A Scientometric and Descriptive Review on the Debate about Repressed Memories and Traumatic Forgetting

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Abstract

Recent work suggests that the debate surrounding repressed memory and traumatic forgetting continues today. To further investigate this debate, we performed preregistered scientometric analyses on publications on the debate about repressed memory to provide information about its bibliometric evolution. Furthermore, we reviewed these publications to highlight the different positions taken by scholars on this debate. We reviewed 434 publications extracted from Scopus and Web of Science from 1969 to 2022. Our scientometric analyses permitted us to visualize the development of the publications on repressed memories and identify the terminology used to label this phenomenon. We identified three waves of publications (i.e., 1994–2000; 2003–2009; 2012–2021) showing that there is a recent peak of scholarly attention into this topic. 40% of scholars supported the phenomenon of repressed memory while 29% did not. Moreover, although in the last wave of publications, 35% of articles included critical arguments against the existence of repressed memory, a sizable number of publications (21%) supported ideas in favour of repressed memory. Finally, we observed that the term dissociative amnesia is another expression used to refer to the phenomenon. Our results provide additional evidence that the debate on repressed memories (and dissociative amnesia) is far from being over.

Keywords: Memory Wars, Repressed Memory, Traumatic Forgetting, Scientometric Analyses, Review

1.1 A Scientometric and Descriptive Review on the Debate about Repressed Memories and Traumatic Forgetting

In the 1990s, the debate about whether traumatic experiences can be unconsciously repressed (i.e., blocked and inaccessible for a long period of time) and recovered in pristine form many years later intensified (Crews, 1995). An important springboard for this debate was an increase in cases during the 1980s and 1990s in which patients with no prior recollections of abuse reported recovering memories of sexual abuse during therapy (e.g., Kaplan & Manicavasagar, 2001). Some practitioners and scholars argued that traumatic experiences can be temporarily forgotten and unconsciously repressed because of their overwhelming painful nature. However, other scholars, including some memory researchers, contended that attempting to recall repressed memories could facilitate the formation of false memories of abuse. This debate on traumatic forgetting and the existence of repressed memory has been coined the *memory wars* (Crews, 1995).

1.1.1 The Debate about Repressed Memories and Traumatic Forgetting

So far, several contrasting theoretical explanations have been proposed based on studies aiming to understand how memory works when people deal with traumatic experiences. However, the origins of the memory wars can partially be traced back to different subfields in psychology that argue in favour or against the notion of repressed memory (e.g., Dodier, 2019). According to the psychodynamic approach, the concept of repressed memories is rooted in Sigmund Freud's (1893; Breuer & Freud, 1895) early work on hysteria and further extended by his daughter Anna Freud (1946). Their assumption was that the content of traumatic experiences can become inaccessible (i.e., unconscious), despite being previously encoded and consolidated (i.e., thus available), due to an emotional defense mechanism (i.e., repression). Sigmund Freud later argued that sometimes people were either aware or unaware of expelling the traumatic content from consciousness, which becomes unconscious and unavailable to them either way (see Breuer & Freud, 1895). Eventually, following this latter reasoning, Anna Freud theorized both the concepts of unconsciously (i.e., repression) and consciously (i.e., suppression) blocking traumatic memories out of awareness

(Freud, 1936/1946). Yet the idea of repression, seen as an unconscious blockage of the traumatic experience, was developed in a variety of ways by other trauma-oriented scholars (e.g., Blume, 1990; Briere & Conte, 1993; Herman & Schatzow, 1987). Furthermore, the idea is that, although the person does not have any conscious recollection of the trauma anymore, the memory still exerts a physical and mental toll (e.g., the idea that the body "keeps the score", Van der Kolk & Fisler, 1995). The royal road to resolve these mental and physical problems was posited to exhume unconscious memories in therapy (for a critique of this idea, see Lynn et al., 2020). Several researchers have argued the use of specific techniques, such as dream interpretation (Cartwright, & Lamberg, 1992; Coolidge & Hartmann, 2018; Zadra, & Stickgold, 2021), hypnosis (Spiegel, 1989), guided imagery (Fredrickson, 1992; Utay, & Miller, 2006), to facilitate the recovery of repressed memories during psychotherapy. For example, in a survey of German psychotherapists, Schemmel and Volbert (2021) found that one psychotherapist in five declared that their patient uncovered inaccessible traumatic memories due to the psychotherapeutic intervention. By using these therapeutic interventions, it is posited that people are able to consciously process the formerly repressed memory which would aid the individual's psychological functioning and in the reduction of mental disorders symptoms.

However, in the field of cognitive psychology, although many experimental studies have shown that people can forget some parts (e.g., peripheral information) of emotional events (e.g., Goldfarb et al., 2019; Goodman et al., 2003; Reisberg & Heuer, 2004) and/or that some individual differences can influence the likelihood to remember emotional events (e.g., Christianson et al., 1996), an abundance of research has revealed that emotionally negative and traumatic experiences are generally well-remembered and difficult to be completely forgotten (e.g., Goodman-Brown et al., 2003; Goldfarb et al., 2019; McNally, 2003, 2005; Merckelbach et al., 2003; Wagenaar & Groeneweg, 1990). These findings made many memory researchers skeptical of the idea that traumatic memories can be unconsciously repressed, hence forgotten for a period of time (e.g., Clancy et al., 1999; Goodman et al., 2003; Holmes, 1990; Kihlstrom, 2004; Lilienfeld & Loftus,

1999; Lindsay & Read, 1994; Loftus, 1993, 1994; Loftus et al., 1998; McNally, 2005; Merckelbach et al., 2003; Wagenaar & Groeneweg, 1990). These scholars have argued that therapy-induced suggestive interventions happening during treatment might lead to false recovered memories of abuse (e.g., Loftus & Davis, 2006).

Due to concerns about recovering memories in therapy, memory researchers have examined whether false memories can be elicited using a variety of methods. For example, experiments on the misinformation effect have shown that the presentation of misleading information can make people report false details in later memory reports (e.g., Bruck et al., 1995; Loftus et al., 1978; Loftus, 2005; Morgan et al., 2013). Furthermore, research has demonstrated that people can even be swayed into forming false autobiographical memories of entire events by suggesting that they experienced a fictitious event in their childhood (e.g., Loftus & Pickrell, 1995; Shaw & Porter, 2015; Wade et al., 2002). Also, researchers found that people who score higher on measures of fantasy proneness are more likely to report false memories due to suggestion (e.g., Heaps & Nash, 1999; Patihis & Loftus, 2016). In addition, false memories have been produced using other techniques, such as guided imagery (Garry et al., 1996; Hyman & Pentland, 1996), hypnosis (Laurence & Perry, 1983), dream interpretation (Mazzoni et al., 1999).

Trauma-oriented scholars supporting the occurrence of repressed memories have criticized these methods because of their weak ecological validity – one argument being that false memories created in the lab are very different from memories of severe abuse. Skeptics point out to two problems with this argument, one being that studies are ethically bound not to implant traumatic experiences, and the other point being that there appears to be evidence of naturally occurring traumatic false memories in therapy (e.g., Patihis & Younes-Burton, 2015) and in legal cases (e.g., the Franklin case in which DNA evidence refuted the accuser's memories[1]).

[1] https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3221

Skeptical scholars have given alternative explanations for reports of repressed memory. First, research has shown that traumatic memories do not differ much in quality from other types of memory and, therefore, are not subjected to any particular mechanism (e.g., Geraerts et al., 2007). Alternatively, therefore, claims of memory loss could be the result of normal memory phenomena such as ordinary forgetting or a failure to encode certain information (e.g., Loftus et al., 1994; McNally, 2005). In addition, the inability to recall events experienced before age 3 (infantile amnesia), and the very few memories up until age 5 or 6 (childhood amnesia) are empirically supported alternative explanations for the idea of repression of early memories (Fivush et al., 1995; Howe, 2013; 2022).

Furthermore, some scholars have argued that it is possible to malinger (fake) memory impairments (e.g., amnesia) – especially during circumstances in which financial and/or legal stakes are high (e.g., Jelicic, 2018; Mangiulli et al., 2021b). Yet due to a widespread belief that malingering is more likely to take place in the criminal context (Merckelbach et al., 2009), its prevalence in therapy might be underestimated (McCarter et al., 2009).

Finally, based on Anna Freud's position, some scholars have supported the idea that forgetting traumatic experiences can occur for an alternative and conscious form of repression, also referred to as suppression (Brewin, 2020). These scholars supported this by referring to the results achieved in studies using the think/no-think paradigm (Anderson & Green, 2001). These studies have indeed demonstrated that when participants are instructed not to think of specific words (e.g., roach) of a set of word pairs (e.g., ordeal-roach), participants are less able to recall such no-think words as compared with the think words in a following recall test. However, this evidence has received criticism because the memory suppression effect has not been found for autobiographical experiences (e.g., Bulevich et al., 2006: see also Otgaar et al., 2021). This criticism was addressed in studies using a novel autobiographical think/no-think paradigm that showed that no-think autobiographical memories were less remembered than the think ones (e.g., Lu et al., 2023; Noreen & MacLoad, 2013; Stephens et al., 2013). Although studies have replicated the TNT effect using an

autobiographical version of the TNT task, no evidence exists that entire traumatic memories can be suppressed for a long time.

In summary, some memory scholars doubt the notion that people can forget traumatic experiences because of repression due to the above-mentioned evidence. These scholars recommend caution due to the adverse consequence that believing in repression can have in legal contexts. Specifically, they can lead to false accusations that can result in wrongful convictions and family estrangement (Leo & Davis, 2010; Loftus, 2003; Otgaar et al., 2022a).

1.1.2 Does the Debate Continue?

Some scholars have argued that the memory wars have declined (e.g., Barden, 2016; McHugh, 2003). However, recent evidence suggests that the memory wars continue today—that scientists and practitioners often do not agree on the concept of repressed memories or dissociative amnesia. For example, Patihis et al. (2014) found that there was belief in repressed memories in a significant percentage of both practitioners and the public. Several additional lines of evidence point towards the conclusion that the controversy surrounding repressed memory is ongoing (e.g., Dodier, 2019; Otgaar et al., 2019; Otgaar et al., 2021). Otgaar and colleagues (2019) reviewed past survey research conducted on different samples (i.e., psychotherapists, clinical psychologists, legal practitioners, laypeople) asking about their beliefs on repressed memory. However, some scholars have criticized this research because of the use of the single questionnaire items and the inability to isolate people's beliefs on different memory mechanisms (e.g., Brewin et al., 2020). They found that 58% (n = 4,745) of the surveyed people endorsed the concept of repressed memory. Interestingly, among clinical psychologists, 61% (n = 719) believed in the existence of repressed memory, and this percentage was even higher from 2010 onwards (76%, n = 1,586), showing that the belief in repressed memory has certainly not vanished.

There is other evidence that the practice of attempting to recovering repressed or dissociated memories may continue today. Patihis and Pendergrast (2019) found in a U.S. sample that about 9% of people who had therapy recently had recovered memories of abuse of which they did not know

about before therapy (Figure 2, p. 9, rightmost bar). In addition, the authors found that the recovery of such memories correlated with therapists discussing the possibility of repressed memories with their clients (but see also Houben et al., 2019). More precisely, in Patihis and Pendergrast, of those people claiming to have recovered abuse during therapy, 29% reported recovering it inside a therapeutic session and 41% inside and outside a session. Interestingly, 18% of these people indicated to have recovered it because of guided imagery (9%), hypnosis (7%), or dream interpretation (2%) techniques. In addition, when participants were asked what type of abuse they recovered, 74% mentioned an emotional abuse, 51% a physical abuse, and 42% a sexual abuse. There has been some follow up research showing that recovering memories in therapy are being reported today by some young adults in the U.S. (undergraduates: Patihis et al., 2022), and in adult samples from France (Dodier et al, 2019; Dodier & Patihis, 2021). In Dodier et al. (2019) study, participants reported more recovered memories when they introduced the topic to the therapist rather than when the latter was the first presenting it. Recently, a study—carried out on a sample of Italian therapists and aiming to understand whether they discussed with patients the existence of traumatic memories of which they were unaware—demonstrated that patients' recovery of traumatic events positively correlates with therapists' discussion of repressed memories (Zappalà et al., *submitted*).

Otgaar and colleagues (2019) noted that the terminology referring to the notion that traumatic memories can be unconsciously blocked has changed (see also Holmes, 1994), even though the core idea remained. That is, they showed that the criteria for dissociative amnesia as included in the DSM-5 (APA, 2013) share striking similarities with the concept of repressed memory. For example, dissociative amnesia is defined in the DSM-5 as "the inability to remember autobiographical information, usually of traumatic or stressful nature" (p. 298). Moreover, part of the DSM-5 description of dissociative amnesia is that traumatic information is assumed to be successfully stored in memory and could eventually be retrieved into consciousness. In the entirety of the definition in the DSM-5, dissociative amnesia is very similar to the concept of repressed

memory. Due to the evident similarities in the definition of repressed memories and dissociative amnesia, scholars have argued that ongoing skepticism is justified for both concepts (Mangiulli et al., 2021a; Mangiulli et al., 2022; Otgaar et al., 2019). However, Ross (2022) raised some criticism for this idea arguing that some (skeptical) memory researchers failed to properly understand what repression and dissociation are, and to adequately differentiate the two concepts. That is, accordingly to Ross, repression was suggested to be a defensive mechanism while dissociation a phenomenon (see for a rebuttal, Otgaar et al., 2022b).

Of special interest for the current review are bibliometric analyses on published research on repressed and recovered memories. Dodier (2019) conducted several bibliometric analyses to map when work on this topic was published, and other aspects of the articles. Dodier compared work published in the 1990s and from 2001 to 2018 and detected that a similar total amount of work was published in these two time periods. Furthermore, with regards to the publications of the 21st century, he found two publication peaks with one from 2003 to 2007 and a second one in 2018. Furthermore, he also displayed that, within this pool of publications, 31% of publications (n = 5) showed signs of sympathy towards the concept of repressed memories, while 56 % (n = 9) were skeptical, and 13% (n = 2) did not take any side. Although these results additionally illustrate that the discussion surrounding repressed memory, and in turn traumatic forgetting, continues today, several aspects of the debate —addressed in the current study—were not investigated.

2.1 The Current Scientometric and Descriptive Review

A valuable strategy to examine whether the debate on repressed memory and traumatic forgetting persists is by conducting an objective and comprehensive overview of the evolution of the debate in past publications. In this review we aim to describe the past literature in a neutral way that may be useful to both sides of the debate. Here, we investigate with a systematic method (i.e., scientometric analyses and descriptive review) the extent to which the debate is currently active in the literature. This is needed because of the potential harm to individuals or society of continued repressed memory recovery, and on the other hand the potential harm of failing to identify real

cases of trauma. In this paper, cognitive and clinical psychologists join forces to aim to obtain a neutral description of the state of the debate. A notable example of this is the paper by Lindsay and Briere (1997) in which they described the controversy of repressed memory from both clinical and cognitive perspectives. They clearly noted that "[t]here are extremists on both sides of this controversy, but the tendency to use caricaturized extremists as representatives of differing perspectives merely serves to increase polarization" (p. 632). Patihis and colleagues (2014) noted that "a better understanding of the nature and scope of researchers' and clinicians' differing views regarding memory is an essential first step toward narrowing the persistent scientist-practitioner gap" (p. 529). A review of the published manuscripts on the controversy on repressed memories is necessary to document how the debate has evolved and is evolving.

One way to objectively shed light on the memory wars debate is by reviewing the published literature on repressed memories and traumatic forgetting by using a scientometric approach. This methodology was defined for the first time by Mulchenko (1969) and its advantages have been recently shown by several manuscripts of different research fields. Scientometric analyses map a global overview of a specific line of research, the main actors involved in research (e.g., authors, institutions, countries), their contributions (e.g., number of citations, publications, collaborative actions), and to identify keywords and themes in the manuscripts (Börner et al., 2013; Hook & Börner, 2005; Mao et al., 2015). By doing so, it is possible to detect the evolution of a certain research field (for an example see Battista & Otgaar, 2022).

Some scientometric analyses have been executed in the field of repressed memory (e.g., Brewin, 2020; Dodier, 2019; Otgaar et al., 2021; Pope et al., 2022). These reports were valuable but did not provide a complete scientometric analysis. In addition, these earlier analyses were exploratory and did not formulate specific hypotheses on their possible outcomes. In the current study, these previous papers helped us preregistered several key hypotheses regarding the evolution of this research.

We first performed scientometric analyses to: (i) investigate the numbers of papers published during the years and (ii) identify contributions by country, institution, journal, and author in terms of number of publications, citations, co-citations, and collaborative actions. In addition, we (iii) documented the types of manuscripts (e.g., case studies, review, empirical studies) and (iv) identified the terminology used and whether such terminology was consistent over the years by performing a cluster analysis on authors' keywords. We then carried out a review of all publications to (v) document whether authors appeared to be in favour or against the concept of repressed memories, what reasons they provided to support their position, and whether they indicated possible implications of their reasoning for practitioners (e.g., clinicians, jurors, psychotherapists).

Based on prior studies (e.g., Dodier, 2019), we hypothesized that we would find (1) two peaks of publications, one in the 1990s and a second one from 2017 to 2021 and (2) that the majority of the publications would be in the fields of clinical and cognitive psychology. Additionally, we predicted (3) that authors would co-cite more publications in their own-related field (e.g., clinical psychology) than authors in a different field (e.g., cognitive psychology), and that publications would have more co-citations within their own field than the other. We also expected (4) to show a change in terminology used to refer to the concept of blocked trauma. That is, it was anticipated that recent publications would use "dissociative amnesia" as a synonym to "repressed memories" (Holmes et al., 1994; Mangiulli et al., 2022; Otgaar et al., 2019). Finally, we hypothesized (5) that publications in the field of clinical psychology would show more belief in the concept of repressed memories whereas publications in the field of cognitive psychology would be more skeptical of the concept (Otgaar et al., 2019). For the other analyses (e.g., concerning country, institutions, journals), we did not have any specific predictions, but they were conducted in order to provide an extensive picture of the debate on repressed memories.

3.1 Method

3.1.1 Data Collection

The study was preregistered on the Open Science Framework: https://osf.io/a7k63. We searched publications on Scopus and Web of Science (WoS), the two largest databases of peer-reviewed publications (Guz & Rushchitsky, 2009). Both searches were conducted on February 07, 2022. In line with Dodier (2019), for the search carried out on WoS we used a three-step process. We first conducted a comprehensive search to collect publications with at least one of the keywords, which were agreed by the authorship team and were based on the above-mentioned argumentations and evidence heating the debate (e.g., "recover* memor*", "memor* for traum* event", but see Supplementary Materials: Literature Search). We were able to retrieve 14,209 publications. In a second step, we filtered these publications by selecting "Topic" and using a script (e.g., "recover* memor* debate", "repress* memor* controversy", but see Supplementary Materials: Literature Search). Based on this filtering, 1,104 publications were found and refined based on the third step of our procedure. The third and last step consisted in selecting only publications in English and excluding the publications that were in unrelated research fields (e.g., Mathematics, Engineer, Physics, Geography). This led to 846 publications of primary sources. At this stage, we also retrieved secondary sources[2] and obtained 47 publications. Because Scopus does not allow to define the search selecting only publications with specific topics, Scopus search was performed by selecting "Title, Abstract, Keywords" and using the script adopted to refine Web of Science search during the second step of the search (see Supplemental Materials: Literature Search). This search provided 1,254 publications. We selected publications in English and excluded the ones in unrelated research fields resulting in 740 publications of primary sources, while no secondary sources were detected. The year parameter was left open to include all publication years. For both searches in Scopus and Web of Science, we retrieved the following information: Title, Abstract, Authors, Keywords, Keywords Plus, Authors' Information (i.e., country, address, e-mail, ORCID), Publication Information (i.e., journal, date of publication, volume, issue, doi, total citations, cited

[2] Secondary sources here refer to publications not indexed in Web of Sciences or Scopus because they are retrieved from the references or citations of primary sources or publications with incomplete or incorrect data and content.

sources)[3], and Journal Information (i.e., name, journal abbreviation, ISSN, eISSN). The two datasets were merged in one file and duplicate publications were removed. Hence, we had a dataset of 837 publications. Finally, we manually reviewed our dataset to remove all the articles that did not relate to the debate on the existence of repressed memories. The dataset was manually reviewed by two coders and possible inconsistencies were discussed to reach a final agreement. Five hundred and ninety three publications were identified as being related to the debate on repressed memories, but 177 of them were letters, editorial materials, or chapters for which it was not possible to retrieve all the information. Hence, we had 416 publications. However, we manually added 18 publications because of a reviewer's suggestion during the peer-review process, therefore the final database was composed of 434 publications (available on OSF: https://osf.io/z2xfg/). Note that the retrieved publications concern the above-described memory wars debate. As such the dataset includes publications providing a comprehensive focus on repressed memories as well as articles encompassing this notion in a broader manner and referring more in general to traumatic forgetting.

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3.2.1 The Scientometric Review

We conducted our analyses using a software called VOSviewer (Van Eck & Waltman, 2014; Van Eck et al., 2010). By using this software, we were able to perform scientometric analyses on the bibliometric information retrieved in terms of (i) performance analyses on authors, countries, affiliations, publications data (i.e., journal, year, citations, research area)[4], and authors' and publications' co-citations, (ii) network analyses on authors, authors' and publications' co-citations (iii) cluster analyses on the keywords used in the publications. Also, we reviewed the publications to examine the authors' position in the debate (i.e., against vs in accordance with the idea of repressed memories).

[3] In our pre-registration, we also included Editor information. However, we were not able to retrieve these data.

[4] Some of these analyses (e.g., institutions, journal analyses) are presented in Supplementary Materials (see Tables S2) or on OSF Supplementary Materials (see Tables A2, A3).

3.2.2 Results

Number of Publications by Country

Table 1 shows the number of publications by country. Hence, Table S1 shows the single country publications (SCP) and the publications involving multiple countries (MCP). We detected 30 countries involved in the publications on repressed memories. The USA, England, The Netherlands, Canada, and Germany were the five countries with the highest number of publications. Almost all publications (98.7%, *n* = 247) from the leading country, the USA, were single country publications. Similarly, the majority of publications from Canada and England were single country publications (Canada: 94.7%, *n* = 36; England: 77.1%, *n* = 37), while for The Netherlands and Germany the amount of SCP was around half of the publications (The Netherlands: 51.2%, *n* = 20; Germany: 58.3%, *n* = 7).

In Figure 2, below we plot the number of publications by country and year. As shown in Figure 2, we found publications ranging from 1969 to 2022. Three peaks of publications were detected: (i) the largest peak being from 1994 to 2000 (45.2%, *n* = 196), (ii) from 2003 to 2009 (25.8%, *n* = 112), and (iii) from 2012 to 2021 (22.1%, *n* = 96)[5]. Authors from the USA, published heavily during the first two peaks of publications, as did those from Canada and England. During the last peak, the USA produced many of the publications, though other countries such as The Netherlands, England, France, and Belgium, were also produced many publications on the topic.

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Research Areas and Categories Analysis

The research areas and categories of all publications were investigated. As displayed in Table S3, we detected 30 research areas and 41 categories involved into publication on repressed

[5] Because the last peak consisted of more years (i.e., 11) as compared with the first two (i.e., 8), we estimated the percentage of publications in such a peak by equalizing the number of years to the ones of the first two peaks. Therefore, we divided the number of publications in the third peak (i.e., 96) by 11 and multiplied the result by 8 and found a percentage of 16.12%.

memories. Interestingly, for 55.3% (*n* = 240) of publications only one research area was identified, and 48.8% (*n* = 212) one research category was identified. The research area with the highest number of publications was Psychology, with 7 research categories (i.e., Clinical, Multidisciplinary, Experimental, Social, Applied, Educational & Developmental, Neuropsychology & Physiological Psychology)[6]. The second research area, Psychiatry, with 119 publications had only one category (i.e., Psychiatry), while the 45 publications in the third area, Government & Law, had two different categories (i.e., Law; Political Science). These three research areas covered 75.0% (*n* = 482) of publications (i.e., Psychology: 49.5%, *n* = 318; Psychiatry: 18.5%, *n* = 119; Government & Law: 7.0%, *n* = 45)[7].

Analysis by Authors

The analysis by authors was carried out by considering the total number of publications of each author, in turn, split into single, multi, and first-authored publications. In total, we detected that 226 authors published research on repressed memories (see: Additional Analyses on https://osf.io/z2xfg/). Table S4 shows the most 20 productive authors, who published 48.1% (*n* = 209) of the total publications. The majority of these publications were multi-authored publications (*n* = 188). In particular, the first authors (i.e., Merckelbach, McNally, and Loftus) published more than 20 publications, four authors (i.e., Geraerts, Patihis, Clancy, and Otgaar) published more than 10 publications, while the rest of the authors in the top 20 authors had 5 to 9 publications.

A co-authorship analysis was also run to investigate the co-occurrence among authors, therefore we had a co-authorship network in which each node corresponds to an author and the lines to the collaborative actions among authors. The larger the node, the higher are the publications

[6] Research categories are based on WoS categorization. Multidisciplinary Journal are journals that do not publish articles of only one specific discipline instead publish articles of various disciplines.

[7] The percentages and the number of publications reported in parentheses were calculated as follows. The number of publications of all research areas were summed (i.e., 642). Then, the number of publications per each area was divided by the total number of publications of all areas (i.e., 642) and multiplied by 100. The number of publications of all areas is higher than the number of publications of our database (i.e., 434) because several publications belonged to multiple research areas.

published by the author as well as the thicker is the line, the more are the collaborative actions. Figure S1 shows that a high number of collaborations occurred among authors of this line of research. Specifically, the network detected 335 collaborative actions with 17 different communities of authors and Total Link Strength (TLS)[8] of 158.5. Among the detected communities, the largest five communities -with regards to both number of documents and collaborative actions- are the ones of Merckelbach (i.e., documents: 28, collaborative actions: 40, TLS: 28), McNally (i.e., documents: 26, collaborative actions: 23, TLS: 18), Loftus (i.e., documents: 21, collaborative actions: 25, TLS: 15), Patihis (i.e., documents: 13, collaborative actions: 22, TLS: 14), and Otgaar (i.e., documents: 11, collaborative actions: 21, TLS: 11).

Author Citation Analysis

The number of citations by authors was also analysed. Table S5 presents the 20 most cited authors by indicating the number of citations and the Total Link Strength (TLS) per each author. Loftus was the most cited author with 1816 citations, followed by Van der Kolk and McNally with 1360 and 1279 citations, respectively. Other 5 authors (i.e., Briere, Anderson, Lindsay, Read, Clancy, Ceci, Merckelbach) had more than 500 citations (i.e., from 1147 to 525). All the authors 20 top cited authors reported more than 250 citations (i.e., from 475 to 287). Noteworthy, all the authors reported a low TLS (i.e., from 4 to 0).

Document Citation Analysis

Table S6 reports the number of citations of the 20 most cited publications. In particular, with 787 citations the first most cited publication was by Loftus (1993), followed by Anderson & Green (2001), Van der Kolk & Fisler (1995) and Van der Kolk (1994) with 677, 648, and 622 respectively. Four other publications in the list of the 20 top publications obtained more than 300

[8] The Total Link Strength indicates the strength of the co-authorship links of a scholar with other scholars (VoSviewer Manual).

citations (from 437 to 315), whereas the rest of publications reported more than 150 citations (from 289 to 150).

Author Co-citation Analysis[9]

An author co-citation analysis was performed to investigate the network among authors whose publications are cited in the articles. This type of analysis checks the incidence with which an author publication is co-cited with another author in the cited references list (Bayer et al., 2010). This analysis provides a network in which the nodes size represents the number of authors' co-citations, while the links refer to the indirect cooperative relationships on the basis of the co-citation frequency. Figure 3 presents the author co-citation network for the analyzed research on repressed memories. The network was composed of 508 nodes, 41666 links and a Total Link Strength (TLS) of 191216. The most co-cited authors were Loftus (422 co-citations, 508 links, and TLS 381.5), McNally (205 co-citations, 400 links, and TLS 181.3), Williams (158 co-citations, 458 links, and TLS 148.5), Van der Kolk (144 co-citations, 458 links, and TLS 129.6), Herman (122 co-citations, 431 links, and TLS 112.4), Briere (140 co-citations, 443 links, and TLS 109.2), Markowitsch (136 co-citations, 192 links, and TLS 108), Anderson (95 co-citations, 387 links, and TLS 86.25), and Terr (87 co-citations, 343 links, and TLS 82.37).

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Document Co-citation Analysis[9]

A document co-citation analysis was carried out to detect the most co-cited publications. As a matter of fact, this analysis recognizes how many times two publications have been simultaneously cited by other publications proving a document co-citation network (Small, 1973; Zhong et al., 2019). The analysis demonstrated a document co-citation network including 161 nodes, 3700 links and a Total Link Strength (TLS) of 6482. Table 1 shows the top 20 publications

[9] Co-citations analyses differ from citation analyses because detect pairs of authors or documents that are cited together in the source documents. By contrast, citation analyses provide a general estimation of the citations received by authors or documents (VoSviewer Manual).

most co-cited. In the top 10, the first co-cited publication was the one by Loftus (1993) with 72 co-citations, followed by three publications (i.e., by Herman & Schatzow (1987), Briere & Conte (1993), Williams (1994)) with more than 30 co-citations (i.e., 36, 34, 32). Three publications [i.e., by Lindsay & Read (1994), Bernstein & Putnam (1986); Johnson (1993)] obtained 29 and 21 co-citations, whereas the remaining 14 publications obtained from 20 to 14 co-citations.

---please insert Table 1 about here ---

Citation Analyses by Research Category

Additional citation analyses on authors and publications were carried out to verify whether the citation performance was related to the research category of publications. We performed these analyses on three sub-databases for the three most copious categories (i.e., Clinical Psychology, Multidisciplinary Psychology, and Experimental Psychology). Table 2 shows the 10 most cited authors by the three categories. As displayed in the table, several authors appeared in the top 10 most cited authors lists of all the three categories (e.g., Loftus, McNally, Merckelbach). However, the number of citations reached by each author was strictly dependent on the research category. Finally, Table 3 provides the 10 most cited publications by the three categories. Similarly to author citation analysis by category, the publications' number of citations was related to the research category.

---please insert Table 2 about here ---

---please insert Table 3 about here ---

Co-citation Analyses by Research Category

In order to understand whether authors in a specific research category were more inclined to co-cite authors and publications in the same research category, author co-citation and document co-citation analyses were carried out for the three sub-databases of the three research categories (i.e., Clinical Psychology, Multidisciplinary Psychology, and Experimental Psychology). Figures 4 show the author co-citation network for the category Clinical Psychology (a), Multidisciplinary Psychology (b), and Experimental Psychology (c). The networks had the following parameters:

Clinical Psychology consisted of 229 nodes, 12303 links and a Total Link Strength (TLS) of 5715.8 Multidisciplinary Psychology was composed by 105 nodes, 3308 links and a Total Link Strength (TLS) of 1785.6, and Experimental Psychology consisted of 102 nodes, 3032 links and a Total Link Strength (TLS) of 1439.6. Interestingly, the most co-cited author for all the three categories was Loftus (Clinical Psychology: 156 co-citations, 217 links, and TLS 142.6; Multidisciplinary Psychology*:* 102 co-citations, 101 links, and TLS 100.3; Experimental Psychology*:* 79 co-citations, 93 links, and TLS 87.2). By contrast, despite several co-cited authors were in the top authors list of all the three categories, the number of co-citations was different based on the category.

---please insert Figures 4 a, b, and c about here ---

Table S7 displays the 10 publications most co-cited for the three research categories of Clinical Psychology, Multidisciplinary Psychology, and Experimental Psychology. The first most co-cited publications for all three categories were by Loftus (1993). For the subsample of Clinical Psychology, the most co-cited publications were in Clinical Psychology 50% (*n* = 5), 10% (*n* = 1) in Experimental Psychology and Multidisciplinary Psychology, and for 20 % (*n* = 2) were not able to be categorized. For the subsample of Multidisciplinary Psychology, the rest of the top co-cited publications were 50% (*n* = 5) in Clinical Psychology, 30 % (*n* = 3) in Multidisciplinary Psychology*,* and 10% (*n* = 1) in Experimental Psychology. Finally, for the subsample of Experimental Psychology and the rest of the top co-cited publications, 50% (*n* = 5) were in Clinical Psychology and 40 % (*n* = 4) in Multidisciplinary Psychology.

Keywords Cluster Analysis

In order to investigate the terminology used in publications on repressed memories, a cluster analysis on the Keywords Co-Occurrence Network was performed. This type of analysis allows to identify associations among terms and organize large sample of semantic information in clusters composed of semantic information relating to a same theme (Olawumi et al., 2018). Therefore, keyword co-occurrence network – by scrutinizing the presence, frequency, and proximity of

keywords similar to each other – gives a network made of several clusters, identified by different colours, associated connected with a different degree of strength (i.e., Total Link Strength (TLS) - the higher is TLS the higher the strength) (Radhakrishnan et al., 2017). Configuring the settings "Authors' Keywords", "Fractional counting" (i.e., the links' weight is fractionalized), and 7 as the minimum number of co-occurrences (based on the default value suggested for our database by the software), we found a network composed of 5 clusters, 109 links, and a TLS of 171.50 (see Figure 6 and Table 4).

---please insert Figure 5 about here ---

To verify whether a terminology changed over time, we further investigated the keywords co-occurrence network taking into consideration the year in which articles were published (see Supplementary Materials: Figure S2). We found the following time ranges of clusters (i.e., years in which the keywords in the cluster were most used: Cluster 1: 2005–2009; Cluster 2: 2000–2013, Cluster 3: 2007–2012, Cluster 4: 2003–2007 and Cluster 5: 2007–2009 (see also Table 4).[10]

---please insert Table 4 about here ---

3.2.3 Discussion

The main aim of this manuscript was to perform scientometric analyses on publications on the debate on repressed memories and traumatic forgetting in order to document several aspects about the debate within peer reviewed articles. Several findings are especially noteworthy. First, the analysis on the performance of countries showed that several countries are involved in publications on repressed memory, underlining the prominent role of the USA, followed by England and the Netherlands. Second, and partially in line with our expectations, we detected three main waves of publications on the topic of repressed memory (from 1994 to 2000, from 2003 to 2009, and from 2012 to 2021). We found that – together with England and Canada – the USA not only maintained

[10] The time range of the five clusters is limited from 2005 to 2013 because the network presents the most frequently used keywords. A network of all keywords (n = 450) used in the publications can be found on https://osf.io/z2xfg/ (i.e., Additional Analyses).

the leading position during the first two waves (from 1994 to 2000, from 2003 to 2009) but was the main country that contributed to the total published work in these periods. Notably, several European countries (e.g., The Netherlands, England, France) contributed to the peak during the last period (from 2012 to 2021).

Concerning the analysis by journal (see Supplementary Materials), we found that 42% of publications was in the twenty top journals. The leading journal with more than 21 publications was *Applied Cognitive Psychology*, followed by *Memory* with 18 publications. This result is consistent with the fact that both journals aim to publish work on different areas of memory, with specific attention to autobiographical memory and mnemonic phenomena applied to different contexts (e.g., legal, clinical). In addition, the frequency of publications we found in the journal *Professional Psychology-Research and Practice* highlights the practical implications deriving from the repressed memory debate. Noteworthy, the performance of journals in terms of number of publications did not correspond to the journals' citations performance. The most cited journal was *Journal of Traumatic Stress*, a journal that has connections to the International Society for Traumatic Stress Studies (ISTSS) and that specifically publishes papers focusing on different aspects of trauma. This finding makes sense considering that the concept of repressed memories is posited to occur due to traumatic stress and is strictly related to traumatic forgetting.

Regarding the research areas and categories of the identified publications, we found that 74% of publications belonged to different categories of Psychology, with the highest number in Clinical, Multidisciplinary, and Experimental Psychology. These results were partially in accordance with our expectation and are in line with results by Dodier (2019). That is, we found that the largest pool of publications was in the fields of clinical and cognitive psychology. We did not predict to Multidisciplinary Psychology to be a large category, but in retrospect it makes sense given the concept of repressed and traumatic memory is of interest in different subfields. As regards the types of publications, we found they tended to be reviews in the Clinical and Multidisciplinary categories, while the ones in the Experimental category were mostly experiments.

As to authors' performance, the analyses demonstrated that the three most prolific authors were Merckelbach, McNally, and Loftus, with more than 20 publications. The majority of the publications of most authors was multi-authored, and authors appear to have stimulated collaborations among several scholars and universities. In addition, the co-authorship network analysis confirmed the notable role of these authors in terms of collaborative actions among scholars. Indeed, these authors were the leading scholars of three of the five communities visible in the co-authors' network.

Moreover, the analyses on authors' citations and co-citations corroborated the idea that the just-mentioned scholars (i.e., Loftus, McNally, and Merckelbach) – and Van der Kolk – were the authors more cited and co-cited in publications on repressed and traumatic memory.

We found that the most cited and co-cited publications were publications belonging to different research categories (i.e., Clinical, Multidisciplinary, and Experimental) suggesting that document citation frequency was not limited to a specific research category. We also found support for the hypothesis that publications in a certain category (one of the three aforementioned) were more inclined to cite publications in the same field. However, the analyses on co-citations showed an intriguing result which is partially in contrast with our hypothesis. As a matter of fact, we found that overall publications from the Clinical category are the most co-cited also in publications belonging to Multidisciplinary and Experimental categories. In addition, it seems that scholars in their articles do not limit the presentation of the phenomenon of repressed memory by considering only evidence that aligns with their own research category. Moreover, several publications were found to be highly co-cited in different research categories. This is understandable as many of these publications were reviews or studies on general content on repressed memories or related issues, such as studies on child sexual abuses. This result could be also related to the year of publications as in all three categories the most co-cited publications were early-stage publications. Yet, as the retrieved categories refer to journals, it could be that they are not representative of the actual approach used by authors in their articles. In addition, this pattern of results is also in line with what

was found with authors' citations and co-citations analyses because these latter analyses also showed that the most prominent scholars in the field belonged to different research categories (i.e., experimental, clinical).

To investigate the main terms used in publications and how they can be related to each other, we carried out cluster analyses on authors' keywords. Overall, the most representative keywords were used from 2000 to 2013. Also, the keywords "repressed memories" and "dissociative amnesia", had 2013 and 2012 as average publication years , respectively. Therefore, it is true that scholars are more frequently using the expression dissociative amnesia, but this does not mean that the term repressed memories has vanished. Interestingly, although each cluster referred to a specific macro topic, all of them included keywords referring to different and broader issues related to the debate. For instance, in Cluster 2 (i.e., blue colour) the macro topic is amnesia, while specific keywords include not only direct topics (i.e., dissociative amnesia) but also related and broader concepts like psychogenic amnesia or autobiographical memory.

The above-discussed results describe relevant information on the growth of publications that fostered the controversy on repressed memories. To achieve a deeper comprehension of the position in the debate endorsed by scholars, in the following section, we will present a review performed on all the retrieved publications.

3.3.1 The Descriptive Review

A review of the total sample of retrieved articles was performed in order to identify (i) whether the authors were skeptical or not of the concept of repressed memories and how they justified their opinion, (iii) whether the authors mentioned the opposing side of the debate, and (iii) whether possible implications for the practice of professionals (e.g., clinicians, legal) were provided (e.g., avoid specific techniques to recover memory, need for adequate education on memory functioning). Hence, we created a checklist to code the publications (i.e., Appendix A and https://osf.io/z2xfg/) consisting of three different parts, each investigating the three aforementioned questions. Note that all publications included in our analysis refer to the debate on repressed and

traumatic memories and, thus, refer to concept of repressed memories. However, some of them provide a general presentation of this concept whereas others present it in a more precise manner. Hence, the coding system was applied to further analyse what type of theoretical explanations (e.g., repression, dissociation, ordinary forgetting, etc) were presented to support authors' opinion.

Specifically, the first part of the coding checklist identified whether the authors explicitly stated their agreement or disagreement with the concept of repressed memories. Thus, we first categorized as "In Favour" the publications that appeared to support the idea of repressed memories; "Skeptical" for publications that did not; and "Neutral" for the papers that did not provide a clear opinion. Second, we further checked which evidence or concepts the authors provided to support their opinion. We examined whether the authors mentioned: (a) the traumatic and stressful nature of the event-related memories, (b) the successful storage of the information, (c) inconsistency with ordinary forgetting, (d) the inability to recall the memories for a period of time, (e) the mechanism of repression, (f) the mechanism of dissociation, (g) the inability to attribute the condition to physiological effects of a substance (e.g., alcohol or other drug of abuse, a medication) or neurological or other medical condition (e.g., traumatic brain injury), (h) an unconscious blockage of the memories, (i) a conscious blockage of the memories, (j) the concurrence with other disorders (e.g., PTSD, DID, multiple personality disorder), (k) whether the type of trauma is relevant to the occurrence of the phenomenon, (l) the idea of false memories and memory distortions, (m) memory suggestibility due to memory recovery techniques, (n) the misinformation effect, (o) the implantation effect, (p) fantasy proneness, (q) the idea of ordinary forgetting and normal memory mechanisms, (r) childhood amnesia, (s) the evidence on emotional memories, (t) the functioning of autobiographical memory, (u) the idea of malingering (see Appendix A-Part1). Each of the mentioned criteria was rated as present or absent (when a criterium was not reported in the publication, it was coded as absent).

For the second part of the coding, publications that were categorized as "In Favour" or "Skeptical" of the repressed memory concept were further analysed to identify whether the authors

mentioned the opposing side of the debate. We indicated the publications in which the authors referred to the opposing side as "Present" – and publications that did not refer to the opposing viewpoint as "Absent." When publications were scored as "Present", we checked which concepts of the other side were mentioned by seeking the same criteria as the first part of the review (see Appendix A-Part2). Finally, the third and last part of the scoring identified whether the author provided recommendations for professionals (in fields such as clinical or legal) and if so, which type of recommendations were given.

The coding of all publications was performed by the first author and two external coders, who were instructed to independently rate the publications based on the checklist (see Appendix A). The interrater reliability statistics were calculated using Krippendorff's α (Kα; Hayes & Krippendorff, 2007) that allows to estimate agreement among two or more coders. Overall, the agreement among coders for Part 1 of the scoring was high, *Mdn*Kα = 0.93 (range = 0.83–1.00); 17 of the 22 concepts reached at least 0.90 agreement, while the others had an agreement from 0.83 to 0.88. Similarly, the agreement for Part 2 of the scoring was high, *Mdn*Kα = 0.92 (range = 0.80–1.00); 14 of the 22 concepts had at least 0.90 agreement and the rest an agreement between 0.80 and 0.89.

3.3.2 Results

The analyses on the three parts of the descriptive review are first presented by showing the results for the entire sample of the retrieved publications (i.e., same publications as for the Scientometric analyses) and second by splitting the sample by the research category of publications. We split the publications in four research categories: Clinical, Experimental, Multidisciplinary, and Others[11].

Position in the Debate

[11] In the Others category were collapsed all publications not belonging to one of the categories clinical, experimental, and multidisciplinary (e.g., Law, Social work, etc).

Overall, 40.8% (n = 177) of publications were categorized as In Favour of the concept of repressed memories, 29.5 % (n = 128) as Neutral, and 29.7% (n = 129) as Skeptical and we found a statistically significant difference among percentages, $\chi^2(2, N = 434) = 12.96$, $p = .002$, *Cohen's W* = .34. Specifically, the percentage was statistically significant higher for publications In Favour than Skeptical $\chi^2(1, N = 300) = 9.52$, $p = .002$, *Cohen's W* = .24 as well as than Neutral publications, $\chi^2(1, N = 307) = 8.77$, $p = .003$, *Cohen's W* = .16. Considering the research categories, for the category Clinical 53.7% (n = 95) were In Favour, 24.3% (n = 43) as Skeptical, and 22.0% (n = 39) as Neutral. The difference among percentages was statistically significant, $\chi^2(2, N = 177) = 33.08$, $p < .01$, *Cohen's W* = .44 and in particular, publications In Favour were statistically higher than publications Skeptical, $\chi^2(1, N = 137) = 19.54$, $p < .01$, *Cohen's W* = .27, and than Neutral publications, $\chi^2(1, N = 133) = 23.40$, $p < .01$, *Cohen's W* = .42. Publications belonging to the category Experimental were for 57.4% (n = 39) Skeptical, for 26.5% (n = 18) Neutral, and for 16.2% (n = 11) In Favour and we found a statistically significant difference among percentages, $\chi^2(2, N = 68) = 17.58$, $p < .01$, *Cohen's W* = .62. Skeptical publications were statistically higher than publications In Favour, $\chi^2(1, N = 58) = 17.02$, $p < .01$, *Cohen's W* = .60 as well as than Neutral publications, $\chi^2(1, N = 49) = 20.20$, $p < .01$, *Cohen's W* = .36. For the category Multidisciplinary 40.2% (n = 43) were In Favour, 33.6% (n = 36) as Neutral, and 26.2% (n = 107) as Skeptical, but no statistically significant difference was found between percentages, $\chi^2(2, N = 104) = 3.16$, $p = .21$, *Cohen's W* = .30. Finally, for the category Others 42.7% (n = 35) were categorized as Neutral, 39.0% (n = 32) as In Favour, and 19.5% (n = 16) as Skeptical and we detected a statistically significant difference between percentages, $\chi^2(2, N = 83) = 7.34$, $p = .02$, *Cohen's W* = .41. Specifically, Neutral publications were statistically higher than Skeptical publications, $\chi^2(1, N = 51) = 7.08$, $p = .008$, *Cohen's W* = .38. With regards to the concepts mentioned to support the authors' position: Table 5 shows the percentage of each criterion by categories.

---please insert Table 5 about here ---

Mention of the Counterpart of the Debate

A set of 33.3% (*n* = 144) of publications that clearly expressed their opinion (*N* = 268) mentioned the opposite side of the debate (i.e., the idea and scientific literature supported by the counterpart in the debate). Of this subsample, 36.8% (*n* = 53) belonged to the Clinical category, 22.2% (*n* = 32) to the Experimental category, 30.6% (*n* = 44) to the Multidisciplinary category, 10.4% (*n* = 15) to the Others category. Regarding the concepts mentioned to cite the other side of the debate, overall, Table S8 shows the percentage of each criterion by categories (see Supplementary Materials: Table S8).

Recommendations for practice

We found 27.2% (*n* = 118) of total publications provided recommendations for practitioners. Of these 144 given recommendations, 51.7% (*n* = 61) were publications in the Clinical category, 7.6% (*n* = 9) Experimental, 24.6% (*n* = 29) Multidisciplinary, and 16.9% (*n* = 19) Others. We detected 16 different types of recommendations for clinical practitioners and psychotherapists, legal professionals, and researchers. The majority of these publications (56.8%, *n* = 67) reported more than one recommendation. Specifically, the most mentioned recommendation (37.3%, *n* = 44) was the need for good practice by clinical psychologists and psychotherapists, followed by the need for adequate training for clinical psychologists and psychotherapists (28.8%, *n* = 34). Sixteen (13.6% %) publications referred also to the need for adequate practice by legal professionals, 13 (11.0%) mentioned the need for corroborating evidence to assess recovered memories cases, and 13 (11.0%) recommended the need to carefully evaluate each case. Some authors also stressed the necessity to have more research on repressed memories (11.0%, *n* = 13), with some linking this to the need to base legal and clinical practice on scientific evidence (8.5%, *n* = 10). In addition, the need for correctly informing the patient before undertaking psychotherapy (5.9%, *n* = 7), and of collaboration among practitioners of different fields (4.2%, *n* = 5) were indicated in some publications. Finally, a few authors referred to the following recommendations: The need for adequate training for legal practitioners (2.5%, *n* = 3), the necessity to have a clear definition of the phenomenon of repressed memories (1.7%, *n* = 2), and the need for correctly educating students, for

having tools to assess the veracity of memories, for clear guidelines for the clinical setting, for taking into consideration that repressed and false memories can be both true, and for not disseminating wrong information throughout the media (all 0.8, %, *n* = 1). Table S9 summarizes these recommendations, by the research categories of publications, and by categorization into In Favour, Skeptical, or Neutral (see Supplementary Materials: Table S9).

3.3.3 Discussion

The aim of the second part of the current manuscript was to perform a descriptive review on the position that scholars take on the topic of repressed memory. First, we found that 41% of publications were in favour of the concept of repressed memories, whereas 29% did not explicitly express any opinion, and 30% of authors did not support the concept. Almost half (46%,)[12] of publications in favour of the concept of repressed memory were published in the first peak of publications—from 1994 to 2000. About half of the neutral publications were published in the 1994 to 2000 period (50%), while skeptical publications had a similar distribution in all three time periods (around 25%) (see Supplementary Materials: Figure S3). This is in line with Dodier's study (2019) as it suggests that although fewer academics have become in favour of the idea of repressed memory in later writings, our current article still found a percentage of 21% of publications supporting the topic of repressed memory during the last wave.

The concepts given by authors who were in favour of repressed memories to justify their position included the traumatic and stressful nature of the event (97%), the inability to recall the memory for such an event for a long time (93%), the idea that the defensive mechanisms of repression and/or dissociation were the cause of the phenomenon (73%, and 54%, respectively). Interestingly, when we specifically investigated whether the authors supported the idea that repression was due to the unconscious or conscious blockage of the traumatic memory, we found that less than half of authors clarified this issue (35% and 18%, respectively). By contrast, the

[12] The percentage rate was calculated by dividing the number of publications in the first peak that were in favour by the total number of publications in favour.

authors who were skeptical towards repressed memories justified their opinion by mentioning arguments such as ordinary forgetting as alternative explanation (87%), the possibility to report false memories and memory distortions (67%), the proneness to memory recovery techniques (48%), and the evidence that emotional memories are well remembered (19%).

As expected, we found that the endorsement of the concept of repressed memories varied with the research category of publications. The endorsement of repressed memories was particularly high (46%) for publications belonging to the Clinical category, whereas only 6% of publications in the Experimental category supported the concept. Interestingly, also a moderate percentage (31%) of publications in the Multidisciplinary category gave support to the idea of repressed memories. Overall, these results show that publications in clinical fields are the ones that favour the concept of repressed memory more than in other subfields.

Finally, regarding the recommendations provided, 27% of publications stated some practical recommendations to professionals. The main recommendation was the necessity for clinical psychologists and psychotherapists to use good practice (37%) as well as to correctly educate such professionals on, for example, the functioning of memory (29%). It was also highly recommended for legal practitioners to correctly do their job (14%). Interestingly, these recommendations were mainly provided by publications in the Clinical and Multidisciplinary categories and were not strictly related to the authors' position in the debate. This is understandable given that the majority of these publications encouraged psychotherapists to be well educated in terms of how to provide treatment in cases of alleged repressed or dissociated memories. That is, the recommendations focused on ways to facilitate the process of recovering repressed memories, such as, for instance, the use of specific types of therapy (e.g., EMDR) or the need to create a therapeutic alliance with the patient. The recommendations were in line with the position in the debate taken by a quarter of clinical articles (i.e., In Favour of repressed memories). In those articles that were skeptical (12%), the ones in the Multidisciplinary category tended to emphasize the need for better education on memory functioning. Similarly, it is not surprising that another recommendation was the need for

practitioners in the clinical field to correctly do their job. Nevertheless, it is also noteworthy to mention that we found some articles in the clinical category that endorsed the phenomenon of repressed memories that also discussed the possibility that some psychotherapeutic techniques (e.g., hypnosis, guided imagery) can foster the formation of false memories.

4.1 General Discussion

We provided a scientometric and descriptive review on the debate on repressed and traumatic memory. This was achieved by mapping the evolution of this concept in the peer-reviewed literature and examining whether the debate endures or not. Our analyses demonstrated that the debate on repressed and traumatic memory continues in recent academic writings. In what follows, we will combine the main results obtained from the scientometric and the review.

The results concerning the number of publications across years revealed three major waves. In hypothesis (1), we predicted the first and third peaks in publication numbers (1990s and 2012–2021), but we did not anticipate the second peak from 2003 to 2009. The peak from 2012 to 2021, the third wave, shows that there continues to be academic interest in the phenomenon of repressed memory (or perhaps more exactly dissociative amnesia or in general traumatic memories), and that the debate continues. In addition, based also on the results by country, the debate on repressed memory is worldwide and is not restricted to one country.

Moreover, the three peaks of publications appear to be preceded by cases of people reporting recovered memories of abuse during therapy. Both in the 1990s and in recent years there have been a number of highly publicized cases – in which people claimed to recover memories of sexual abuse after undertaking therapy (e.g., the Bibbiano case in Italy)[13]. In addition, this may be also true of the second peak from 2003–2009—several publications in this period discussed cases of repressed memories for sexual abuse (e.g., Cai & Fung, 2003; Colangelo, 2009; Gleaves et al., 2004). Furthermore, some publications during the three waves were articles investigating the possible

[13] https://www.thelocal.it/20190628/italian-police-uncover-gang-that-brainwashed-children-and-sold-them-to-foster-parents/

mechanisms underpinning repressed memories and recovered memories as well as the possibility to create false memories due to suggestive memory techniques. Indeed, in accordance with our hypothesis (2), we found that the majority of publications were in the clinical and experimental fields, and, in some in the multidisciplinary field.

We found that almost 41% of all the publications were in favour of the idea of repressed memories, whereas around 30% were skeptical. As predicted in hypothesis (5), the agreement, or not, was related to the field of publications. Specifically, publications in the multidisciplinary fields reported similar percentages (i.e., approximately 33% for each position), around 50% of clinical publications were sympathetic with the idea of repressed memories, while more than half of experimental publications tended to be skeptical. Moreover, clinical scholars were the ones who were more inclined to support the idea of the mechanisms of repression (both unconscious and conscious) and dissociation, whereas experimental scholars noted the importance of ordinary forgetting as an alternative explanation and suggestion-based false memories in memory recovery therapy. We found that the publications in favour of repressed memory were mainly published during the first wave and decreased in the third peak. Although this suggests that recently a higher percentage of scholars tend to show skepticism towards the concept of repressed memories, around 20% of publications were still in favour in the recent third wave (neutral publications had a similar percentage). There is still some persistence to the idea in the literature that traumas can be completely blocked (e.g., via repression, dissociation, or other mechanism). This idea is likely one reason for the continued practice of attempting to uncover blocked traumas in some psychotherapies (e.g., Patihis & Pendergrast, 2019).

Finally, we observed that in articles published in the 1990s the terminology mainly used to refer to the phenomenon of repressed memories was related to expressions such as “recovered memories”, “repression”, “child abuse”. By contrast, and partially in line with our hypothesis (4), we found that both expressions “repressed memories” and “dissociative amnesia” were used in more recent publications (i.e., from 2012). This aligns partially with the idea that dissociative

amnesia has become the more acceptable terminology to use to explain how traumatic experiences are blocked -and forgot for a certain period- in memory. This contrasts with what Pope and colleagues (2022) concluded in their recent bibliometric analysis on dissociative amnesia. In this work, the authors—by searching for publications on dissociative amnesia published from 2011 to 2020—retrieved 89 publications. They argued that the concept of selective and localized dissociative amnesia is not widely accepted among scholars. Our approach was different in that we did not narrow our focus to those two subtypes of memory processes. We found that in older publications, the term dissociative amnesia was less likely to be used while it has become more popular in recent academic writings (see also Otgaar et al., 2019). We found the term "repressed memories" is also still used, so both terms remain quite popular—though the two terminologies might be held in different levels of esteem. The use of two or more terminologies is worrisome because different terms that convey the same idea might lead to confusion among professionals. We might speculate that some scholars (e.g., Barden, 2016; McHugh, 2003) might have claimed the memory wars as over because they did not take into account that the notion of repressed memories is now called dissociative amnesia.

4.2 Limitations

Some caveats of the current work need to be addressed. To begin, it could be that we missed pertinent publications due to the procedure adopted (e.g., steps and scripts used). However, because of the scope of our study we aimed to retrieve only publications having repressed/recovered memories as the main topic (see Supplemental Materials-Literature Search: Step 2), therefore, we excluded papers peripherally related to our criteria (e.g., Banaji & Kihlstrom, 1996; DePrince et al., 2004). Moreover, we did not consider chapters and books on the topic. In addition, we selected only publications in English. Hence, we may have missed publications on the topic in other languages. The small subsample of case studies articles we found might not reflect the real percentage of reports of repressed memories in the population. This could be true for two reasons. First, it might be the case that several cases were excluded a priori by scholars because did not align with their

own beliefs on the phenomenon. Second, it could also be that—because of the sensitive information related to cases of repressed memories (i.e., recall of abuse, legal information)—scholars were not able to publish such cases. Finally, there is the possibility that our findings on the terminology used to refer to repressed memories could be biased because the cluster analysis was performed on publications' keywords. That is, it might be that scholars used the term "dissociative amnesia" to point out that the diagnosis of dissociative amnesia resembles the idea of repressed memories. Hence, it could be that the term was used to support skepticism toward the idea of repressed memories rather than to emphasize their existence.

5.1 Concluding Remarks

To conclude, our scientometric and descriptive review suggests that the discourse on repressed memory continues among different fields and, oftentimes, is presented in the broader frame of traumatic memories. The different concepts (e.g., repression, conscious blockage of memories, ordinary forgetting) introduced to justify the authors' position, as well as a lack of consensus among scholars in the endorsement of such concepts is noteworthy. This suggests a need for a precise definition of the construct and its proposed underpinning mechanisms. It may be the case that both repressed memory and dissociative amnesia are concepts impossible to measure or define clearly, in which case more measurable constructs should be used in research on traumatic memory. We encourage clinicians and scholars to provide clear, evidence-based recommendations to practitioners to avoid iatrogenic outcomes in clinical psychology, and false convictions in the legal field. Such recommendations would be beneficial for professionals of different fields who deal with the evaluation of memories (e.g., jurors, judges, lawyers) or based their interventions on people's memories (e.g., clinicians, psychotherapists). Even though some scholars have argued that the debate on the existence of repressed memory is over (e.g., Barden, 2016; McHugh, 2003), this debate is alive. As no consensus on the topic continues to enter clinical and legal contexts, there is a potential for continued harm that reflect the harms that have occurred in past decades.

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Authors Contribution

FB conceived the study, conducted data searching, analysed the data, and wrote the manuscript. HO, IM, LP, OD helped in conceiving the study and critically revised the manuscript. AC, TL critically revised the manuscript. All authors contributed to the article and approved the submitted version.

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Zadra, A., & Stickgold, R. (2021). When brains dream: Understanding the science and mystery of our dreaming minds. WW Norton & Company.

Zappalà, A., Mangiulli, I., & Otgaar, H. (*submitted*) Beliefs and therapeutic practices related to traumatic memories among Italian cognitive behavioral therapists and trainees.

Zhong, B., Wu, H., Li, H., Sepasgozar, S., Luo, H., & He, L. (2009). A scientometric analysis and critical review of construction related ontology research. *Automation in Construction, 101*, 17–31. https://doi.org/10.1016/j.autcon.2018.12.013

Table 1. The 20 most co-cited publications.

Authors	Title of the Publication	Co-citations
Loftus, 1993	*The reality of repressed memories*	72
Herman & Schatzow, 1987	*Recovery and verification of memories of childhood sexual trauma*	36
Briere & Conte, 1993	*Self-reported amnesia for abuse in adults molested as children*	34
Williams, 1994	*Recall of childhood trauma: A prospective study of women's memories of child sexual abuse.*	32
Lindsay & Read, 1994	*Psychotherapy and memories of childhood sexual abuse: a cognitive perspectives*	29
Bernstein & Putnam, 1986	*Development, reliability and validity of a dissociation scale*	21
Johnson et al., 1993	*Source monitoring*	21
Freyd, 1996	*Betrayal trauma: the logic of forgetting childhood abuse*	20
Loftus et al., 1994	*Memories of childhood sexual abuse: remembering and repressing*	20
Anderson & Green, 2001	*Suppressing unwanted memories by executive control*	19
Loftus & Pickrell, 1995	*The formation of false memories*	18

Clancy et al., 2000	*False recognition in women reporting recovered memories of sexual abuse*	18
Williams, 1995	*Recovered memories of abuse in women with documented child sexual victimization histories*	17
Feldman-Summers & Pope, 1994	*The experience of "forgetting" childhood abuse: a national survey of psychologists*	17
Van der Kolk & Fisler, 1995	*Dissociation and the fragmentary nature of traumatic memories: overview and exploratory study*	17
Herman, 1992	*Trauma and recovery*	16
Terr, 1991	*Childhood traumas: an outline and overview*	15
McNally et al., 2001	*Directed forgetting of trauma cues in adults reporting repressed or recovered memories of childhood sexual abuse*	15
Pezdek et al., 1997	*Planting false childhood memories: the role of event plausibility*	15
Elliot & Briere, 1995	*Posttraumatic stress associated with delayed recall of sexual abuse: a general population study*	14

Table 2. The number of citations for the top 10 cited authors by the research categories of Clinical Psychology, Multidisciplinary Psychology, and Experimental Psychology.

Clinical Psychology		**Multidisciplinary Psychology**		**Experimental Psychology**	
Author	**Citations**	**Author**	**Citations**	**Author**	**Citations**
Van der Kolk, B.A.	1360	*Loftus, E F.*	944	*Loftus, E F.*	491
Briere, J.	615	*Anderson, M.C.*	804	*Lindsay, D.S.*	327
Herman, J.L.	475	*McNally, R.J.*	759	*Ceci, S.J.*	305
McNally, R.J.	427	*Clancy, C.A.*	285	*Brewin, C.R.*	199
Loftus, E.F.	386	*Lindsay, D.S.*	239	*Merckelbach, H.*	178
Clancy, C.A.	362	*Goodman, G.S.*	219	*McNally, R.J.*	145
Schacter, D.L.	265	*Schacter, D L.*	184	*Geraerts, E.*	142

Pope, H.G.	242	*Merckelbach, H.*	175	*Gleaves, D H.*	98
Brewin, C.R.	185	*Lilienfeld, S O.*	152	*Garry, M.*	97
Merckelbach, H.	146	*Patihis, L.*	147	*Smeets, E.*	80

Table 3. The number of citations for the top 10 cited publications by the research categories of Clinical Psychology, Multidisciplinary Psychology, and Experimental Psychology.

Clinical Psychology			Multidisciplinary Psychology			Experimental Psychology		
Author	**Publication**	**Citations Category**	**Author**	**Publication**	**Citations Category**	**Author**	**Publication**	**Citations Category**
Van der Kolk & Fisher, 1995	*Dissociation and the fragmentary nature of traumatic memories - Overview and exploratory-study*	648 Clinical	Loftus, 1993	*The reality of repressed memories*	787 Multidisciplinary	Hyman & Pentland, 1996	*The role of mental imagery in the creation of false childhood memories*	289 Experimental
Van der Kolk, 1994	*The body keeps the score - Memory and the evolving psychobiology of posttraumatic stress*	622 Psychiatry	Anderson & Green, 2011	*Suppressing unwanted memories by executive control*	677 Multidisciplinary	Lindsay & Read, 1994	*Psychotherapy and memories of childhood sexual abuse - A cognitive perspective*	288 Experimental
Herman & Schatzow, 1987	*Recovery and verification of memories of childhood sexual trauma*	437 Clinical	Anderson & Levy, 2009	*Suppressing Unwanted Memories*	127 Multidisciplinary	Ceci et al, 1994b	*Repeatedly thinking about a non-event - Source misattributions among preschoolers*	246 Experimental
Briere & Elliot, 1992	*Methodological issues in the study of sexual abuse effects*	348 Clinical	DePrince & Freyd, 2004	*Forgetting trauma stimuli*	114 Multidisciplinary	Ramachandran, 1995	*Anosognosia in parietal lobe syndrome*	209 Experimental
Briere & Conte, 1993	*Self-reported amnesia for abuse in adults molested as children*	267 Clinical	McNally, 2003b	*Progress and controversy in the study of posttraumatic stress disorder*	378 Multidisciplinary	Brewin, 2007	*Autobiographical memory for trauma: Update on four controversies*	154 Experimental
FeldmanSummers & Pope, 1994	*The experience of forgetting childhood abuse - a national survey of psychologists*	118 Clinical	Lindsay et al., 2004	*True photographs and false memories*	150 Multidisciplinary	Anderson & Huddleston, 2012	*Towards a Cognitive and Neurobiological Model of Motivated Forgetting*	108 Experimental & Social
Ceci et al., 1994c	*The possible role of source misattributions in the creation of false beliefs among preschoolers*	222 Clinical	Goodman et al., 2003	*A prospective study of memory for child sexual abuse: New findings relevant to the repressed-memory controversy*	142 Multidisciplinary	Freyd et al., 2007	*The state of betrayal trauma theory: Reply to McNally - Conceptual issues and future directions*	87 Experimental
Williams, 1995	*Recovered memories of abuse in women with*	197 Clinical	Patihis et al., 2014	*Are the Memory Wars Over? A Scientist-*	103 Multidisciplinary	Geraerts et al., 2005	*Fantasy proneness, but not self-reported trauma is related to*	63 Experimental

	documented child sexual victimization histories			*Practitioner Gap in Beliefs About Repressed Memory*			*DRM performance of women reporting recovered memories of childhood sexual abuse*	
Chu et al., 1999	*Memories of childhood abuse: Dissociation, amnesia, and corroboration*	182 Clinical	Clancy et al., 2002	*Memory distortion in people reporting abduction by aliens*	94 Clinical & Multidisciplinary	Ceci & Loftus, 1994a	*Memory work - A royal road to false memories*	62 Experimental
Bremner et al., 1995	*Functional Neuroanatomical Correlates Of The Effects Of Stress On Memory*	171 Clinical	Clancy et al., 2004	*False recognition in women reporting recovered memories of sexual abuse*	91 Multidisciplinary	Wade et al., 2007	*False claims about false memory research*	54 Experimental

Table 4. Keywords and their occurrences, links, total link strength (TLS), and the average publication year for the five detected clusters.

Cluster	Keywords	Occurrences	Links	TLS	Average Year
1	*Trauma*	33	15	32	2009
1	*Dissociation*	33	14	32	2008
1	*Memory*	30	16	28	2005
1	*Repression*	26	15	23	2007
1	*Childhood Sexual Abuse*	24	12	19	2005
2	*Recovered memories*	31	14	28	2006
2	*Repressed memories*	22	10	10	2013
2	*False memory*	21	8	19	2011
2	*Child abuse*	31	14	28	2000
3	*Dissociative amnesia*	27	12	17	2012
3	*Amnesia*	18	12	13	2008
3	*Autobiographical memory*	10	9	9	2010
3	*Psychogenic amnesia*	7	4	7	2008
4	*Recovered memories*	34	14	32	2007
4	*Sexual abuse*	20	15	19	2003
4	*False memories*	13	7	11	2007
4	*Psychotherapy*	7	10	7	2006
5	*Child Sexual Abuse*	16	11	12	2009
5	*Childhood trauma*	7	9	6	2007

Table 5. Percentage of each criteria and the number of publications (in brackets) adopted to justified authors' opinion by categories.

	In Favour				Skeptical				Neutral			
	Clinical	**Experimental**	**Multidisciplinary**	**Others**	**Clinical**	**Experimental**	**Multidisciplinary**	**Others**	**Clinical**	**Experimental**	**Multidisciplinary**	**Others**
Traumatic nature of the event	52.91 (91)	5.81 (10)	23.26 (40)	18.02 (31)	38.71 (12)	45.16 (14)	6.45 (2)	9.68 (83)	30.83 (37)	14.17 (17)	26.67 (32)	28.33 (34)
Successful storage	68.75 (11)	0.00	12.5 (2)	18.75 (3)	50.00 (2)	50.00 (2)	0.00	0.00	66.67 (8)	16.67 (2)	0.00	16.67 (2)
Inconsistency with ordinary forgetting	70.00 (14)	10 (2)	5 (1)	15 (3)	100.00 (2)	0.00	0.00	0.00	62.50 (5)	12.50 (1)	12.50 (1)	12.50 (1)
Inability to recall for a certain period	53.01 (88)	6.024(10)	23.49 (39)	17.47 (29)	34.48 (10)	48.26 (14)	6.90 (2)	10.34 (3)	30.25 (26)	14.29 (17)	26.89 (32)	28.57 (34)
Repression	45.74 (59)	6.20 (8)	31.78 (41)	16.28 (21)	82.05 (32)	17.95 (7)	0.00	0.00	29.57 (36)	13.22 (16)	28.93 (35)	28.10 (34)
Dissociation	64.21 (61)	6.316 (6)	13.68 (13)	15.79 (15)	100.00 (15)	0.00	0.00	0.00	42.11 (16)	18.42 (7)	21.05 (8)	18.42 (7)
No physiological or medical conditions	47.37 (9)	15.79 (3)	5.26 (1)	31.58 (6)	0.00	100.00 (2)	0.00	0.00	33.33 83)	44.44 (4)	11.11 (1)	11.11 (1)
Unconscious blocking	40.32 (25)	4.84 (3)	32.26 (20)	22.58 (14)	0.00	0.00	0.00	0.00	28.57 (6)	19.05 (4)	19.05 (4)	33.33 (7)
Conscious blocking	38.71 (12)	3.23 (1)	35.48 (11)	22.58 (7)	0.00	0.00	0.00	0.00	25.00 (2)	25.00 (2)	25.00 (2)	25.00 (2)
Co-occurrence with disorders	68.52 (37)	5.56 (3)	16.67 (9)	9.26 (5)	33.33 (1)	66.67 (2)	0.00	0.00	42.86 (6)	7.14 (1)	42.86 (6)	7.14 (1)
Type of trauma	88.89 (16)	0.00	5.56 (1)	5.56 (1)	100.00 (1)	0.00	0.00	0.00	50.00 (2)	0.00	50.00 (2)	0.00
False memories	54.55 (24)	6.82 (3)	22.73 (10)	15.91 (7)	32.14 (27)	29.76 (25)	25.00 (21)	13.09 (11)	32.58 (29)	15.73 (14)	30.24 (27)	21.35 (19)
Memory suggestibility	39.13 (9)	13.04 (3)	34.78 (8)	13.04 (3)	31.15 (19)	29.51 (18)	24.59 (15)	14.75 (9)	30.00 (18)	20.00 (12)	31.67 (19)	18.33 (11)
Misinformation effect	40.00 (2)	20.00 (1)	40.00 (2)	0.00	38.89 (7)	33.33 (6)	16.67 (3)	11.11 (2)	46.15 (6)	23.08 (3)	15.38 (2)	15.38 (2)
Implantation effect	66.67 (8)	0.00	25 (3)	8.33 (1)	43.24 (16)	24.32 (9)	24.32 (9)	8.11 (3)	33.33 (9)	18.52 (5)	33.33 (9)	14.81 (4)
Fantasy proneness	100.00 (8)	0.00	0.00	0.00	35.29 (23)	35.29 (19)	23.53 (17)	5.88 (10)	25.00 (2)	25.00 (2)	12.50 (1)	37.50 (3)
Ordinary forgetting	56.67 (17)	13.33 (4)	23.33 (7)	6.67 (2)	30.71 (43)	30.00 (42)	22.86 (32)	16.43 (23)	30.19 (16)	18.87 (10)	32.08 (17)	18.87 (10)
Childhood amnesia	10.00 (1)	0.00	20.00 (2)	70.00 (7)	50.00 (9)	22.22 (4)	22.22 (4)	5.56 (1)	20.00 (1)	20.00 (1)	0.00	60.00 (3)
Emotional memory	50.00 (2)	0.00	25.00 (1)	25.001)	42.31 (11)	23.08 (6)	19.23 (5)	15.35 (4)	40.00 (4)	20.00 (2)	30.00 (3)	10.00 (1)
Autobiographical memory	50.00 (4)	0.00	37.50 (3)	12.50 (1)	57.14 (12)	14.29 (3)	28.57 (6)	0.00	50.00 (4)	0.00	25.00 (2)	25.00 (2)
Malingering	100 (1)	0.00	0.00	0.00	27.27 (3)	18.18 (2)	54.55 (6)	0.00	33.33 (2)	16.67 (1)	16.67 (1)	33.33 (2)

Note: Percentages were calculated by dividing the number of publications of each category by the total number of publications for the considered criterium.

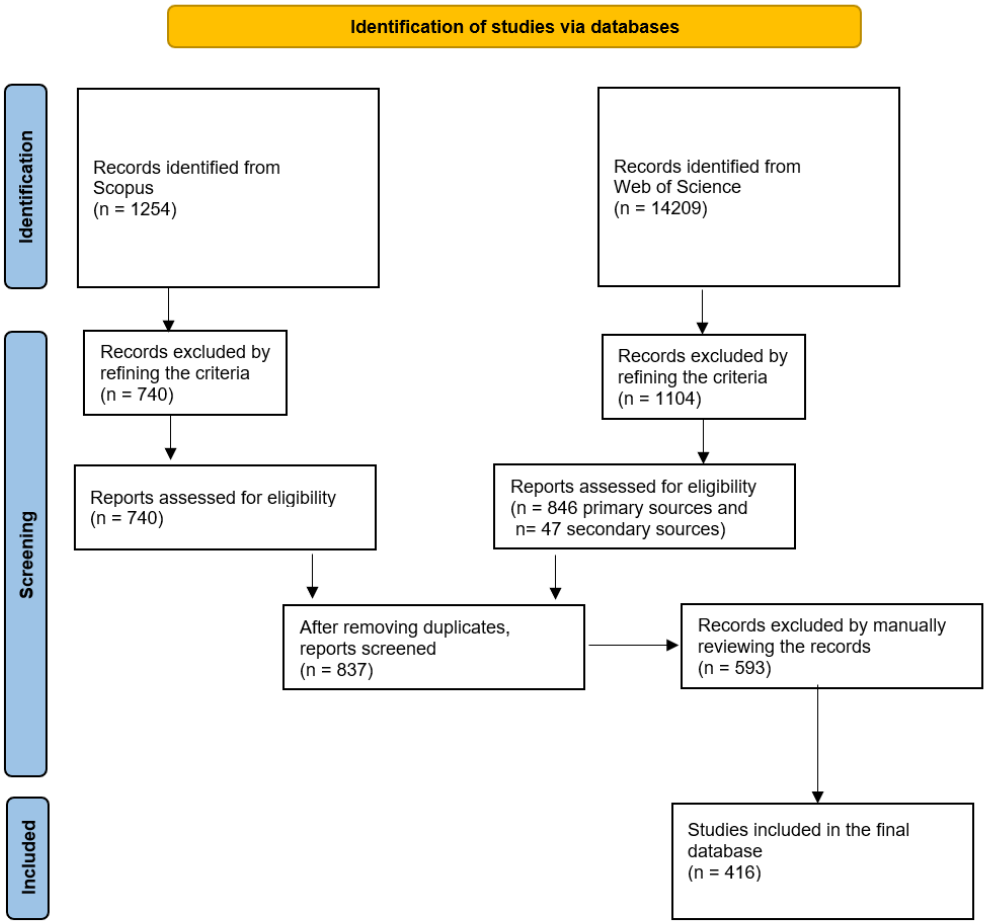


Figure 1. The PRISMA chart shows the data selection process.

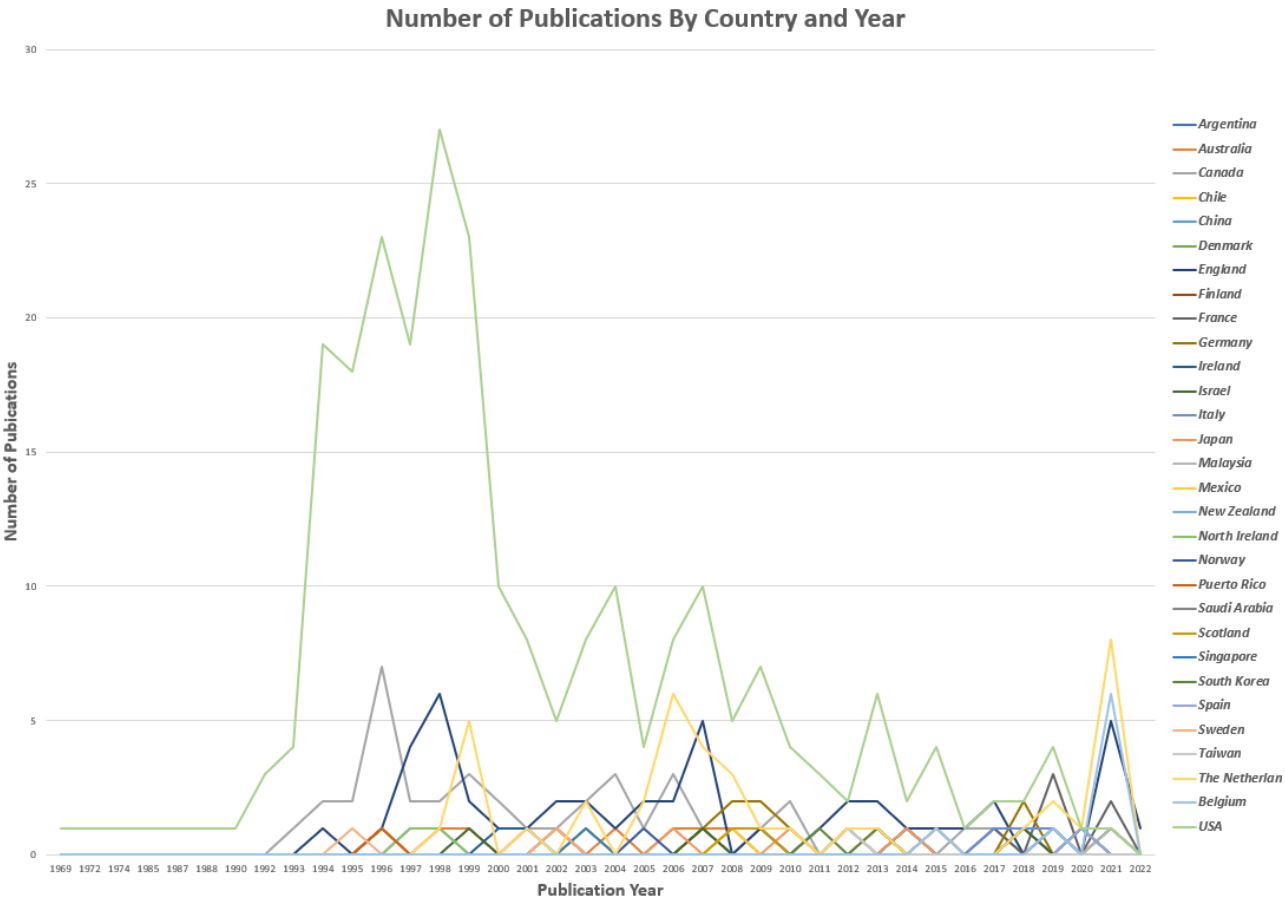


Figure 2. Number of publications by country and by year.

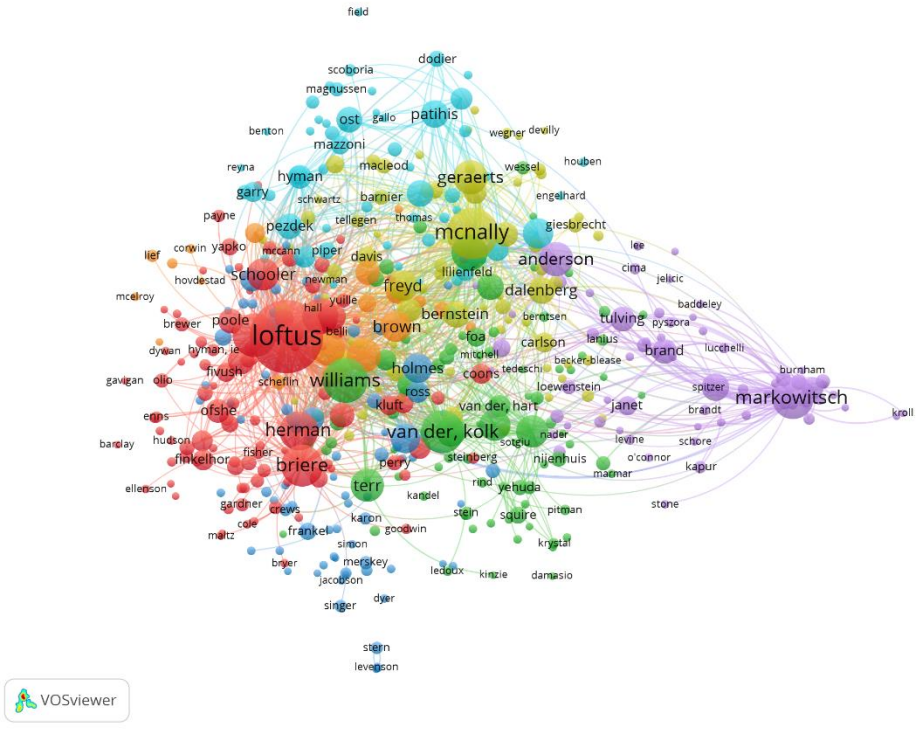
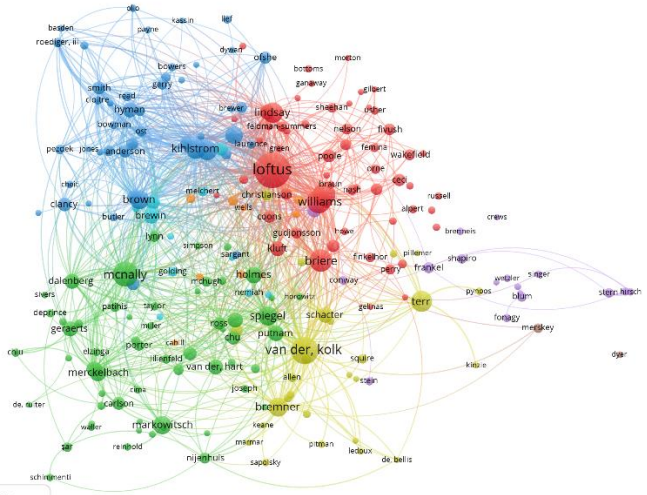
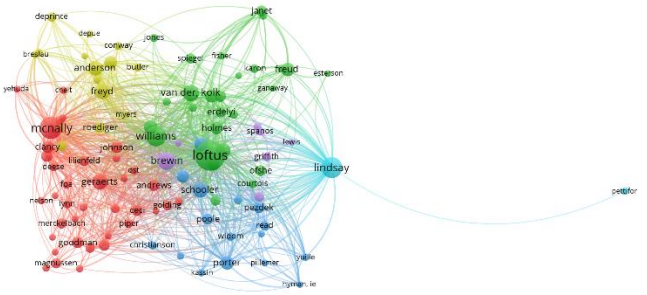


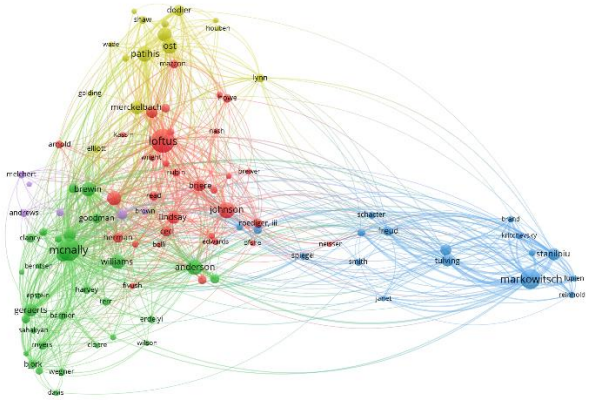
Figure 3. The author co-citation network.



4a.



4b.



4c.

Figures 4. The author co-citation networks for the three research categories (i.e., Figure 4a.: Clinical Psychology, Figure 4b.: Multidisciplinary Psychology, and Figure 4c.: Experimental Psychology).

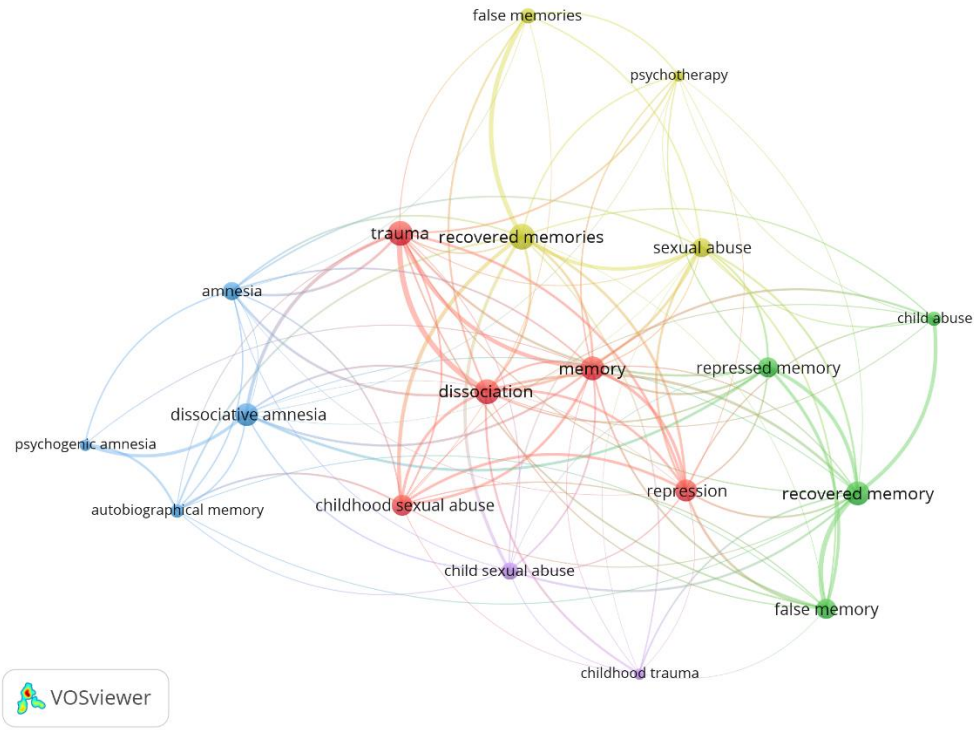


Figure 5. The Authors' Keywords network. Different colours represent different clusters (i.e., Red: Cluster 1; Green: Cluster 2; Blue: Cluster 3; Yellow: Cluster 4; Purple: Cluster 5).

Appendix A

Part 1

1.1 Position in the Debate: In Favour, In Contrast, Neutral

1.2 Concepts described to support the position in the debate

(a) the traumatic and stressful nature of the event-related memories (e.g., repressed memories occur because of the experience of a traumatic and stressful event)
(b) the successful storage of the information (e.g., the person is not permanently forgotten and can be recovered because the person has stored the aversive experience in his/her memory)
(c) inconsistent with ordinary forgetting (e.g., the forgetting of the traumatic event cannot be explained with the normal forgetting but is due to a special mechanism)
(d) the inability to recall the memories for a period of time (e.g., the memory for the traumatic experience is blocked for many years and later recovered in pristine form)
(e) the mechanism of repression (e.g., the reason why the traumatic experience is forgotten is a coping mechanism called repression)
(f) the mechanism of dissociation (e.g., the reason why the traumatic experience is forgotten is a coping mechanism called dissociation)
(g) the inability to attribute the condition to physiological effects of a substance (e.g., alcohol or other drug of abuse, a medication) or neurological or other medical condition (e.g., traumatic brain injury) (e.g., the reported forgetting of the outstanding autobiographical event cannot be explained by brain injury, transient neurological disturbances, or other physiological effects)
(h) an unconscious block of the memories (e.g., people have no memory of the event because they unconsciously block such a memory)
(i) a conscious block of the memories (e.g., people have no memory of the event because they consciously block the unwanted memory)
(j) the concurrence with other disorders (e.g., PTSD, DID, multiple personality disorder) (e.g., the person is not able to consciously recall the traumatic experience but the effect of this traumatic experience can be evident in the form of intrusions and dissociative flashbacks, panic attacks, or psychosomatic symptoms and disorders)
(k) whether the type of trauma is relevant to the occurrence of the phenomenon (e.g., repressed memories are a response to different type of traumas: Wars, natural catastrophes, crimes, and childhood abuse)
(l) the idea of false memories and memory distortions (e.g., the memories recovered with therapy can be false memories)
(m) memory suggestibility due to memory recovery techniques (e.g., the therapeutic interventions might be inherently suggestive)
(n) the misinformation effect (e.g., experimental studies have demonstrated that people are prone to incorporate in their memories external and misleading information).
(o) the implantation effect e.g., by using paradigms similar to therapeutic interventions, experimental studies have shown that false autobiographical memories can be implanted)
(p) fantasy proneness (e.g., the repressed and later recovered memory can be the result of the person's proneness to fantasy)
(q) the idea of ordinary forgetting and normal memory mechanisms (another argument is that claims of repressed memories can be explained ordinary forgetting, such that it is normal that people who have experienced a traumatic event will not remember all details of that experience)
(r) the childhood amnesia (e.g., being unable to recall a traumatic event experience during the childhood can be due to the normal phenomenon of childhood amnesia)
(s) the evidence on emotional memories (e.g., research has shown that people do not easily forget emotional and traumatic events)

(t) the functioning of autobiographical memory (e.g., the majority of research has suggested that autobiographical memory (i.e., memory of individual's personal history) is highly fallible and suggestible and prone to hindsight biases)
(u) the idea of malingering (e.g., it could be that a person feigns to not remember the traumatic event for not re-experiencing bad feelings and emotions and later decides to report it)

Part 2

2.1 Mention of the opposite side of the debate: Present, Absent

2.2 If Present, concepts described to mention the opposite side of the debate:

(a) the traumatic and stressful nature of the event-related memories
(b) the successful storage of the information
(c) inconsistent with ordinary forgetting
(d) the inability to recall the memories for a period of time
(e) the mechanism of repression
(f) the mechanism of dissociation
(g) the inability to attribute the condition to physiological effects of a substance (e.g., alcohol or other drug of abuse, a medication) or neurological or other medical condition (e.g., traumatic brain injury)
(h) an unconscious block of the memories
(i) a conscious block of the memories
(j) the concurrence with other disorders (e.g., PTSD, DID, multiple personality disorder)
(k) whether the type of trauma is relevant to the occurrence of the phenomenon
(l) the idea of false memories and memory distortions
(m) memory suggestibility due to memory recovery techniques
(n) the misinformation effect
(o) the implantation effect
(p) fantasy proneness
(q) the idea of ordinary forgetting and normal memory mechanisms
(r) the childhood amnesia
(s) the evidence on emotional memories
(t) the functioning of autobiographical memory
(u) the idea of malingering

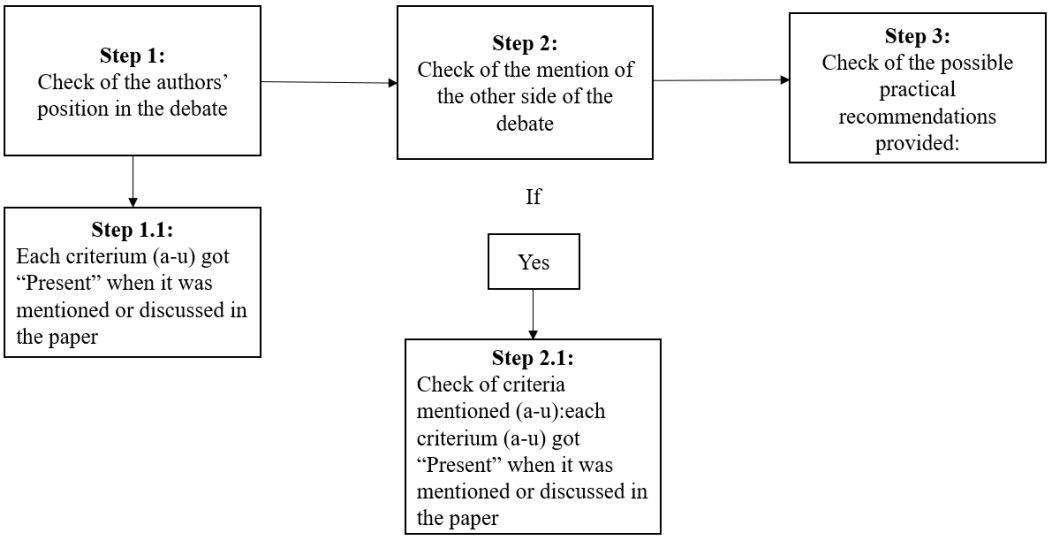
Part 3

3.1 Practical recommendations provided by authors: Present, Absent

3.2 If Present, the recommendations were categorized in:

Caution in practice and science-based guidelines
Need of adequate legal professionals' practice
Need of adequate legal professionals' training
Need of adequate psychotherapist's practice
Need of adequate psychotherapist's training
Need of adequate students' education
Need of adequate tools to evaluate truthiness
Need of clear definition of the phenomenon
Need of clear guidelines for clinical settings

Need of collaborations among practitioners
Need of corroborations
Need of IC with patient
Need of no misleading info among media
Need to evaluate each case
Need to take into consideration both phenomena in legal context
Research: Further investigation



Supplementary Materials

Literature Search

Step 1. Keywords used for the first step of the literature search on Web of Science:
"recover* memor*" OR "repress* memor*" OR "recover* memor* controversy" OR "recover* memor* debate" OR "repress* memor*controversy" OR "repress* memor* debate" OR "memory wars" OR "false memor*" OR "false memor* syndrome" OR "memor* distor*" OR "false memor* controversy" OR "recall of childhood abuse" OR "recall of childhood traum*" OR "suggestibility" OR "recover* memor* therap*" OR "repress* memor* therap*" OR "misinformation effect" OR "DRM" OR "Deese/Roediger-McDermott" OR "implantation effect" OR "eyewitness" OR "eyewitness memor*" OR "traum* OR "stressful event" OR "episodic memor*" OR "autobiographical memor*" OR "memor* for traum* event" OR "traum* event" OR "post?traum* stress disorder" OR "dissociat* identity disorder" OR "multiple personality disorder" OR "dissociat* identity disorder" OR "fantasy proneness" OR "dissociat* amnesi*" OR "amnesi*".

Step 2. Keywords used for the second step of the literature search on Web of Science and the complete literature search on Scopus:
"recover* memor*" OR "repress* memor*" OR "dissociative amnesia" OR "recover* memor* debate" OR "recover* memor* controversy" OR "repress* memor* controversy" OR "repress* memor* debate" OR "memory wars" AND "memor*".

Table S1. Number of publications on repressed memories by country. The table presents the first 10 countries, a table presenting all countries can be found on https://osf.io/z2xfg.

Country	Publications	MCP	SCP
USA	250	3	247
England	48	11	37
The Netherlands	41	20	21
Canada	38	2	36
Germany	12	5	7
Australia	10	2	8
Belgium	8	8	0
France	7	2	5
Israel	4	1	3
Italy	4	2	2

Note: SCP = Single Country Publications. MCP = Multiple Country Publications. When the first author was affiliated to different countries, the publications were counted as many times as countries of affiliations.

Analysis by Journal

An investigation of the number of publications by journals was performed. For each journal, the number of publications and the total global citation score (TGCS) were taken into account (i.e., the total number of times that publications were cited until the moment of the data search). We found that 176 journals published research on repressed memories. The three main areas of research were Psychology, Psychiatry, and Government & Law (see below Research Areas and Categories Analysis). Table S2 presents the 20 most productive journals on the topic of repressed memory. Interestingly, the journals with the higher amount of publications were not necessarily the same journals having the higher TGCS score. Indeed, the highest TGCS score (i.e., 1412) was reached by the *Journal of Traumatic Stress* posited at the ninth position of the most productive journals. Three journals (i.e., *Applied Cognitive Psychology*, *Consciousness & Cognition*, *Psychological Science*) of the top 20 productive journals also had a very good performance (i.e., from 760 to 645 citations), while three journals (i.e., *American Psychologist*, *Harvard Review of Psychiatry*, *Annual Review of*

Psychology, *Psychological Bulletin*) having a very good performance (i.e., from 830 to 440 citations) published only 2-3 papers (see: Additional Analyses on https://osf.io/z2xfg/).

Table S2. Number of publications by the 20 most productive journals and total global citation scores (TGCS).

Journal	Number of Publications	TGCS
Applied Cognitive Psychology	21	645
Memory	18	348
Professional Psychology-Research and Practice	14	195
Child Abuse & Neglect	12	414
Psychological Science	11	760
Psychology Public Policy and Law	11	195
Journal of Traumatic Stress	10	1412
Consciousness & Cognition	9	714
Ethics & Behavior	8	78
American Journal of Psychotherapy	7	56
Clinical Psychology-Science and Practice	7	87
International Journal of Clinical And Experimental Hypnosis	7	315
Law and Human Behavior	7	311
Canadian Psychology-Psychologie Canadienne	6	53
Journal of Abnormal Psychology	6	346
Journal of Child Sexual Abuse	6	32
Journal of The American Psychoanalytic Association	6	119
Journal of Trauma & Dissociation	5	35
Women & Therapy	5	26
American Journal of Psychiatry	4	296

Note: TGCS (i.e., total global citation score) was obtained by summing the citations of all the publications for each journal.

Table S3. The research areas and the specific categories of all publications and their respective number of publications.

Research Areas	Number of Publications	Research Category	Number of Publications
Psychology	318	*Clinical*	112
		Multidisciplinary	106
		Experimental	69
		Social	26
		Applied	19
		Educational & Developmental	11

		Neuropsychology & Physiological Psychology	2
Psychiatry	119	*Psychiatry*	119
Government & Law	45	*Law*	44
		Political Science	1
Neurosciences & Neurology	26	*Neurosciences*	12
		Neuroimaging	2
		Clinical Neurology	12
Criminology & Penology	22	*Criminology & Penology*	22
Social Work	20	*Social Work*	20
Health Care Sciences & Services	14	*Health Policy & Services*	14
Family Studies	15	*Family Studies*	15
Social Sciences – Other Topics	12	*Social Sciences, Interdisciplinary*	1
		Ethics	10
		History Of Social Sciences	1
Women's Studies	9	*Women's Studies*	9
Behavioral Sciences	6	*Behavioral Sciences*	6
Education & Educational Research	4	*Education & Educational Research*	4
General & Internal Medicine	4	*Medicine, General & Internal*	4
Biomedical Social Sciences	4	*Social Sciences, Biomedical*	4
Sociology	4	*Sociology*	4
Public, Environmental & Occupational Health	2	*Public, Environmental & Occupational Health*	2
Legal Medicine	2	*Medicine, Legal*	2
Nursing	2	*Nursing*	2
Social Issues	2	*Social Issues*	2
Pathology	2	*Pathology*	2
Area Studies	1	*Area Studies*	1
Environmental Sciences & Ecology	1	*Environmental Sciences*	1
Science & Technology – Other Topics	1	*Multidisciplinary Sciences*	1
Linguistics	1	*Linguistics*	1
Physiology	1	*Physiology*	1
Business & Economics	1	*Business & Economics*	1
Nutrition & Dietetics	1	*Nutrition & Dietetics*	1
Pediatrics	1	*Pediatrics*	1
Religion	1	*Religion*	1
Cell Biology	1	*Cell Biology*	1

Note: The number of publications was obtained by summing all the publications of each research area and/or category. When the publications had more than one research area and/or category, the publications were counted as many times as research areas and categories.

Table S4. The 20 most productive authors (on a total of 226 authors) in research on repressed memories. The number of single, multi, and first-authored publications are displayed.

Author	Total Publications	Single-Authored	Multi-Authored	First-Authored	Percentage (%)
Merckelbach, H.	28	0	28	4	6.78
McNally, R.J.	26	9	17	19	6.30

Loftus, E.F.	21	5	16	7	5.08
Geraerts, E.	13	0	13	10	3.15
Patihis, L.	13	0	13	4	3.15
Clancy, S.A.	11	0	11	3	2.66
Otgaar, H.	11	0	11	5	2.66
Lindsay, D.S.	9	1	8	5	2.18
Brewin, C.R.	8	2	6	5	1.94
Pope, H.G.	8	0	8	6	1.94
Andrews, B.	7	1	6	3	1.69
Markowitsch, H.J.	7	2	5	2	1.69
Read, J.D.	7	0	7	2	1.69
Schacter, D.L.	7	0	7	1	1.69
Dodier, O.	6	1	5	5	1.45
Lilienfeld, S.O.	6	0	6	2	1.45
Spiegel, D.	6	0	6	1	1.45
Raymaekers, L.	5	0	5	2	1.21
Smeets, T.	5	0	5	2	1.21
van der Hart, O.	5	0	5	3	1.21

Note: Percentages were calculated by considering all authors' contributions in the revised publications.

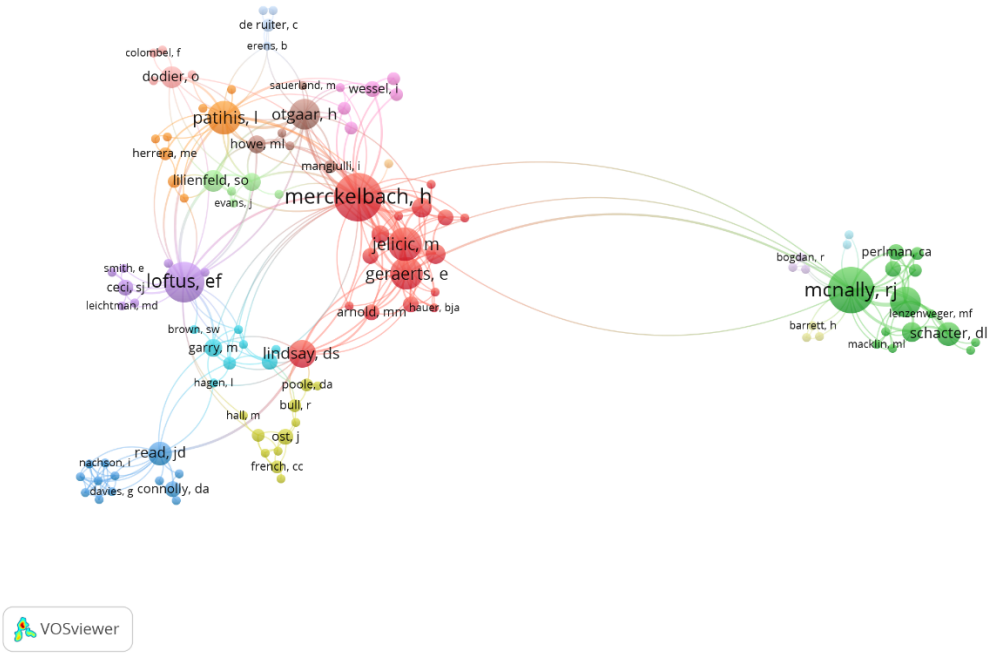


Figure S1. The co-authorship network.

Table S5. The number of citations by author for the top 20 cited authors.

Author	Number of Citations
Loftus, E.F.	1816
Van der Kolk, B.A.	1360
Briere, J.	1147
McNally, R.J.	1279
Anderson, M.C.	804
Lindsay, D.S.	689
Read, J.D.	583
Clancy, C.A.	553
Ceci, S.J.	526
Merckelbach, H.	525
Herman, J.L.	475
Gleaves, D.H.	425
Brewin, C.R.	407
Geraerts, E.	389
Spiegel, D.	386
Terr, L.C.	383
Schacter, D.L.	378
Dalenberg, C.J.	331
Brand, D.L.	310
Hyman, I.E.	287

Table S6. The 20 most cited publications.

Authors	Title of the Publication	Citations
Loftus, 1993	*The reality of repressed memories*	787
Anderson & Green, 2001	*Suppressing unwanted memories by executive control*	677
Van der Kolk & Fisler, 1995	*Dissociation and the fragmentary nature of traumatic memories - Overview and exploratory-study*	648
Van der Kolk, 1994	*The body keeps the score - Memory and the evolving psychobiology of posttraumatic stress*	622
Herman & Schatzow, 1987	*Recovery and verification of memories of childhood sexual trauma*	437
McNally, 2003b	*Progress and controversy in the study of posttraumatic stress disorder*	378
Briere, 1994	*Immediate and long-term impacts of child sexual abuse*	343
Terr, 1988	*What happens to early memories of trauma? A study of twenty children under age five at the time of documented traumatic events*	315
Hyman & Pentland, 1996	*The role of mental imagery in the creation of false childhood memories*	289

Lindsay & Read, 1994	*Psychotherapy and memories of childhood sexual abuse - A cognitive perspective*	288
Dalenberg et al., 2012	*Evaluation of the evidence for the trauma and fantasy models of dissociation*	286
Ceci et al., 1994b	*Repeatedly thinking about a non-event - Source misattributions among preschoolers*	246
Ceci et al., 1994c	*The possible role of source misattributions in the creation of false beliefs among preschoolers*	222
Ramachandran, 1995	*Anosognosia in parietal lobe syndrome*	209
Williams, 1995	*Recovered memories of abuse in women with documented child sexual victimization histories*	197
Porter et al., 1999	*The nature of real, implanted, and fabricated memories for emotional childhood events: Implications for the recovered memory debate*	188
Chu et al., 1999	*Memories of childhood abuse: Dissociation, amnesia, and corroboration*	182
Bremner et al., 1995	*Functional neuroanatomical correlates of the effects of stress on memory*	171
Brewin, 2007	*Autobiographical memory for trauma: Update on four controversies*	154
Lindsay et al. (2004)	*True photographs and false memories*	150

Table S7. The number of co-citations for the top 10 co-cited publications by the research categories of Clinical Psychology, Multidisciplinary Psychology, and Experimental Psychology.

Clinical Psychology			Multidisciplinary Psychology			Experimental Psychology		
Author	**Publication**	**Co-Citations Category**	**Author**	**Publication**	**Co-Citations Category**	**Author**	**Publication**	**Co-Citations Category**
Loftus, 1993	*The reality of repressed memories*	23 Multidisciplinary	Loftus, 1993	*The reality of repressed memories*	21 Multidisciplinary	Loftus, 1993	*The reality of repressed memories*	14 Multidisciplinary
Herman & Schatzow, 1987	*Recovery and verification of memories of childhood sexual trauma*	18 Clinical	Johnson et al., 1993	*Source monitoring*	9 Multidisciplinary	McNally et al., 2001	*Directed forgetting of trauma cues in adults reporting repressed or recovered memories of childhood sexual abuse*	7 Clinical
Briere & Conte, 1993	*Self-reported amnesia for abuse in adults molested as children*	14 Clinical	Williams, 1994	*Recall of childhood trauma: A prospective study of women's memories of child sexual abuse.*	8 Clinical	DePrince & Freyd, 2004	*Forgetting trauma stimuli*	7 Multidisciplinary
Williams, 1994	*Recall of childhood trauma: A prospective study of women's memories of child sexual abuse.*	13 Clinical	Loftus & Pickrell, 1995	*The formation of false memories*	8 Clinical	Anderson & Green, 2001	*Suppressing unwanted memories by executive control*	7 Multidisciplinary
Lindsay & Read, 1994	*Psychotherapy and memories of childhood sexual abuse - A cognitive perspective*	11 Experimental	Terr, 1991	*Childhood traumas: an outline and overview*	8 Clinical	Herman & Schatzow, 1987	*Recovery and verification of memories of childhood sexual trauma*	7 Clinical
Bernstein & Putnam, 1986	*Development, reliability and validity of a dissociation scale*	10 *	Bernstein & Putnam, 1986	*Development, reliability and validity of a dissociation scale*	8 *	Moulds & Bryant, 2002	*Directed forgetting in acute stress disorder*	6 Clinical
Freyd, 1996	*Betrayal trauma: the logic of forgetting childhood abuse*	9 *	Herman & Schatzow, 1987	*Recovery and verification of memories of childhood sexual trauma*	7 Clinical	Johnson et al., 1993	*Source monitoring*	6 Multidisciplinary
Clancy et al., 2000	*False recognition in women reporting*	8 Multidisciplinary	Pope, 1996	*Memory, abuse, and science: Questioning claims*	6 Multidisciplinary	Myers et al., 1998	*Repressive coping and the directed*	5 Clinical

	recovered memories of sexual abuse			*about the False Memory Syndrome epidemic*.			*forgetting of emotional material*	
Van der Kolk & Fisler, 1995	*Dissociation and the fragmentary nature of traumatic memories: overview and exploratory study*	8 Clinical	Lindsay & Read, 1994	*Psychotherapy and memories of childhood sexual abuse - A cognitive perspective*	6 Experimental	Williams, 1994	*Recall of childhood trauma: A prospective study of women's memories of child sexual abuse.*	5 Clinical
Williams, 1995	*Recovered memories of abuse in women with documented child sexual victimization histories*	8 Clinical	Briere & Conte, 1993	*Self-reported amnesia for abuse in adults molested as children*	6 Clinical	Clancy et al., 2000	*False recognition in women reporting recovered memories of sexual abuse*	5 Multidisciplinary

Note: The asterisk (*) indicates we were not able to retrieve the research category because the publications were a doctoral dissertation or a book.

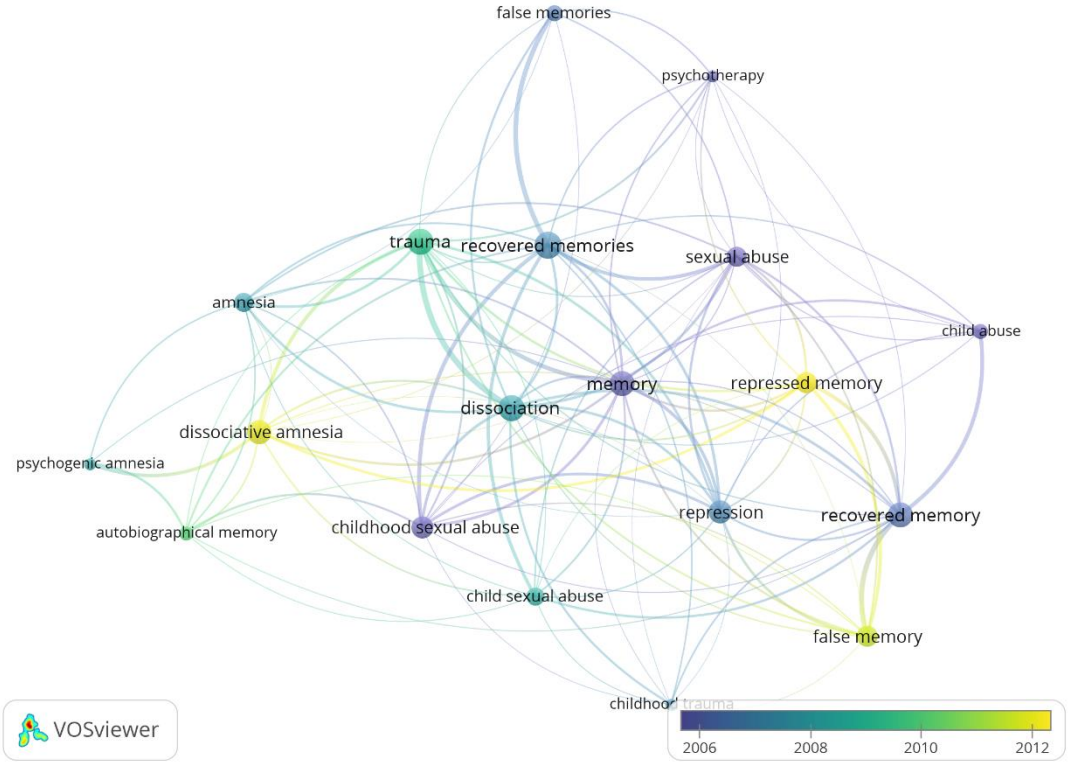


Figure S2. The Authors' Keywords network considering time influence.

Table S8 displays the percentage and the number of publications (in brackets) of each criteria mentioned when referring to the opposite side of the debate by categories.

	In Favour				Skeptical			
	Clinical	**Experimental**	**Multidisciplinary**	**Others**	**Clinical**	**Experimental**	**Multidisciplinary**	**Others**
Traumatic nature of the event	0.00	0.00	0.00	0.00	24.59 (15)	34.43 (21)	27.87 (17)	13.11 (8)
Successful storage	0.00	0.00	0.00	0.00	46.15 (6)	7.69 (1)	38.46 (5)	7.69 (1)
Inconsistency with ordinary forgetting	0.00	0.00	0.00	0.00	38.71 (12)	16.31 (5)	38.71 (12)	6.45 (2)
Inability to recall for a certain period	0.00	0.00	0.00	0.00	24.62 (16)	30.77 (20)	30.77 (20)	13.85 (9)
Repression	0.00	15.00 (3)	75.00 (5)	10.00 (2)	26.67 (20)	29.33 (22)	32.00 (24)	12.00 (9)
Dissociation	0.00	33.33 (1)	66.67 (2)	0.00	39.02 (16)	17.07 (7)	31.71 (13)	12.19 (5)
No physiological or medical conditions	0.00	0.00	0.00	0.00	25.00 (2)	25.00 (2)	50.00 (4)	0.00
Unconscious blocking	100.00 (2)	0.00	0.00	0.00	27.50 (11)	30.00 (12)	30.00 (12)	12.50 (5)
Conscious blocking	100.00 (2)	0.00	0.00	0.00	16.67 (1)	50.00 (3)	33.33 (2)	0.00
Co-occurrence with disorders	0.00	0.00	0.00	0.00	46.15 (6)	23.08 (3)	23.08 (3)	7.69 (1)
Type of trauma	0.00	0.00	0.00	0.00	75.00 (3)	0.00	25.00 (1)	0.00
False memories	52.38 (22)	2.38 (1)	35.71 (15)	9.52 (4)	0.00	0.00	0.00	0.00
Memory suggestibility	69.44 (25)	5.56 (2)	19.44 (7)	5.56 (2)	0.00	0.00	0.00	0.00
Misinformation effect	50.00 (1)	0.00	0.00	50.00 (1)	0.00	0.00	0.00	0.00
Implantation effect	55.00 (11)	10.00 (2)	15.00 (3)	20.00 (4)	0.00	0.00	0.00	0.00
Fantasy proneness	72.73 (8)	0.00	9.09 (1)	18.18 (2)	0.00	0.00	0.00	0.00
Ordinary forgetting	46.67 (7)	13.33 (2)	33.33 (5)	6.67 (1)	0.00	0.00	0.00	0.00
Childhood amnesia	25.00 (1)	0.00	50.00 (2)	25.00 (1)	0.00	0.00	0.00	0.00
Emotional memory	66.67 (4)	16.67 (1)	16.67 (1)	0.00	0.00	0.00	0.00	0.00
Autobiographical memory	100.00 (3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Malingering	66.67 (4)	33.33 (2)	0.00	0.00	0.00	0.00	0.00	0.00

Note: Percentages were calculated by dividing the number of publications of each category by the total number of publications for the considered criterium. The letters refer to each criteria stated by authors, to see the meaning of letters Appendix A, Part 2-2.1.

Table S9 shows the percentages and the number of the publications (in brackets) who reported the 16 recommendations detected by research categories and position in the debate.

	Clinical			**Experimental**			**Multidisciplinary**			**Others**			**Number of Publications**
	In Favour	**Skeptical**	**Neutral**	**In Favour**	**Skeptical**	**Neutral**	**In Favour**	**Skeptical**	**Neutral**	**In Favour**	**Skeptical**	**Neutral**	
Adequate clinical practice	15.91 (7)	15.91 (7)	11.36 (5)	0.00	2.27 (1)	4.55 (2)	13.64 (6)	9.09 (4)	9.09 (4)	6.82 (3)	4.55 (2)	6.82 (3)	44
Adequate clinical training	35.29 (12)	5.88 (2)	23.53 (8)	0.00	5.88 (2)	0.00	2.94 (1)	5.88 (2)	14.71 (1)	0.00	2.94 (1)	2.94 (1)	34
Adequate legal practice	18.75 (3)	6.25 (1)	0.00	0.00	0.00	6.25 (1)	12.50 (2)	12.50 (2)	12.50 (2)	12.50 (2)	0.00	18.75 (3)	16
Adequate legal training	0.00	0.00	0.00	0.00	33.33 (1)	33.33 (1)	0.00	0.00	33.33 (1)	0.00	0.00	0.00	13
Evaluation of each single case	30.77 (4)	0.00	23.08 (8)	7.69 (1)	0.00	0.00	7.69 (1)	0.00	0.00	0.00	0.00	30.77 (4)	12
Corroborations	0	8.34 (1)	16.67 (2)	0.00	0.00	0.00	0.00	16.67 (2)	33.33 (4)	0.00	8.33 (1)	16.67 (2)	13
Further research	23.08 (3)	23.08 (3)	15.38 (2)	7.69 (1)	0.00	0.00	15.38 (2)	0.00	7.69 (1)	7.69 (1)	0.00	0.00	10
Science-based practice	30.00 (3)	50.00 (5)	0.00	0.00	0.00	0.00	0.00	10.00 (1)	0.00	0.00	0.00	10	7
Informing patients	0.00	14.19 (1)	28.57 (2)	0.00	0.00	0.00	0.00	0.00	28.57 (2)	14.29 (1)	0.00	14.29 (1)	6
Collaboration among practitioners	0.00	16.67 (1)	16.67 (1)	0.00	16.67 (1)	0.00	0.00	16.67 (1)	16.67 (1)	0.00	0.00	16.67 (1)	3
Clear definition of the phenomenon	0.00	0.00	100.00 (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
Adequate students' education	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00 (1)	0.00	0.00	0.00	1
Adequate tools to assess veracity of memories	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00 (1)	0	0.00	0.00	0.00	1
Guidelines for clinical setting	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
Considering recovered and false memories both true	100.00 (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
No dissemination of wrong information	100.00 (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
	Clinical			Experimental			Multidisciplinary			Others			Number of Publications

	In Favour	Skeptical	Neutral	In Favour	Skeptical	Neutral	In Favour	Skeptical	Neutral	In Favour	Skeptical	Neutral	
Adequate clinical practice	15.91 (7)	15.91 (7)	11.36 (5)	0.00	2.27 (1)	4.55 (2)	13.64 (6)	9.09 (4)	9.09 (4)	6.82 (3)	4.55 (2)	6.82 (3)	44
Adequate clinical training	35.29 (12)	5.88 (2)	23.53 (8)	0.00	5.88 (2)	0.00	2.94 (1)	5.88 (2)	14.71 (1)	0.00	2.94 (1)	2.94 (1)	34
Adequate legal practice	18.75 (3)	6.25 (1)	0.00	0.00	0.00	6.25 (1)	12.50 (2)	12.50 (2)	12.50 (2)	12.50 (2)	0.00	18.75 (3)	16
Adequate legal training	0.00	0.00	0.00	0.00	33.33 (1)	33.33 (1)	0.00	0.00	33.33 (1)	0.00	0.00	0.00	13
Evaluation of each single case	30.77 (4)	0.00	23.08 (8)	7.69 (1)	0.00	0.00	7.69 (1)	0.00	0.00	0.00	0.00	30.77 (4)	12
Corroborations	0	8.34 (1)	16.67 (2)	0.00	0.00	0.00	0.00	16.67 (2)	33.33 (4)	0.00	8.33 (1)	16.67 (2)	13
Further research	23.08 (3)	23.08 (3)	15.38 (2)	7.69 (1)	0.00	0.00	15.38 (2)	0.00	7.69 (1)	7.69 (1)	0.00	0.00	10
Science-based practice	30.00 (3)	50.00 (5)	0.00	0.00	0.00	0.00	0.00	10.00 (1)	0.00	0.00	0.00	10	7
Informing patients	0.00	14.19 (1)	28.57 (2)	0.00	0.00	0.00	0.00	0.00	28.57 (2)	14.29 (1)	0.00	14.29 (1)	6
Collaboration among practitioners	0.00	16.67 (1)	16.67 (1)	0.00	16.67 (1)	0.00	0.00	16.67 (1)	16.67 (1)	0.00	0.00	16.67 (1)	3
Clear definition of the phenomenon	0.00	0.00	100.00 (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
Adequate students' education	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00 (1)	0.00	0.00	0.00	1
Adequate tools to assess veracity of memories	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00 (1)	0	0.00	0.00	0.00	1
Guidelines for clinical setting	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
Considering recovered and false memories both true	100.00 (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
No dissemination of wrong information	100.00 (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1

Note: The total number of publications is higher than the total publications where we detected recommendations (n = 118) because several publications reported more than one recommendation. Percentage were calculated by dividing the number of publications of each category by the total number of publications for the considered recommendation.

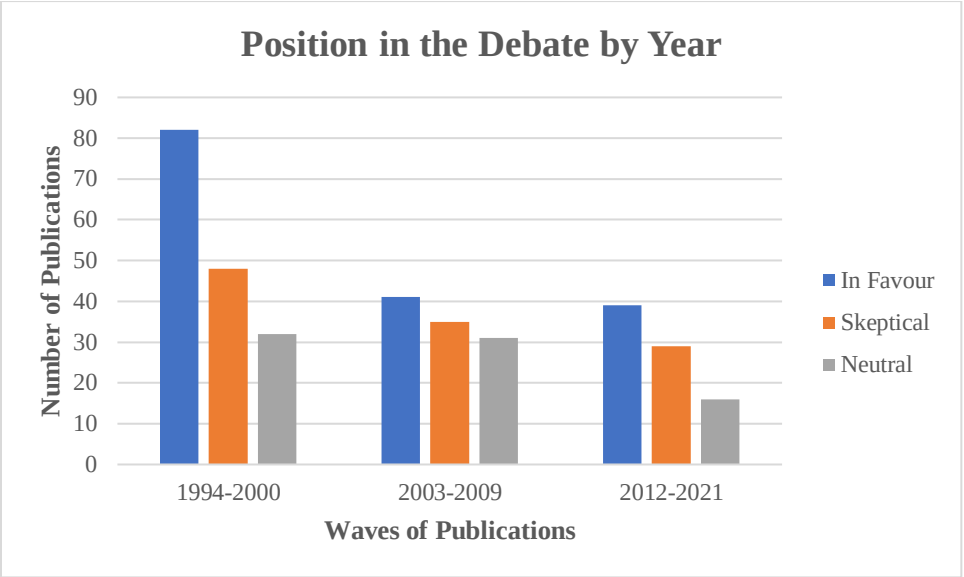


Figure S3. The number of publications by the authors' position in the debate (i.e., In Favour, Skeptical, Neutral) and the three waves of publications.