Bjork, R. A., & Anderson, M. C. (1996). *Inhibition and suppression: Intentional and unintentional*. Paper presented at the 2nd International Conference on Memory, Padova, Italy.
- Brewer, W. F. (1986). What is autobiographical memory? In D. C. Rubin (Ed.), *Autobiographical memory* (pp. 25–49). Cambridge: Cambridge University Press.
- Brewin, C. R. (1989). Cognitive change processes in psychotherapy. *Psychological Review*, *96*, 379–394.
- Brewin, C. R., & Andrews, B. (1998). Recovered memories of trauma: Phenomenology and cognitive mechanisms. *Clinical Psychology Review*, *18*, 949–970.
- Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of post-traumatic stress disorder. *Psychological Review*, *103*, 670–686.
- Briere, J., & Conte, J. (1993). Self-reported amnesia for abuse in adults molested as children. *Journal of Traumatic Stress*, *6*, 21–31.
- Brown, D., Schefflin, A., & Hammond, D. (1997). *Memory, trauma treatment, and the law*. New York: Norton.
- Brown, R., & Kulik, J. (1977). ‘Flashbulb memories’. *Cognition*, *5*, 73–99.
- Christianson, S.-A. (1992). Emotional stress and eyewitness memory. *Psychological Bulletin*, *112*, 284–309.
- Conway, M. A. (1995). *Flashbulb memories*. Hove: Erlbaum.
- Davis, P. J. (1987). Repression and the inaccessibility of affective memories. *Journal of Personality and Social Psychology*, *53*, 585–593.
- Destun, L. M., & Kuiper, N. A. (1996). Autobiographical memory and recovered memory therapy: Integrating cognitive, clinical, and individual difference perspectives. *Clinical Psychology Review*, *16*, 421–450.
- Ehlers, A., & Steil, R. (1995). Maintenance of intrusive memories in posttraumatic stress disorder: A cognitive approach. *Behavioural and Cognitive Psychotherapy*, *3*, 217–250.
- Elliott, D. (1997). Traumatic events: Prevalence and delayed recall in the general population. *Journal of Consulting and Clinical Psychology*, *65*, 811–820.
- Elliott, D., & Briere, J. (1995). Post-traumatic stress associated with delayed recall of sexual abuse: A general population study. *Journal of Traumatic Stress*, *8*, 629–647.
- Feldman-Summers, S., & Pope, K. S. (1994). The experience of ‘forgetting’ childhood abuse: a national survey of psychologists. *Journal of Consulting and Clinical Psychology*, *62*, 636–639.
- Foa, E. B., Molnar, C., & Cashman, L. (1995). Change in rape narratives during exposure therapy for posttraumatic stress disorder. *Journal of Traumatic Stress*, *8*, 675–690.
- Freyd, J. J. (1996). *Betrayal trauma: The logic of forgetting childhood abuse*. Cambridge, MA: Harvard University Press.
- Gold, S. N., Hughes, D., & Hohnacker, L. (1994). Degrees of repression of sexual abuse memories. *American Psychologist*, *49*, 441–442.

- Harvey, M. R., & Herman, J. L. (1994). Amnesia, partial amnesia, and delayed recall among adult survivors of childhood trauma. *Consciousness and Cognition*, 3, 295–305.
- Herman, J. L., & Harvey, M. R. (1997). Adult memories of childhood trauma: A naturalistic clinical study. *Journal of Traumatic Stress*, 10, 557–571.
- Herman, J. L., & Schatzow, E. (1987). Recovery and verification of memories of childhood sexual trauma. *Psychoanalytic Psychology*, 4, 1–14.
- Johnson, M. K., Foley, M. A., Suengas, A. G., & Raye, C. L. (1988). Phenomenal characteristics of memories for perceived and imagined autobiographical events. *Journal of Experimental Psychology: General*, 117, 371–376.
- Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin*, 114, 3–28.
- Koss, M. P., Tromp, S., & Tharan, M. (1995). Traumatic memories: Empirical foundations, forensic and clinical implications. *Clinical Psychology: Science and Practice*, 2, 111–132.
- Lindsay, D. S., & Read, J. D. (1994). Psychotherapy and memories of childhood sexual abuse: A cognitive perspective. *Applied Cognitive Psychology*, 8, 281–338.
- Lindsay, D. S., & Read, J. D. (1995). 'Memory work' and recovered memories of childhood sexual abuse: Scientific evidence and public, professional and personal issues. *Psychology, Public Policy and the Law*, 1, 846–908.
- Loftus, E. F., Polonsky, S., & Fullilove, M. (1994). Memories of childhood sexual abuse: Remembering and repressing. *Psychology of Women Quarterly*, 18, 67–84.
- Melchert, T. P. (1996). Childhood memory and a history of different forms of abuse. *Professional Psychology: Research and Practice*, 27, 438–446.
- Morton, J. (1994). Cognitive perspective on memory recovery. *Applied Cognitive Psychology*, 8, 389–398.
- Morton, J., Hammersley, R. H., & Bekerian, D. A. (1985). Headed records: A model for memory and its failures. *Cognition*, 20, 1–23.
- Myers, L. B., Brewin, C. R., & Power, M. J. (1992). Repression and autobiographical memory. In M. A. Conway, D. C. Rubin, H. Spinnler, & W. A. Wagenaar (Eds.), *Theoretical perspectives on autobiographical memory* (pp. 375–390). Dordrecht: Kluwer Academic.
- Pillemer, D. B., & White, S. H. (1989). Childhood events recalled by children and adults. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 21, pp. 297–340). Orlando, FL: Academic Press.
- Pope, K. (1997). Science as careful questioning: Are claims of a false memory syndrome epidemic based on empirical evidence? *American Psychologist*, 52, 997–1006.
- Ramsay, R., Gorst-Unsworth, C., & Turner, S. (1993). Psychiatric morbidity in survivors of organised state violence including torture: A retrospective series. *British Journal of Psychiatry*, 162, 55–59.
- Roe, C., & Schwartz, M. (1996). Characteristics of previously forgotten memories of sexual abuse: A descriptive study. *Journal of Psychiatry and Law*, 24, 189–206.
- Terr, L. C. (1991). Childhood traumas: An outline and overview. *American Journal of Psychiatry*, 148, 10–20.
- Tromp, S., Koss, M. P., Figueredo, A. J., & Tharan, M. (1995). Are rape memories different – A comparison of rape, other unpleasant, and pleasant memories among employed women. *Journal of Traumatic Stress*, 8, 607–627.
- Williams, L. M. (1994). Recall of childhood trauma: A prospective study of women's memories of childhood sexual abuse. *Journal of Consulting and Clinical Psychology*, 62, 1167–1176.
- Van der Kolk, B. A., & Fisler, R. (1995). Dissociation and the fragmentary nature of traumatic memories: Overview and exploratory study. *Journal of Traumatic Stress*, 4, 505–525.
- Van Velsen, C., Gorst-Unsworth, C., & Turner, S. (1996). Survivors of torture and organized violence: Demography and diagnosis. *Journal of Traumatic Stress*, 9, 181–193.
- Yuille, J. C., & Cutshall, J. L. (1989). Analysis of the statements of victims, witnesses, and suspects. In J. C. Yuille (Ed.), *Credibility assessment* (pp. 175–191). Dordrecht: Kluwer Academic.

Appendix : Criteria for rating degree of amnesia

Where memories were recovered in therapy, degree of amnesia was rated for the status of these memories *at the outset of therapy*. Where memories were recovered prior to therapy, degree of amnesia was rated for the status of these memories *before the first event was recovered*. Account was taken of the therapist's report of what the client said or did in preference to the therapist's opinion. For example if the therapist reported the client said s/he had no prior conscious knowledge of the event but the therapist's impression was that s/he must have known at some level, a rating of total amnesia was made.

Total amnesia

Rated where:

- (1) Comments suggested that there was no prior conscious knowledge or suspicion or vague sense of the occurrence of the event prior to memory recovery. No conscious knowledge could include prior dreams, but not flashbacks, which were rated as partial memory.
- (2) Event was always known, but only because the client had been told by others that it had occurred. The client had no personal conscious memory.
- (3) Memories of more than one independent event or complex of events were recovered (e.g. client recovered event of CSA by stranger, and also recovered CSA by father at another time), and at least one was recovered from total amnesia (even if others were recovered from partial amnesia or vague sense).

Vague sense

Rated where:

- (1) There were definite comments that client had a vague sense that something negative had occurred without any conscious memory of an actual event.
- (2) Comments indicated client had a vague or definite suspicion that something negative had occurred without any conscious memory of an actual event.
- (3) Client reported fear or wariness about a particular person usually without understanding why. If the feelings about a particular person involved dislike or antipathy without evidence of vague suspicion or fear or wariness, total amnesia was rated.

Partial memory

Rated where:

- (1) Client had always known that a particular event or set of events had happened, but memory for details was vague, sketchy or fragmented. Recovery here involved recalling further details, particular forgotten aspects, and/or a fuller account. In its most fragmented form, partial memory might involve flashbacks only.
- (2) In the absence of other evidence, there was an indication that an event was not *thought* about, rather than not *known* about (which would be rated as total amnesia).