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**CURRENT THEORIES ON EARLY CHILDHOOD MEMORIES – A
SYSTEMATIC REVIEW OF THE LITERATURE**

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Abstract

Early childhood memories (ECM) represent an insufficiently tackled study domain, although it has triggered interest of the scientific community ever since the beginning of individual psychology. The purpose of this paper was to perform a systematic review of the specialized literature between 2000 and 2016, starting from research questions which cumulate the general and particular characteristics of the early ECM, to state the identification of efficient methods of recalling mnesic content from early childhood and to explore the causality relation between early childhood and the cognitive- emotional-affective behaviour of the individual. Out of the total 617 studies, 605 studies that did not meet the eligibility criteria were excluded, thus keeping for analysis a number of 12 full-text articles, which met the selection criteria. The results of the systematic review indicate the following: autobiographical/ chronological memories are developed during childhood and teenage years partly under the influence of speech abilities, self-awareness, social and cultural interactions; first born babies have earlier memories than their following siblings; qualitative recall of ECM appears to be conditioned by perceptive sensorial properties, but also by the intensity of the feelings. Also, there is a tendency to recall negative/ painful ECM and the process of recalling early memories may be affected by intra-therapeutic procedure flaws. ECM can be validated either as authentic, primary content, but they can also be the product of external influences, namely stories of family members, photos, other sources (secondary memories).

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Keywords: Childhood memories, early childhood memories, autobiographical memory.



1. Introduction

In analysing the *early childhood memories* (ECM) it is considered necessary to highlight the contribution of Sigmund Freud (2014) to this mental reality, which he included it under the umbrella of the *screen memory* concept. Freud defined *screen memories* as a complex mental product, which bears the appearance of coherent and unitary memory, whereas being composed of several, separate parts. *Screen memories*, appearing between the ages of 2 and 4 may contribute to forging memories to help repression and replacement of unpleasant or upsetting impressions. There are no memories *from* childhood, but *about* childhood (Freud, 2014). Adler (2010) used early *memories* as a projection technique and considered them as being “screens” behind which, there might be found significant, repressed events. When correctly interpreted by psychotherapists, they may point to, among other things, toward aspects defining the psychological life-style of an individual. These two psychoanalysts inspired subsequent studies regarding ECM (Raffai, 1995, 1998; Theiler, 2005; Crawley & Eacott, 2006; Rubin, 2000) and generated a series of theories with respect to them in the psychology of the individual.

For Adler, unconscious maladaptive processes are dynamically involved in revealing those contents stored in chronological, declarative memory (Miclea, 1999), thus accessible as autobiographical memory (Theiler, 2005). Bruhn (1985, 1990) combined the theory of *screen memories* coined by Adler with the memory theory and elaborated a cognitive- perceptive theory (CPT) or early childhood memories (Theiler, 2005). According to Bruhn (1985, 1990), ECM can offer an identity for/ about the self. For most people, events that occurred earlier than 2 years of age seem to be non-existent, (i.e. not being recallable). In case of recalling certain events, people evoking them cannot state for certain whether things which appear as images at the consciousness level really happened or if they have been heard stories of those events from familiar persons or relatives (Eacott & Crawley, 1998, 1999; Usher & Neisser, 1993; Crawley & Eacott, 2006).

In a quantitative study reflecting the distribution of autobiographical memories during the first decade of life, Rubin (2000) collects a number of 10118 memories taken from previously published studies on American men and women (20-70 years). Only 1,1 % of the respondents noted memories before the age of 3, with a strong increase of the distribution of existent memories after that age. Female participants could have more memories from before the age of 4 as compared to males, however this difference was not significantly clear, as the initial studies did not include variability measures (Rubin, 2000). The model of the multiple system of autobiographical memory developed by David Rubin (Rubin, 2006; Rubin, Schrauf, & Greenberg, 2003) stipulates the fact that memories appear as a result of a number of *component processes*: the integrative memory system, particular individual images, multimodal space imagery, language, narrative reasoning and emotions.

Qualitative recall of ECM seems to be conditioned by the perceptive sensorial characteristics (Brewer et al., 1999; Johnson & Raye, 1981), but also by the intensity of feeling (Hashtroudi, Johnson, & Chrosniak, 1990; Johnson, Foley, Suengas, & Raye, 1988). The age of 3.6 years represents the age from which adults appear to recount events before or after the birth of a younger sibling (Kihlstrom & Harackiewicz, 1982; Mullen, 1994; West & Bauer, 1999). Also, there are studies indicating that memories from before the age of 3,6 years are quite frequent (Eacott & Crawley, 1998; Usher & Neisser, 1993). Similarly, ECM from around the age of 2,4-3,5 years old appear to not differ qualitatively from the ones at

3,6-5,5 years old. Crawley & Eacott (2006) show that it is not unusual for subjects who remembered events from an age lower than 2.3 to believe that they relieved something from their past. Research performed upon autobiographical memory highlighted the prevalence of negative ECM over the positive ones, the phenomenon receiving the name of *memory bias*.

The tendency to recall rather negative than positive information/ content was correlated with the genetic propensity to depression (Vrijzen et al., 2015). Literature indicates that the genotype which is prone to depression (polymorphism 5-HTTLPR of serotonin carrier) is associated with styles of processing negative information, specifically in cases of combination with traumatic events from childhood (e.g. loss of one parent) or interpersonal childhood traumatic events (e.g. physical/ mental or sexual abuse). Memory bias may influence the alteration of the recalled content by the so called *pink recollection* (i.e. events perceived in a more positive light than how they really occurred) or by almost entirely modifying the memory of a painful event (Mathews & MacLeod, 2005).

Early childhood *amnesia* is considered by some researchers as a universal phenomenon (Freud, 2014; Rubin, 2006; Tustin & Hayne, 2010) and seems to identify with a limited number of autobiographical memories, starting with the first years of life (Bauer & Larkina, 2013; Hayne & Jack, 2010; Bauer, Tasdemir-Ozdes, & Larkina, 2014). Young adults who have lived a painful separation experience of their parents before the age of 7 have earlier autobiographical memories as compared to young adults whose parents separated later or were not separated at all (Artioli & Reese, 2014). Those individuals who were raised in families having many members appear to have memories with small time- windows between them (Artioli et al., 2012; Artioli & Reese, 2014).

The theory of *transition memory* stipulates that autobiographical memories are organized around major transitions in life (the end of a life phase, anticipation of another life phase), which might activate the recall of ECM at consciousness level (Brown, Schweickart, & Svob, 2016; Svob & Brown, 2012; Artioli & Reese, 2014). The capacity to store autobiographical memories appears to be developed during early childhood partly under the influence of linguistic abilities, self-awareness, social and cultural interactions (Nelson & Fivush, 2004) and it is not complete until teenage years, until the narrative function is acquired (Crane et al., 2014). The fact that an individual describes a traumatic event does not guarantee the fact that the memory is authentic (Laney & Loftus, 2005). Memory is considered to be flexible, and the details can be distorted; false memories can be fully implanted (Laney & Loftus, 2005). Implanting a false memory can be a consequence of extraction by psychotherapy specific tools, mainly applied problematically, of supposedly painful content (Poole et al., 1995). Another mental phenomenon which can affect ECM is the *overgeneral autobiographical memory* (Crane et al., 2014), namely the propensity to take over and narrated memories of events from the personal past in a generalized manner, lacking specific details of the event. Repeated exposure during early childhood to traumatic events may be a risk factor for the appearance and development of the overgeneral autobiographic memory.

Another characteristic taken over in a recent study was the *consistency of early memories* (Bauer, Tasdemir-Ozdes, & Larkina, 2014). With respect to individual differences, the reports include memories from around or before the age of 2 years (Henri & Henri, 1898; Jack & Hayne, 2010; Rubin, 2000; Usher & Neisser, 1993; West & Bauer, 1999; Bauer, Tasdemir-Ozdes, & Larkina, 2014). On the opposite pole, most subjects place their oldest memory at the age of 6 or later (Bauer, Stennes, & Haight, 2003; Bauer,

Tasdemir-Ozdes, & Larkina, 2014). There are people who can remember many events from their early childhood, whereas other people recall only a few (Jack & Hayne, 2010; Weigle & Bauer, 2000; West & Bauer, 1999, Bauer, Tasdemir-Ozdes & Larkina, 2014). With respect to group differences, we need to note that women have more early memories than men (Mullen, 1994; Bauer, Tasdemir-Ozdes & Larkina, 2014). Two limitations of the study are reported: a) the participants were only women, sampling being made starting from the fact that women engage more easily in conversations about events from the past as compared to men; b) re-narrations can contribute to consistency (Barnier et al., 2005; Stone et al., 2010; Winningham et al., 2000; Bauer, Tasdemir-Ozdes, & Larkina, 2014).

2. Problem statement

Early childhood memories represent an insufficiently tackled study domain, although it has triggered interest of the scientific community ever since the beginning of individual psychology. In line with the needs for summarizing the definitions and the methods of investigations existent in literature, this study aims to perform a systematic review of the specialized literature between 2000 and 2016. The systematic review starts from the research questions, which cumulate the general and particular characteristics of the early ECM, aiming to identify the efficient methods of recalling mnemonic content from early childhood and to explore the causality relation between early childhood and the cognitive- emotional-affective behaviour of the individual.

3. Research questions

In order to identify the mental mechanisms which lay the foundation of the explicit memory functioning, the means of recalling mnemonic content from the early stage of existence, as well as the aspects mentioned in the mnemonic recall process protocols reported in rather recent empirical studies, the following *questions* offered a guideline to our research: (1) What is the argumentative content of the latest studies with respect to the *early memory* paradigm? (2) What are the most common and most efficient methods of recalling mnemonic content from early childhood?

4. Purpose of the study

The purpose of the study was to perform a systematic review of specialized literature from between 2000 and 2016, with respect to ECM and to identify the methods (as listed in the literature) for recalling early and very early memories.

5. Research Methods

The studies investigating the field of interest, namely early memories were identified by the usage of the following key words: *childhood memories*, *early childhood memories*, *autobiographical memory*, *childhood amnesia*. In the planning phase of this study, we made a review of the research requirements (in order to establish the need for such a review), followed by drafting a research/ review and elaborating the research questions, as suggested by the specialised literature systematic review process (Judi & Sahari, 2013). This research algorithm facilitates access both to the current scientific knowledge database, offering

a high perspective over the envisaged research area, as well as to those cognitive and mnemonic aspects deemed to be unsolved, but which can be investigated within future research (Cooper, 1998).

Potentially relevant studies were identified using the following search engines: Einformation, ANELiS (<http://www.anelis.ro/>) and AnelisPlus (<http://www.anelisplus.ro/>), securing free access to a wide range of scientific databases, such as: Cambridge Journals, Emerald Management Journals 200, ScienceDirect, Springer Link Journals, Wiley Blackwell, ProQuest Central, OVID LWW High Impact Collection, Oxford University Press, Emerald Group Publishing, American Institute of Physics, Taylor and Francis, EBSCO Academic Search Complete, EBSCO Business Source Complete, SAGE, Thomson ISI and SCOPUS, Reaxys Elsevier, ScienceDirect Freedom Collection Elsevier, Web of Science - Core Collection, Wiley Journals. We used the following search key words: "early childhood memories", "childhood memories", „autobiographical memory" and „childhood amnesia". The search included all conferences, dissertations, articles published in specialized magazines between 2000 and 2016.

The selection criteria for including the studies in the systematic review were the following: (1) Published articles in Romanian or English languages; (2) Published articles between 01.01.2000 – 31.12.2016; (3) The quality of being peer review journal articles, conference proceedings or dissertations, (4) Allowed access to full text. Initially, a number of 617 studies were identified, with a remaining number of 612 records after eliminating the duplicates. During the selection phase, out of a total number of 612 works 589 were excluded, leaving 23 full articles. In the eligibility checking phase, a total of 11 full-text articles were excluded, leaving 12 eligible studies to be included in the qualitative summary. The 11 articles were excluded due to the following reasons: they referred indirectly to the “early memories” component; they were correlated with other mental particulars from the pathology field, the subjects were children, the expression was used in other ancillary domains (medicine, psychiatry, neurology and genetics). The selection process is illustrated below in Figure 1, made by using the PRISMA Flow Chart (Moher et al., 2009).

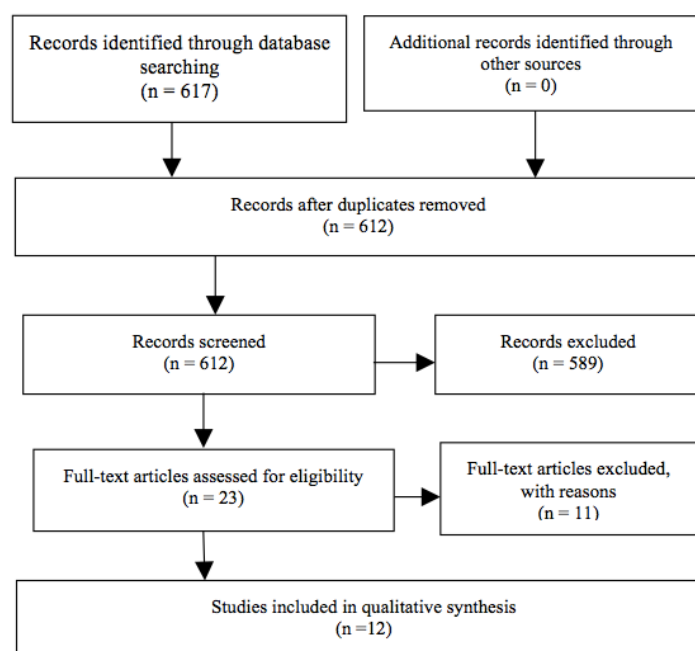


Figure 01. PRISMA Flow Chart for the selection process of the articles investigating the ECM.

6. Findings

Research question 1: What is the argumentative content of the latest studies with respect to the *early childhood memory* paradigm?

Partly, the review of specialized literature confirms the general assertions of Freud (2014) and Adler (2010) regarding *early childhood memories*. Memories may be screens behind which the forgotten elements of the experience are hidden; thus, they cannot be considered childhood memories but memories about childhood (Freud, 2014). Abiding by the *multiple system model* developed by Rubin, Schrauf & Greenberg (2003) of ECM validation, recalling memories from before 3 years of age may be a trust undertaking (*note*: accessing long term memory; recalling the information in long term memory is done in parallel, Miclea, 1999), but also information from other sources may arise. In this case, early memories are considered secondary memories (Crawley & Eacott, 2006). The review indicates that if Freud appeared to minimize the importance of the early memories based on his belief that they cannot necessarily be correctly and completely accounted for, on the contrary, Adler, granted special attention to these memories and capitalized them as they are by means of projective techniques. ECM may contribute to strengthening of self-identity (Bruhn 1985, 1990; Miclea, 1999). Perceptive sensorial characteristics (Brewer et al., 1999; Johnson & Raye, 1981), but also the intensity of feelings (Hashtroudi, Johnson, & Chrosniak, 1990; Johnson, 1988; Johnson, Foley, Suengas, & Raye, 1988) assure qualitative mnesic recall. Table 1 contains a summary of the early memory characteristics, explicit, declarative/ chronologic memory, identified in specialized literature.

Table 01. Identifying early memory characteristics based on the literature review.

Early memory characteristics
1. ECM are impersonal, “screen” mnesic products, acquired by means of third parties. They can hide valuable information about important repressed events.
2. <i>Screen memory</i> may contribute to counterfeiting memory in order to help repression and replacing upsetting or unpleasant experiences.
3. <i>Feeling expression method</i> revealed by early childhood memories seems to be aligned to the real sense of memory and not necessarily to that verbal or figurative content.
4. Early memories are an integrant part of self-identity.
5. Chronologic/ autobiographical memories are developed during early childhood partly under the influence of linguistic abilities, self-awareness, social and cultural interactions and it is not complete until teenage years, when the narrative function is acquired.
6. Birth order is correlated with the age of the oldest/ earliest memory. The first-born children have earlier memories than subsequent children.
7. Qualitative recall of early memory is conditioned by the perceptive sensorial characteristics, as well as by the intensity of the feelings.
8. It was noted a propensity towards recalling painful/ negative early memories.
9. Female participants appear to more clearly recall the events incurred before the age of 4,5 as compared to male participants.

Research question 2: What are the most common and most efficient methods of recalling mnesic content from early childhood?

In some of the reviewed studies, psychologists find useful Adler's projective method (2010), which starts from the simple question (flashback) "What is the earliest memory which comes to your mind? / Would you like to remember anything specific from before the age of age of 7?" followed by other questions derived from the responses of the beneficiary/client. Also, often used is the *Early Memories Inventory* (Theiler, 2005), which contains 4 open questions, namely clear instructions facilitating memory recall and the emotional experiences associated with the memory. The interview technique is most frequently used (frequency: 5 studies of the 12 accepted ones as being compliant with the eligibility criteria).

The presumptive conclusion is that the recovery of early memories should involve, favouring qualitative recall, the confirmation of details with the participation of those who were witnesses or subjects to the recalled event, which can be a really difficult undertaking to be performed in practice: 1) one of the persons directly or indirectly involved in the event may not be available for interview; 2) the mental state of some of these subjects/-witnesses may be impaired due to biological/ neurological reasons (old age).

Table 02. Identifying psychological methods for early memories/ autobiographical memories recall

Early memories recall methods

- Projective technique "Adler" (flash back).
 - Interview technique (open questions), which includes details and characteristics of the recalled event.
 - Early Memories Inventory (Theiler, 2005).
-

7. Conclusion

This article used the *systematic review* protocol for the analysis of twelve studies published between 2000 and 2016, which met the eligibility criteria for being included in the systematic review. The results reveal the preoccupation of the academia towards the content of early/ autobiographical memory. Limitations were noticed with respect to the early memory recall process, questioning the degree of confidence towards the remembered/ recalled content. The fact that only 1% of an extended sample (an to a certain extent vulnerable considering the fact that all participants were women) recall memories before the age of 3 (Rubin, 2010), raises questions about the barrier of *early childhood amnesia*, in fact the biologic and neurological barrier, considering the fact that the hippocampus, which facilitates chronological storage of facts is not completely developed before the age of 2 or 3. Another question to be answered in the future studies refers to the painful early emotional contents stored in the implicit memory work and how they influence the adults' behaviour.

Literature emphasizes the fact that recalled early memory has a reference/ correlation relationship with the cognitive schemes of Young, Klosko & Weishaar (2003). The author elaborated the *early maladaptive cognitive schemes* which he defines as being emotional and cognitive patterns comprising memories, emotions, cognitions and bodily sensations, developed in childhood or adolescence, which start very early in ontogeny. Cognitive schemes are usually self-subversive and repetitive throughout the life of the individual (Young, Klosko, & Weishaar, 2003). It is the opinion of Young, Klosko & Weishaar (2003) that early painful events may influence cognitive and emotional behaviour of the adult; namely, whatever was not internalized (accepted, understood, forgiven), might interfere with the inherited and acquired fears/

anxieties, might exacerbate a mental state and might invalidate the biologically mature individual. Further research will focus on an extended review of the early memory concept, planning to: (1) identify assessment resources and tools for early qualitative memories which might differentiate them from the “screen memories”, obtained from secondary sources; (2) correlate the mental imagery of the recalled event with the emotion behind the memory; (3) identify areas of maladaptive influence of these memories upon the quality of the individual’s life.

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