RECOVERED MEMORIES OUTSIDE OF THERAPY
Recovered Memories of Child Abuse Outside of Therapy

Olivier Dodier¹ & Lawrence Patihis²

¹Université de Nantes
²University of Portsmouth

Correspondence should be sent to: Olivier Dodier, ododier.univ@gmail.com, Faculté de psychologie, Université de Nantes, Chemin de la Censive du Tertre, Nantes Cedex 3

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Abstract
We examined the incidence of recovered memories of child abuse in a large French general public sample (N = 3346). Of the 905 (27% of total sample) who reported having memories of abuse, 211 (23%) reported recovered memories of child abuse that they had no previous
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memory of, with 82 of these (9% of the 905) reporting that they did not know they were abused beforehand. Ninety percent of the latter reported having recovered their memories when not in a therapy at the time. Those who reported recovered memories outside of therapy often reported discussions with peers and/or media exposure related to childhood abuse that occurred either before or during memory recovery. Our prevalence results are discussed in light of the hypothesis that many recovered memories are in fact reinterpreted continuous memories. The findings on context are discussed in relation to the work on the malleability of memory.

Keywords: Recovered memory, Repressed memory, Childhood abuse, Suggestion, False Memory
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Introduction

The controversy surrounding recovered memories of abuse—that were previously unknown to the person—is one of the best-known scientific controversies in psychology. In the 1990s, two parties opposed each other on academic, clinical and judicial grounds. The debate was about whether it is possible or usual that trauma is blocked away from consciousness and unknown to the person, and secondarily whether recovery of previously unknown abuse from many years ago is reliable enough to be trusted in therapy or a court of law. Recent data show that this controversy is still being explored in the scientific literature (Dodier, 2019; Otgaar et al., 2019). One proposed reason for the persistence of the debate may be the inclusion in the DSM 5 (American Psychiatric Association, 2013) of dissociative amnesia, echoing the idea of unconscious blocking and inaccessibility of traumatic memories (see Otgaar et al., 2019).

Recently, the phenomenon of recovered memory has been used by the government in France to justify an extension of the statute of limitations period from 20 to 30 years (after the complainant has reached 18 years of age; see Dodier & Tomas, 2019). More generally, it seems that the recovered memory is a current issue in the field (e.g., in Europe, see Shaw & Vredeveldt, 2019). For instance, recent research has shown that memory recovery in therapy is an issue in France (Dodier, Payoux, & Patihis, 2019) as well as in the U.S. (Patihis & Pendergrast, 2019; Patihis, Wood, Pendergrast, & Herrara, in press), but, to our knowledge, no recent research has investigated memory recovery of hitherto unknown abuse outside of therapy. We address this gap in the current study.

Reports of Recovered Memories in Therapy

Recent research has investigated whether therapeutic practices dedicated to traumatic memory recovery are always implemented in clinical settings. Patihis and Pendergrast (2019) surveyed 2316 U.S. adults and found that 5% (n = 122) reported that during the course of
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therapy they came to remember being abused as a child, when they had no previous memory of such abuse. They also found that participants who had discussed repressed memories with their therapist were 20 times more likely to report recovered memories of abuse (for which they had no previous memory) than those who did not discuss (see Patihis et al., in press, for similar results in U.S. undergraduate students). In a study with 1312 French participants, Dodier, Patihis, & Payoux (2019) used a similar questionnaire (translated into French), and added some cautious follow-up questions to distinguish between purported repressed memories and other types of reported abuse (e.g. continuous memory). They found that 6% (n = 33) reported having during therapy recovered memories of child abuse that they were unaware of before therapy. As in Patihis and Pendergrast (2019), discussing the possibility of repressed memories with therapists was associated with reports of recovered memories of past abuse.

The Issue of Memories Recovered Outside of Therapy

Several survey studies, conducted mainly in the 1990s, have sought to estimate the prevalence of recovered memories—regardless of their context (i.e., inside or outside of therapy) of recovery—and have shown contrasting results. For example, Melchert (1996) found that among 92 individuals reporting physical childhood abuse, 93 reporting emotional abuse, and 74 reporting sexual abuse, respectively 21% (n = 13), 18% (n = 15), and 18 (n = 13) reported a period without recollection of abuse. Following the same breakdown of childhood abuse, Melchert and Parker (1997) showed that among 78 self-reported physical child abuse victims, 101 self-reported emotional child abuse victims, and 111 self-reported sexual child abuse victims, about 12% (n = 9), 15% (n = 15), and 20% (n = 22) respectively reported forgetting and then recovering memories of abuse. Loftus, Polonsky, and Fullilove (1994) showed that in a sample of 52 women reporting childhood sexual abuse and responding the authors’ question about persistence of memory, 19% (n = 10) of them reported
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a period without recollection of abuse. Finally, Williams (1995) observed that among 75 women with a history of sexual abuse who had been examined and hospitalized 17 years prior to the survey and which they remembered at the time of the survey, 16% (n = 12) reported experiencing a period without memory of the abuse. However, other studies have reported higher prevalence rates. Indeed, Hovdestad and Kristiansen (1996) showed 51% (n = 51) of women reporting recovery of memories of sexual abuse in an initial sample of 113 women. Hunter and Andrews (2002) found that among 74 women reporting a history of childhood sexual abuse, approximately 57% (n = 42) reported a period of forgetting the abuse. Briere and Conte (1993) observed that approximately 59% (n = 267) of a clinical population of adults reporting childhood sexual abuse (N = 450) also reported a period without memory of the abuse. Finally, Roe and Schwartz (1996) found that 77% (n = 40) of 52 women who had been hospitalized for treatment of sexual trauma reported a period of forgetting of the abuse.

Other studies have opted for other methods. For example, Williams (1994) and Goodman et al. (2003) interviewed individuals who had a history of childhood sexual abuse that they had reported years earlier (17 years earlier in Williams, 1994, N = 129, only women; 13 years earlier in Goodman et al., 2003, N = 168). The results showed that, respectively, 38% (n = 49) and 16% (n = 26) did not spontaneously report the abuse during the interview.

While the different methodologies (e.g., question asked, sample size, sample characteristics; see Table 1 for a summary) may explain the contrasting results, it has been shown in the literature that they may also be due to other factors, such as the type of abuse (see Epstein & Bottoms, 2002, where participants reported more frequently periods without memories of sexual and physical abuse than of other types of abuse, or Bottoms, Najdowski, Epstein, & Badanek, 2012, who found low rates of forgetting trauma among those reporting a history of trauma, with the highest rate, 14%, for sexual abuse, followed by physical abuse, 9%, and other types of abuse, 6%).
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Despite this research, we still lack some information on the context in which these memories were recovered (e.g., inside or outside of therapy). There is therefore a need to provide data on the prevalence of recovered memories inside and outside of therapy in a general public sample—and to explore other factors. For example, there is an abundance of research on the malleability of memory that has shown that individuals can easily incorporate details suggested by external sources into their memories (e.g., misinformation paradigm, see Loftus, 2005), or even develop entire false memories (“lost-in-the-mall paradigm”, e.g., Loftus & Pickrell, 1995; Shaw & Porter, 2015; imagination inflation paradigm, e.g., Garry, Manning, Loftus, & Sherman, 1996; also see Scoboria et al., 2017, for a mega-analysis of the implantation of entire false memories). Thus, there is a need for research exploring potential sources of suggestion by third parties (e.g., discussion with others on the issue of childhood abuse or repressed memories), or external factors that lead people to imagine child abuse events and self-generate false memories (books, videos on TV or on the Internet, more generally personal documentation). This could shed light on the phenomenon of childhood abuse memories recovered outside of therapy.

What Do People Really Mean When They Say They Have Recovered Memories?

The studies cited above did not always measure the possible confusion by participants between reports of recovered memories that involved memory that was inaccessible, accessible, or continuous memories that were reinterpreted. For example, in Briere and Conte (1993) participants were specifically asked whether ”During the period of time between when the first forced sexual experience happened and [their] eighteen birthday, was there a time when [they] could not remember the forced sexual experience?” (p. 24). Such a question does not identify possible alternative mechanisms that may have explained the alleged lack of memory, such as metamemory errors (see discussion in McNally, Clancy, & Barrett, 2004). In
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other words, the rate of reported recovered memories might be overestimated due to difficulties in accurately self-assessing in retrospect whether there was a period of time when they could not remember. To address this limit, Dodier et al. (2019) and pathis and Pendergrast (2019) asked specifically about recovered memories of child abuse that were unknown to the person before their recall in therapy. In Briere and Conte (1993) study, as well as elsewhere, there was some concern that participants may have meant something else. Possible alternative explanations include continuous memories of child events that are re-appraised as abuse (McNally & Geraerts, 2009; Raymaekers et al., 2012; or see Epstein & Bottoms, 2002, who found that 53% of the participants who reported forgetting abuse memories endorsed this explanation).

Current Study

Using a survey method similar to that used in Dodier et al. (2019) and Pathis and Pendergrast (2019), with further refinements, we attempted to deepen knowledge in a population of French adults about the phenomenon of memory recovered outside of any therapeutic framework. The current study therefore has two main goals: (1) to estimate the prevalence of recovered memories of child abuse inside and outside of therapy while making a clear distinction between continuous, re-interpreted and recovered memories, and (2) to explore the circumstances in which these memories emerged by investigating potential sources of suggestion, or potential retrieval cues.

Method

Participants

In total, 5044 adult participants participated online in French. There was no compensation (financial or otherwise) for participating in this study. Participants were recruited—in French—via online social networks (Twitter and Facebook). The decision to exclude some participants was made prior to the data collection—in the following way. We
conducted two rounds of participant exclusion: (1) we excluded participants who provided only their socio-demographic data and the very first question related to recovered memories of child abuse (see below), without further completion of the questionnaire \((n = 1585)\), and then (2) we excluded 97 participants who responded too inattentively to the questionnaire so that their responses would not be usable, as well as 16 who indicated they had lied about their age in order to have access to the questionnaire (.. After exclusions, our dataset for analysis included 3346 participants. All participants gave informed consent to participate in this study and remained anonymous throughout. The study was conducted in accordance with the ethical guidelines of the French National Consultative Commission on Ethics for Psychologists (see http://www.cncdp.fr/) and the Declaration of Helsinki.

Their mean age was 34.3 years old \((SD = 11.1, \text{range} 18–76, \text{Median} 33.0)\), 1745 \((52.2\%, \text{CI 95\%} = [50.4, 53.9])\) reported to be female, 1574 \((47.0\%, \text{CI 95\%} = [45.3, 48.7])\) reported to be male, and 27 \((0.8\%, \text{CI 95\%} = [0.5, 1.2])\) reported to have another gender (e.g., non-binary). In terms of educational level, 330 \((9.9\%, \text{CI 95\%} = [8.9, 10.9])\) participants reported a high school degree, 458 \((13.7\%, \text{CI 95\%} = [12.5, 14.9])\) a 2-year university degree, 443 \((13.2\%, \text{CI 95\%} = [12.1, 14.4])\) a 3-year university degree, 335 \((10.0\%, \text{CI 95\%} = [9.0, 11.1])\) a 4-year university degree, 1370 \((40.9\%, \text{CI 95\%} = [39.3, 42.6])\) a master’s degree, and 339 \((10.1\%, \text{CI 95\%} = [9.1, 11.2])\) a Ph.D./M. D.

Our sample was somewhat representative of the findings from the literature regarding beliefs about repressed memory (see Otgaar et al., 2019; Otgaar et al., 2020), with 70.7\% \((n = 2237, \text{CI 95\%} = [69.1, 72.3])\) endorsing the idea that traumatic experiences can be repressed for many years and then recovered.

**Materials and Procedure**

The French language questionnaire was developed and distributed on LimeSurvey, which is online software for creating surveys. A message was posted on Twitter and
Facebook inviting people to participate in a study on childhood memories, with an invitation to retweet/share it in order to reach as many participants as possible. The tweet has been retweeted over 200 times. The questionnaire began with a consent form which explained the theme and objectives of the study. Once consent was given, the questionnaire was divided into four or five parts, depending on the participants' responses. All participants answered the first two (first and second parts) and the two last parts (fourth and fifth parts), and the third part were follow-up questions only presented to the subset of participants who reported recovering memories (that participants did not previously know). The average time to complete the questionnaire was 4.76 minutes ($SD = 3.46$, Median 3.76).

In the first part, we asked participants their age, gender (male, female, or other, please specify), and level of education. In view of the sensitive topic of the questionnaire, and the importance of perceived anonymity and confidentiality, we did not ask questions that could easily identify them.

In the second part, we asked them the initial question: “Have you ever recovered a memory of being abused as a child, when you had no previous memory of such abuse?” Following this question, a conditional follow-up question was asked, depending on the answer given. Typically, this took the following form: “You answered “yes”/ “no”/“I don’t know/am not sure”: What do you mean exactly?” . This question then allowed us to classify participants into different categories: (1) no recovered memories of child abuse, (2) continuous memories of child abuse, (3) reinterpretation of continuous childhood memories as abuse, (4) recovered memories of child abuse (that participants were aware of before their first recall), (5) recovered memories of child abuse (that participants did not previously know about nor remember), or (6) they prefer not to talk about it.

The third part were follow-up questions presented only to participants who reported recovered memories of child abuse. These questions included type of abuse, age the abuse
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started, the age they recovered their memories, estimated accuracy of their recovered memories, whether they had cut off contact with family and/or acquaintances as a result of the memory recovery, and the context in which they had recovered their memories.

With regard to the context of those recovered memories: we first asked those that reported recovering memories if they had recovered their memories when they were alone, with one or more people, or in therapy. Those that had answered “alone” or “with one or more people”, were asked if in the days/weeks/months before memory recovery, they were exposed to information on the topic of child abuse (e.g., exposure to media related to child abuse, discussing with others on the topic of child abuse, child care). They had the possibility to choose more than one option, including “other (please specify)”. The same question was then asked regarding the event(s) during which the memory recovery occurred. Those that had indicated that they had recovered memories in therapy were asked about discussions with the therapist about repression, the techniques used by the therapist to recover memories of abuse, the year of therapy, the type of therapy, whether the memories were recovered during or outside a therapy session, and the gender of the therapist.

We focused some of our analyses on the subgroup who reported after the careful follow up questions recovered memories of abuse that the participants were not aware of beforehand to explore the proportion that occurred inside or outside therapy, and potential suggestive influences they were exposed to. In the case of recovered memories of abuse of which participants were aware, simply knowing that they had been abused may have been a factor leading to, for example, exposure to media related to child abuse, or discussions with others about child abuse.

The fourth part of the questionnaire dealt with participants’ beliefs about repression in order to explore the links between reports of recovered memories and beliefs about whether
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memories of childhood abuse can be repressed, as well as to ascertain whether our sample was abnormally sceptical on the topic of repressed memories, or not.

The fifth and final part of the questionnaire included questions (1) to identify participants who responded too quickly and participants who lied about their age in order to participate, and (2) to probe for evidence of sampling bias, given the sensitivity and emotional nature of the research subject. To probe for evidence of sampling bias we asked several questions: how they heard about the study, and why they had participated in the study. We found only a minority of the participants stated that they knew that the subject of the questionnaire was recovered memories (3.1%), or that they had participated because they felt personally and emotionally involved in the topic of traumatic memories (5.4%). In other words, the vast majority of our sample appeared not to be self-selecting themselves into the study because of strong prior beliefs about the recovered memory topic. Finally, participants were given the opportunity to freely add comments at the end of the questionnaire, before being provided with a debriefing page. The debriefing page presented the objective of the research, and why—in order not to bias their answers—we did not precisely specify our research questions earlier in the survey. The supplemental online material contains questionnaire and social media invitation wordings used in the study (in French with an English translation) questionnaire used and online social media invitations).

Results

All data can be accessed at https://osf.io/khgrz/. The supplemental online material includes the questionnaire material and more detailed results of our analyses (e.g., association between sociodemographic variables and reports of recovered memories, a more complete set percentage, 95% confidence intervals). We ran Statcheck (http://statcheck.io/) on the statistical analyses to detect any error in statistical reporting, which all yielded the rating
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“consistent”. Statcheck extracts the statistical results in a manuscript (e.g., $F$-values, $t$-values, Chi 2, $df$, $Z$-value, etc.) to check whether they match the reported $p$-values.

**Prevalence of Reported Recovered Memories**

Of those reporting “Yes” in the initial question. As reported in Table 2, 13.3% ($n = 445$) of the sample of the 3346 participants initially reported that they recovered memories of child abuse for which they previously had no memory of. Of the 445 who initially reported having memories of abuse 30.8% ($n = 137$) reported that they did not know they were abused, but did have memory of what happened to them, and at a specific time in their life, they reinterpreted what happened as abuse, 34.4% ($n = 153$) reported that knew they were abused and had always memory of what happened to them, 19.3% ($n = 86$) reported that they knew they were abused, but had no memory of the abuse before they remembered it, and the memories emerged at a specific time in their life and 15.5% ($n = 69$) reported that they did not know they were abused before they remembered it, and had no memory of any abuse, and the memories emerged at a specific time in their life. In other words, 34.8% ($n = 155$) of the 445 confirmed that they meant something akin the recovery of memories that they did not previously remember.

Combining all recovered and continuous child abuse reports. Combining those reporting both continuous and recovered memories of child abuse (i.e., both yes and no answers to the initial question), 27.0% ($n = 905$) of the total sample of 3346 participants reported having memories of childhood abuse (not necessarily recovered memories). In follow up questions that checked what they meant exactly in their initial answer to the initial question (see Table 2 for the exact wording), some indicated that they actually did have some previous memory of abuse. Among these 905 participants, 48.8% ($n = 442$) reported that they always had memories that they later reinterpret as abuse, 27.8% ($n = 252$) reported that they had continuous memories of child abuse, 14.3% ($n = 129$) reported that they always knew that
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they had been abused in childhood but later remembered it, and 9.1% \((n = 82)\) reported that they had recovered memories of child abuse that they were not aware of before the recovery.

To sum up, of the 905 who reported having memories of abuse, 23% \((n = 211)\) reported recovered memories of child abuse that they had no previous memory of, with 82 of these \((9\% \text{ of the } 905)\) reporting that they did not know they were abused beforehand. Out of the total sample \((N = 3346)\), this represents, respectively, 6.3% and 2.5%.

[Table 2 here]

**Within those Recovering Memories of Which they had no Prior Knowledge nor Memory**

**Age, genre and education.** In this group, the average was 34.4 years old at the time of the survey \((SD = 11.1, \text{ range } 18–68)\). Their average age did not differ from that of the rest of the total sample \((n = 3264)\), \(r(3344) = -0.023, p = .982, \text{ Cohen's } d = -0.003\). Of this subset, 73.2\% \((n = 60, \text{ CI } 95\% = [62.2, 82.4])\) reported to female, 22.0\% \((n = 18, \text{ CI } 95\% = [13.6, 32.5])\) male, and 4.9\% \((n = 4, \text{ CI } 95\% = [1.3, 12.0])\) other gender. In terms of educational level, 9.4\% \((n = 8, \text{ CI } 95\% = [4.3, 18.3])\) participants had a high school degree, 16.5\% \((n = 14, \text{ CI } 95\% = [9.7, 27.0])\) had a 2-year university degree, 15.3\% \((n = 13, \text{ CI } 95\% = [8.7, 25.6])\) had a 3-year university degree, 7.1% \((n = 6, \text{ CI } 95\% = [2.7, 15.2])\) had a 4-year university degree, 38.8\% \((n = 33, \text{ CI } 95\% = [29.6, 51.7])\) had a master's degree, and 9.4\% \((n = 8, \text{ CI } 95\% = [4.3, 18.3])\) had a Ph.D./M.D. level.

**Characteristics of the abuse.** In this subgroup of 82, the most commonly reported type of abuse by participants was sexual abuse \((78.0\%, n = 64, \text{ CI } 95\% = [67.5, 86.4])\), followed by emotional abuse \((30.5\%, n = 25, \text{ CI } 95\% = [20.8, 41.6])\), physical abuse \((24.4\%, n = 20, \text{ CI } 95\% = [15.6, 35.1])\), and neglect \((13.4\%, n = 11, \text{ CI } 95\% = [6.9, 22.7])\). Those participants had the opportunity to report more than one type of abuse. One participant had selected the "Other" option, before specifying that it was sexual contact. This response was then recoded as sexual abuse. The average age they were when the abuse began was reported...
as 6.8 years old ($SD = 3.0$, range 1–18). They reported remembering the abuse for the first time on average at the age of 22.3 years old ($SD = 7.4$, range 4–41, Median 21).

**Gender comparisons.** There were proportionately more women who in this group (74.4%, 58 of 78) than women who did not report such memories (52.0%, 1678 of 3225). In contrast, proportionately fewer men reported recovering memories (25.6%, 20 of 78) than men who did not report such memories (48.0%, 1547 of 3225), $\chi^2(1, N = 3303) = 15.20, p < .001$, Cramer’s $V = .032$, OR = 0.37 (CI 95% = [0.22, 0.63]). Finally, this group of participants who reported prior unknown recovered memories did not differ from those who did not report recovering memories with respect to education level, $\chi^2(6, N = 3346) = 3.55, p = .737$, Cramer’s $V = .033$.

**Accuracy of recovered memories.** Of this group, 80.5% ($n = 66$, CI 95% = [70.3, 88.4]) reported that they considered their recovered memories accurate, with 19.5% ($n = 16$, CI 95% = [14.6, 33.8]) who considered that they were not accurate.

**Consequences of recovered memories.** Regarding consequences, 26.8% ($n = 22$, CI 95% = [17.6, 37.8]) reported that they had broken off contact with their family or acquaintances as a result of these recovered memories. Of these 22, 77.3% ($n = 17$, CI 95% = [54.6, 92.2]) reported that they had not resumed contact, 13.6% ($n = 3$, CI 95% = [2.9, 34.9]) reported that they had partially resumed contact, and 9.1% ($n = 2$, CI 95% = [1.1, 29.2]) reported that they had completely resumed contact.

**Contexts of reported recovered memories.** Because 9 participants of the 82 did not complete the following items, the following analyses in this subsection were performed on a sample of 73. In this group, 52.1% ($n = 38$) reported they were alone having recovered their memories of child abuse, 38.4% ($n = 28$) when they were with one or more people, and 9.6% ($n = 7$) during therapy. All details related to contexts of memory recovery are reported in Tables 3 and 4.
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As shown in Table 3, before the memories of previously not remembered and unknown child abuse were recovered, the events most commonly reported were exposure to media related to child abuse (e.g., seeing videos on the Internet or TV, reading online or books about memory recovery; 33.3%, n = 22), followed by discussions with people on the topic (25.8%, n = 17). Twenty-one participants (31.8%) chose “None of these events” or “I don’t know”. And 7.6% (n = 5) reported other events, such as “Introspection”, “Looking for my past”, or “I heard from the perpetrator”.

[Table 3 here]

As reported in Table 4, the events during which participants recovered their memories of childhood abuse the most commonly reported where exposure to media (16.7%, n = 11), followed by discussions with people on the theme of child abuse (12.1%, n = 8). The responses given to the response option ”Other” allowed us to group a few and create new categories. For instance, 6.1% (n = 4) of the participants reported recovering their memories of child abuse while sleeping and dreaming, and the same amount reported recovering their memories while caring for a child or children. Note that 24.2% (n = 16) reported other events, which included, for instance, “I was attending a conference of a lawyer who was talking about his cases of child sexual abuse”, “I was having coffee with friends, we were discussing sports”, “I was thinking about what could be blocking me to do a specific action (traumatic block, I guess...)”.

[Table 4 here]

Beliefs in repression and memory recovery outside of therapy. The majority of those who reported recovering an abuse memory outside of therapy (that they did not previously know about nor remember) reported that they believed that one can repress and then recovered traumatic memories (73.0%, n = 46 of 63, CI 95% = [60.3, 83.4]). No statistical association was found between those recovering memories alone or with others and
believing or not in repression, $\chi^2(1, N = 63) = 0.54, p = .461$, Cramer’s $V = .093$, OR = $-0.432$ (CI 95% = [-1.583, 0.720]).

**Discussion**

**Reports of Recovered Memories**

In a French language online survey, we investigated the percentages of individuals who reported recovering child abuse memories inside and outside of therapy. Using careful follow-up questions to the initial question about recovered memories, we found that 9% of the participants who reported child abuse reported having recovered an abuse memory that they did not previously know about nor remember (2.5% of the total sample). This rises to 23% of this subsample (6.3% of the total sample) if we add the participants who had knowledge of abuse; note that this rate is quite consistent with past and similar large-scale non clinical survey or prospective studies; e.g., Bottoms et al., 2012, Epstein & Bottoms, 2002; Goodman et al., 2003; Melchert, 1996). Our sample may not be representative of French people over the age of 18, so we cannot make a precise extrapolation of the number of people this might involve. However, we might safely assume that hundreds of thousands of French people may be affected by the recovery of memories of childhood abuse that they were not aware of beforehand.

In keeping with previous research in France, a majority of those reported recovered memories were of sexual abuse (Dodier et al., 2019). Also consistent with past research in both the U.S. and France (Dodier et al., 2019; Patihis & Pendergrast, 2019; Patihis et al., in press) recovered memories of previously unknown led family estrangement in a minority of cases.

In our study, we found that nearly one third of the people who initially reported having recovered memories of childhood abuse then reported in follow-up questions that they always had memories but had reinterpreted them as abusive. Previous findings of Epstein and
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Bottoms (2002) and our findings are consistent with the hypothesis that recovered memories are sometimes reinterpretations of continuous memories (see also, for this hypothesis, Loftus, Joslyn, & Polage, 1998; McNally & Geraerts, 2009; Raymaekers et al., 2012). Thus, with other factors (e.g., methodological issues; type of abuse), what may explain the large differences in results in past prevalence studies described in the introduction (e.g., Briere & Conte, 1993; Hovdestad & Kristiansen, 1996; Loftus et al., 1994; Melchert, 1996; Williams, 1995) could be a question of false positives, with some studies failing to identify individuals who have confused recovered memories with, as our research emphasizes, reinterpreted continuous memories. In other words, identifying the rate of people confusing recovered memories with re-interpreted memories could reduce by a third (or by half, according to the results of Epstein & Bottoms, 2002) the range of prevalence of discontinuous recovered memories of child abuse observed in the literature. This reduction in prevalence may be further reduced if some of the reported recovered memories were misreported as being previously not known about due to the forgot-it-all-along effect—an underestimation of prior remembering (Schooler, Bendiksen, & Ambadar, 1997).

Contexts of the Reported Recovered Memories

In this study, we explored whether people first recovered their memories of childhood abuse inside or outside of therapy (memories that they were unaware of beforehand and that they never remembered). Our study shows that the 90% of such recovered memories were recovered outside of therapy (10% were recovered in therapy). However, note that although we clearly asked whether or not people had recovered their memories in therapy, we cannot put aside that perhaps some participants had been in therapy before recovering their memories outside of therapy. Future prevalence studies should explore this in more detail.

Participants who reported recovering an abuse memory that they did not previously know about nor remember also reported events before and during memory recovery that may
have served as retrieval cues or sources of suggestion. We found that during the period prior to recovering those memories of childhood abuse, a noticeable number of respondents (33%) reported exposure to diverse media related to child abuse (online videos, TV, books). Approximately 17% reported media exposure during memory recovery. There is no indication in our study that any recovered memory reported by respondents is false—it's entirely possible that these memories are true—, but personal documentation on this topic has already been identified as a potential source of suggestion leading to the development of false memories. Although it does not involved videos, we can relate this finding to a case reported by Kaplan and Manicavasagar (2003) in which a 42-year-old woman reported remembering that she had been sexually abused during satanic rites orchestrated by her parents when she was a child, and this following personal documentation (readings) on child sexual abuse and satanic rites. In the case of false memory, research on imagination inflation has shown that it can take a period of time between imagining an event and the increase in confidence that it had actually happened (e.g., one week, e.g., Calvillo, Vasquez, Pesavento, 2019; Nichols & Loftus, 2019; two weeks, e.g., Garry, Manning, Loftus, & Sherman, 1996; Goff & Roediger, 1998). However, it appears that imagination inflation tasks can lead to increased confidence that an event occurred within a few minutes (e.g., Patihis, Frenda, & Loftus, 2018; Patihis et al., 2013). In the case of authentic memories, it is possible that the exposure to media acted as a cue to access the memory trace of the event, thus explaining the retrieval of a memory that participants did not suspect existed.

We also found that before recovering memory of child abuse that they were not aware of beforehand, 26% of the participants discussed with other people the topic of child abuse. During memory recovery, respectively 12% and 3% reported face-to-face and telephone discussions on the topic of child abuse. Such discussions could have contained suggestions or leading questions, even unintentionally, especially if the discussants believe that traumatic
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memory can be repressed and then recovered (as most of public samples tend to, Patihis et al., 2014; Otgaar et al., 2020). While the role of suggestion has already been discussed among false memories recovered in therapy (see Otgaar et al., 2019; Scoboria et al., 2017), caution is also advisable when such memories have been recovered outside of therapy. However, as with the other contexts we have already discussed, it is also possible that such discussions may have generated retrieval cues that allowed access to authentic memories. More generally, a limitation to our results is that we were unable to explore the contexts in depth so as to more likely identify what was more suggestive or mnemonic in nature.

We can link our results to those of Elliott (1997). The author showed that media exposure and discussions with other people were triggers for delayed recall of traumatic events in 54% and 37% of cases, respectively. However, in this study, it was not clear whether these triggers occurred during memory recovery, or potentially days, weeks or months prior to recall. Our study addresses this issue and adds to knowledge about the contexts of recovery of memories of childhood abuse. Note, however, that in Elliott's study, 37% of participants reported trauma specific reminders as triggers. Although we did not include this category in the response options, no responses given to the "Other" response option could be grouped to form such a large category.

Finally, around 14% of those who said they were outside of therapy during the recovery of previously not remembered and unknown abuse memories reported that they were “doing nothing” at the time. This could mean that they were not engaged in an event that might have acted as a source of suggestion, or that they were unable to identify at the time of completing the questionnaire a particular event that might have include a retrieval cue.

Readers should note that given the small sample size of participants who reported recovering memories of childhood abuse that they were not aware of until they remembered it, some of the percentages obtained on the context of recovery were calculated on even
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smaller samples. This necessarily results in very wide confidence intervals (see Supplemental Tables) which limits the generalizability of these findings. Readers are therefore invited to consider these memory recovery context data more as qualitative data on the different contexts in which people may recover allegedly repressed memories, and not as quantitative data that can be generalized.

General Limitations

There are a few other limitations that still need to be addressed. First of all, as with all data collected through surveys that use memories that sometimes date back several years, we cannot rule out the hypothesis that some participants believe they have recovered memories (or reinterpreted them, etc.), without their memory of this being strictly accurate. One solution to this would be to interview people for whom memory recovery events are documented (e.g., cases with legal or other documentation).

The participants were recruited via social networks, which are used more by rather young populations (see the report conducted by the Pew Research Center, 2018). Since the average age of French people over the age of 18 is about 50, it would be interesting in future studies try to target more representative populations, following the example of Patihis & Pendergrast (2019).

Future similar studies could include in their survey questions on the characteristics of abuse and the context of recovery for people who have recovered memories of abuse that they knew about before they remembered. While the omission of such questions in our study of is not a limitation in itself, it could help to deepen knowledge about the mechanisms underlying recovered memories. However, one limitation is that, since we asked these probing questions only to the subsample of recovered memories that participants were not aware of until they remembered the abuse, we could not separate memory recovery rates for the different types of
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abuse. On this particular aspect, we did not have the opportunity to compare this with past studies that have made this distinction.

Finally, we have no way of knowing whether the recovered memories described by the participants in our study are true or false. While caution should be taken with regard to recovered memories because memory is reconstructed and malleable, and false memories are possible, recovered memories may reflect events that have happened.

Concluding remarks

Our survey has four main conclusions: (1) as in several prevalence studies in the 1990s, a minority of self-reported victims of childhood abuse reported recovering memories of childhood abuse they were unaware of; (2) as in past research (Epstein & Bottoms, 2002), we have shed light on the large number of people who initially reported recovered memories but subsequently reported they had continuous memories and that they later reinterpreted these events as abuse; (3) a very large majority of recovered memories of child abuse occurred outside of therapy; and (4) consistent with past findings, exposure to media and discussions of childhood abuse were the events most associated with recovering memories of abuse. Our findings help clarify the recovery of memories of childhood abuse, and helps distinguish different types of memory recovery.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship or the publication of this article.

References

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### Table 1. Summary of methods, sample characteristics, types of abuse, sample sizes and percentage of forgetting in the studies reviewed in the introduction

<table>
<thead>
<tr>
<th>Method</th>
<th>Sample</th>
<th>Type(s) of abuse</th>
<th>N</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottoms, Najdowski, Epstein, &amp; Badanek, 2012</td>
<td>Survey</td>
<td>Nonclinical</td>
<td>Sexual</td>
<td>469</td>
</tr>
<tr>
<td>Bottoms, Najdowski, Epstein, &amp; Badanek, 2012</td>
<td>Survey</td>
<td>Physical</td>
<td></td>
<td>511</td>
</tr>
<tr>
<td>Bottoms, Najdowski, Epstein, &amp; Badanek, 2012</td>
<td>Survey</td>
<td>Other</td>
<td></td>
<td>714</td>
</tr>
<tr>
<td>Briere and Conte (1993)</td>
<td>Survey</td>
<td>Clinical</td>
<td>Sexual</td>
<td>450</td>
</tr>
<tr>
<td>Epstein &amp; Bottoms, 2002</td>
<td>Survey</td>
<td>Clinical</td>
<td>Sexual</td>
<td>104</td>
</tr>
<tr>
<td>Epstein &amp; Bottoms, 2002</td>
<td>Survey</td>
<td>Nonclinical</td>
<td>Physical</td>
<td>99</td>
</tr>
<tr>
<td>Epstein &amp; Bottoms, 2002</td>
<td>Survey</td>
<td>Other</td>
<td></td>
<td>194</td>
</tr>
<tr>
<td>Goodman et al. (2003)</td>
<td>Interview/free recall/survey</td>
<td>Nonclinical/documentated CSA</td>
<td>Sexual</td>
<td>168</td>
</tr>
<tr>
<td>Hovdestad and Kristiansen (1996)</td>
<td>Survey</td>
<td>Clinical</td>
<td>Sexual</td>
<td>113</td>
</tr>
<tr>
<td>Hunter and Andrews (2002)</td>
<td>Interview/survey</td>
<td>Clinical/Nonclinical</td>
<td>Sexual</td>
<td>74</td>
</tr>
<tr>
<td>Loftus, Polonsky, and Fullilove (1994)</td>
<td>Interview/survey</td>
<td>Clinical</td>
<td>Sexual</td>
<td>52</td>
</tr>
<tr>
<td>Melchert (1996)</td>
<td>Survey</td>
<td>Nonclinical</td>
<td>Physical</td>
<td>92</td>
</tr>
<tr>
<td>Melchert (1996)</td>
<td>Survey</td>
<td>Emotional</td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>Melchert (1996)</td>
<td>Survey</td>
<td>Sexual</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Melchert and Parker (1997)</td>
<td>Survey</td>
<td>Nonclinical</td>
<td>Physical</td>
<td>111</td>
</tr>
<tr>
<td>Melchert and Parker (1997)</td>
<td>Survey</td>
<td>Emotional</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Melchert and Parker (1997)</td>
<td>Survey</td>
<td>Sexual</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>Roe and Schwartz (1996)</td>
<td>Survey</td>
<td>Clinical</td>
<td>Sexual</td>
<td>52</td>
</tr>
<tr>
<td>Williams (1994)</td>
<td>Interview/free recall</td>
<td>Nonclinical/documentated CSA</td>
<td>Sexual</td>
<td>129</td>
</tr>
<tr>
<td>Williams (1995)</td>
<td>Interview/free recall</td>
<td>Nonclinical/documentated CSA</td>
<td>Sexual</td>
<td>75</td>
</tr>
</tbody>
</table>

**Note:** Survey = questions related to whether the participants experienced a period without memory of the abuse or not; Interview = interviews were conducted with participants including questions related to whether the participants experienced a period without memory of the abuse or not; free recall = participants with a history of child sexual abuse (CSA) were asked to freely recall the abuse or the initial report of the abuse. N refers to the sample size of participants who indicated a period without memory of child abuse and/or a documented history of child abuse.
### Table 2. Proportions of different types of childhood abuse memories according to the initial and follow-up questions.

<table>
<thead>
<tr>
<th>Initial Question</th>
<th>Yes</th>
<th>No</th>
<th>I don’t know/am not sure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I did not know I was abused before I remembered it, and had no memory of any abuse, and the memories emerged at a specific time in my life</td>
<td>15.5% (n = 69)</td>
<td>0.2% (n = 6)</td>
<td>1.7% (n = 7)</td>
<td>2.5% (n = 82)</td>
</tr>
<tr>
<td>I knew I was abused, but had no memory of the abuse before I remembered it, and the memories emerged at a specific time in my life</td>
<td>19.3% (n = 86)</td>
<td>1.1% (n = 28)</td>
<td>3.7% (n = 15)</td>
<td>3.9% (n = 129)</td>
</tr>
<tr>
<td>Follow-up questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I did not know I was abused, but I did have memory of what had happened to me, and at a specific time in my life I reappraised what happened to me as abuse</td>
<td>30.8% (n = 137)</td>
<td>8.2% (n = 204)</td>
<td>24.9% (n = 101)</td>
<td>13.2% (n = 442)</td>
</tr>
<tr>
<td>I knew I was abused, and I have always had memory of what happened to me</td>
<td>34.4% (n = 153)</td>
<td>1.4% (n = 36)</td>
<td>15.6% (n = 63)</td>
<td>7.5% (n = 252)</td>
</tr>
<tr>
<td>Even if I have recovered memories of abuse, I choose not to</td>
<td>N/A</td>
<td>0.3% (n = 8)</td>
<td>2.0% (n = 8)</td>
<td>0.5% (n = 16)</td>
</tr>
<tr>
<td>I have never recovered memories of abuse that I previously had no memory of</td>
<td>N/A</td>
<td>88.7% (n = 2214)</td>
<td>52.1% (n = 211)</td>
<td>72.5% (n = 2425)</td>
</tr>
</tbody>
</table>

**Note.** Percentages shown are column percentages, with rows descending by percentage. N/A = not applicable in this subgroup, such that this follow-up question was not asked.
Table 3. Percentages of different types of exposures to the topic of child abuse, and other possible triggers, that occurred just before memory recovery (within those reporting that they did not previously know about nor remember their abuse).

<table>
<thead>
<tr>
<th>Activity</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media exposure</td>
<td>33.3</td>
<td>22</td>
</tr>
<tr>
<td>Discuss with people the topic of childhood abuse</td>
<td>25.8</td>
<td>17</td>
</tr>
<tr>
<td>Go back to the place(s) where the abuse took place</td>
<td>9.1</td>
<td>6</td>
</tr>
<tr>
<td>Child care (e.g., baby-sitting)</td>
<td>5.4</td>
<td>8</td>
</tr>
<tr>
<td>None of these activities/I don’t know(^{a})</td>
<td>31.8</td>
<td>21</td>
</tr>
<tr>
<td>Other</td>
<td>7.6</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Response modalities with \(^{a}\) are those extracted from “Other” responses and coded on the basis of the details provided by the participants.

The question’s exact wording was “A few months, weeks, days or hours before you remember the abuse, did you do one or more of these activities? (Please tick the corresponding answer(s)).”

Percentages totals do not equal 100% because participants could choose more than one event.

\(N = 73\) in this analysis.
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Table 4. Percentages of different types of exposures to the topic of child abuse, and other possible triggers, that occurred during memory recovery (again, within those reporting that they did not previously know about nor remember their recovered abuse)

<table>
<thead>
<tr>
<th>Exposure</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media exposure</td>
<td>16.7</td>
<td>11</td>
</tr>
<tr>
<td>Discuss with people the topic of childhood abuse</td>
<td>12.1</td>
<td>8</td>
</tr>
<tr>
<td>Discuss with people the topic of childhood abuse on the telephone^a</td>
<td>3.0</td>
<td>2</td>
</tr>
<tr>
<td>Go back to the place(s) where the abuse took place</td>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td>During an intimate relationship experience^a</td>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td>Child care (e.g., baby-sitting)</td>
<td>6.1</td>
<td>4</td>
</tr>
<tr>
<td>Sleep and dream^a</td>
<td>6.1</td>
<td>4</td>
</tr>
<tr>
<td>Nothing^a</td>
<td>13.6</td>
<td>9</td>
</tr>
<tr>
<td>I don’t know/remember^a</td>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>24.2</td>
<td>16</td>
</tr>
</tbody>
</table>

Note: Response modalities with ^a are those extracted from “Other” responses and coded on the basis of the details provided by the participants.

The question’s exact wording was “What were you doing during the time period when you recovered memories of abuse? (Please tick the corresponding answer(s))

Percentages totals do not equal 100% because participants could choose zero or more than one experience. \( N = 73 \) in this analysis.