Research article / Научная статья

Discursive designing of autobiographical memories in speech ontogeny: Longitudinal survey

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Abstract
Autobiographical memories have been investigated, experimentally rather than in real interactional settings. This study explores the role of language in mental processes through the linguistic explication of memories in discursive practices in early ontogenesis. It considers the ways and means of early oral memories evolvement in the interdisciplinary paradigm. The goal is to identify the mechanism of early discourse formation in recalls. The data were collected from the multimedia corpus CHILDES Transcript Browser with speech transcripts of German-speaking children from three to seven years old and were subjected to communicative, pragmatic, cognitive and discursive analyses. Adults’ verbal discursive strategies and tactics were examined to explicate the mnemonic content of children’s narratives. We identified the pragmatic orientation of stimulating statements of adults and described the linguistic features of a child’s mnemonic utterances. It has been found that the main discursive strategies of adults prompting children are: the strategy of discursive socialization, the strategy of dialogic narrative with its further transformation into a mnemonic narrative and information extraction from memory. As a result, the psycholinguistic (verbal) model of the ontogenetic generalization of childhood memories typical for German-speaking communication partners was developed. The model includes six stages according to the age of a preschooler. It displays the evolution of the surface structure of mnemonic utterances-recollections, which make up the framework of primary autobiographical narrations. This research fills in the niches in discourse studies, in ontogenesis and in the primary and secondary text models. The findings may have practical application in corpus and empirical studies.

Key words: autobiographical memory, recollections, mnemonic activity, speech ontogenesis, narratives, discursive strategies and tactics

For citation:

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Дискурсивное конструирование автобиографических воспоминаний в речевом онтогенезе: лонгитюдное наблюдение

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Аннотация
До настоящего времени ранние автобиографические воспоминания изучались не в условиях реальной коммуникации, а экспериментальным путем. В данной работе исследуется роль языка в мыслительных процессах, связанных с языковой экспликацией воспоминаний в раннем онтогенезе в дискурсивных практиках. Рассматриваются способы и пути формирования ранних устных воспоминаний в междисциплинарной парадигме. Цель исследования — выявить механизмы становления раннего устного дискурсивного рассказа-воспоминания. В качестве материала использованы данные мультимедийного корпуса CHILDES Transcript Browser с транскриптами речи немецкоязычных детей в возрастном интервале от 3 до 7 лет. Для их анализа применялся коммуникативно-прагматический и когнитивно-дискурсивный анализ. Исследованы дискурсивные стратегии и тактики взрослых по экспликации мнемического содержания детских нарративов, выявлена прагматическая направленность стимулирующих высказываний взрослых, описаны языковые особенности мнемических высказываний ребенка. Результаты исследования показали, что основными дискурсивными стратегиями взрослых выступают: стратегия дискурсивной социализации, стратегия обучению конструирования дискурсивного диалогического нарратива, а затем мнемического нарратива с тактикой извлечения информации из памяти. Результатом работы явилась психолингвистическая (вербальная) модель онтогенетической генерализации детских воспоминаний, характерная для немецкоязычного ребенка. Модель включает 6 этапов в соответствии с возрастом дошкольника и отображает развитие поверхностной структуры мнемических высказываний — воспоминаний, являющихся каркасом первичных автобиографических нарративов. Работа заполняет ряд нерешенных вопросов в области дискурсологии и нарратологии, расширяет представление о специфике порождения устного рассказа в речевом онтогенезе, моделях построения первичных и вторичных текстов и может найти практическое применение в корпоративных и эмпирических исследованиях.

Ключевые слова: автобиографическая память, воспоминания, мнемическая деятельность, речевой онтогенез, нарративы, дискурсивные стратегии и тактики

Для цитирования:

1. Introduction

Recollection as well as memorization and forgetting are basic productive mnemonic processes. The results of mnemonic activity are encoded in either written texts or oral narratives and in this way are preserved and transmitted in discursive practices from generation to generation. Recollection, memorization and forgetting

There are a number of reasons that make this research relevant. Firstly, there are almost no comparative studies on such important issues as the formation and functioning of autobiographical memory and autobiographical story in ontogeny in European and Slavic languages and cultures. Secondly, there is a problem of identifying units of autobiographical memory analysis. As the findings on children’s unprepared oral retellings (secondary texts) show, the empiricism of life experience (as an integral element of the generalized model) wedges into retellings and triggers the production of the narrative lines and episodes missing in primary texts (Petrova & Solnyshkina 2021, Petrova & Privalova 2023).

We need to gain insights into the mnemonic story mechanisms and narratives about past events that are produced at the early stages of ontogenesis. It is worth while taking into account children’s cognitive and language skills. Spontaneous unintentional interactions between adults and preschool children are in the focus of our attention. Importantly, early mnemonic autobiographical story has never been examined before with the combination of methods of conversational analysis (Gesprächsanalyse), pragmalinguistics and discourse analysis. We assume that an autobiographical story is an objective expression of the psychological component of I-personality. An autobiographical story is guided, on the one hand, by the norms of speech and, on the other hand, by the psychological memory mechanisms.

The research hypothesis is that in spontaneous interaction, children’s mnemonic narrative develops spontaneously without any intentional help from adults. On the other hand, one cannot deny the importance of adults’ support, such as emotional approvals, game combinations, etc. Adults’ mnemonic strategies and tactics, which are verbalized in mnemonic utterances, contribute to the designing of autobiographical mnemonic narrations in early ontogenesis.

The main research questions are as follows: 1. Is the development of memory in early ontogenesis reflected in child’s verbal reactions? 2. Is it possible to identify stratagem and tactical adult techniques in communication with children, since they
contribute to the formation and development of their mnemonic activity in narratives?

2. Theoretical considerations

There are three important theoretical approaches that have proven to be quite effective in our work with experimental material.

1. The cognitive-communicative approach is based on the theoretical principles of cognitive linguistics and communication theory since memory is believed to be a language-mediated, socio-communicative construct.

2. The pragmalinguistic approach with the discourse analysis method is justified as we analyze transcripts of speech events in ontogenesis in combination with various longitudinal observations. The pragmalinguistic approach is understood (in a broad sense) as an integral research area of linguistic communication with its specific functional, situational, and socio-cultural context.

3. Speech Act Theory goes hand in hand with communicative discourse analysis since the illocutionary purpose of an utterance is revealed in the context of a subsequent speech act. Only in terms of Speech Act Theory is it possible to consider such parameters as psychological conditions, illocutionary force intensity, communicants’ status, discourse links, and propositional content.

Mental representations reflect mnemonic content and undergo double coding in the process of verbalization. At the initial stage, mental representations in the universal subject code are translated into an intermediate code. Then, this intermediate code is translated into external speech. Thus, a mnemonic utterance stands out as an obligatory component of the mnemonic situation. It is the result of double coding of a mental representation of a personally significant experience in memory.

The cognitive-communicative approach is effective for research of the linguistic features of utterances that consolidate the work of individual memory in verbal form. These approaches take into account various communicative factors, for example, the number of participants in interaction, the synchronism/asynchronism of their communicative actions and the channels for messages transmission. This approach also allows us to obtain data about explication of mnemonic content in linguistic signs under certain cognitive and communicative conditions. In addition, it determines the presence/absence of a certain method of memory verbalization and the communicative situation. An utterance is regarded as mnemonic only if it is generated in situations of storing information in memory, restoring or losing information from memory. These situations are the communicative conditions for verbalization of the corresponding mnemonic processes (Tivyaeva 2018: 114). In accordance with the specified criteria, the utterances under consideration encode a mental representation that reflects the mnemonic experience of a mnemonic situation (MS) of a participant. Such utterances have thematic homogeneity and include lexico-semantic and grammatical indicators of mnemonic processes.
2.1. Theoretical and methodological issues of the study of autobiographical memory and mnemonic activity in ontogenesis

The model of long-term memory includes three subsystems: episodic, general and autobiographical. According to Nelson (Nelson 1991), episodic memory is the first to develop in ontogenesis: it acts as a buffer fixing specific episodes. As children develop verbal thinking, the episodes of their memory get generalized and their specificity is lost. By the time the autobiographical memory is completely shaped (3–4 years old), a child already has a stock of specific episodes of the past (episodic memory) and an idea of typical events of a person’s life (general memory) (Qi Wang 2016). Autobiographical memory evolution is a gradual process that starts in early childhood and passes on through late adolescence. Autobiographical memory emerges early and undergoes progressive onset (Bauer et al. 2019). Sociocultural approach is thought to be one of the most productive and heuristic approaches to the study of AM. Within this approach, AM is an ontogenetic neoplasm that has culturally specific forms developing through social interactions. Conditioning and reproduction of scattered events of a child’s life occur at the initial stage of AM generation. Then, a new macrostructure comes into light. This macrostructure is largely determined by internalized cultural schemes and scenarios that organize mnemonic material into interacting systems of “life periods”, “life themes” and “personal stages”. Additionally, AM is believed to be a product of the development of episodic memory, where the specification of the time and place of the event is significant (Nourkova 2008).

The analysis of the initial level of a child’s early involuntary forms of memory through discursive practices with adults has demonstrated that:

1) **Memory genesis is associated with the brain interhemispheric structures development** (Devinsky 2000, Luriya 1998).

2) **Autobiographical memory evolution is closely connected with the development of speech and storytelling competences in ontogeny.** Language acquisition is a complex process that covers all language levels – phonology, grammar and vocabulary. All competences make up the pool of basic indicators, which also include the competence of writing (Petrova 2010: 325). The following indicators singled out include: phonetic-phonological, pragmatic (first level), semantic, morphological-syntactic, discursive, pragmatic (second level), orthographic (first level) and orthographic ones (second level) (Referenzrahmen zur... 2008: 18–21). By the term ‘discursive indicators’ we mean the main structures of formal speech communication, that are used as ‘shifters’ of communication moves and tactics. The pragmatic indicators of the first level operate among family members and “stand idle” in school communication. The rise of the storytelling competence is characterized by certain ontogenetic stages and is connected with a preschooler’s discursive skills development. It is closely related to the improvement of a child’s mental operations, which are gradually taking on a linguistic form (Petrova et al. 2023). The following age stages are crucially important for the genesis of all types of retelling (descriptions of pictures, recalling,
autobiographical stories, etc.): at 3;05 years of age, the development of story-presentation takes place. It is hard to say what kind of narration is presented – something between a story, description and retelling. At 5;00 – 6;00 years of age, alongside with a broad story-exposition, there are attempts of detailed narration, in which the experienced events find their clear linguistic embodiment. At 7;00 – 8;00 years of age, the story-experience-memory is recorded with an increasing flexibility in the use of linguistic means. From 9;00 years of age onwards, there is a growing variety of emotional qualifications of the story. There is also an expansion of the subject-predicate grid of sentences with actant markers and connectors for expressing causal and temporal relationships. As for narrative competencies, at this stage it is possible to observe a lot of improvements.

3) **Autobiographical memory evolution is linked with the formation of a multi-valued self-image and self-concept.** The image of self is a holistic entity and, due to its complexity, a person is not fully aware of oneself and the boundaries of one’s self-actualization. At the early stages of ontogenesis, there is an integral perception of the world and oneself as its inseparable component. At the same time, there appears the feeling of “oneself” standing apart from the world with further creation of self-image as the highest mental instance (Vygotsky 2017). By and large, a child’s perception of other people and things gives him a possibility to implement his accumulated social experience in activities, which correspond to mental and personal development.

4) **Autobiographical memory evolution is associated with the development of cognitive and speech abilities of a child.** Numerous observations by the authors as well as other scholars (Luriya 1998: 92, Gorelov 2003: 30–31) indicate that the development of a child is characterized by asynchronization of speech and mental processes. Our findings show that maximum two meanings of one lexical unit are acquired by children and they are precisely those that are used by their adult interlocutors. Therefore, understanding all text units does not necessarily lead to the understanding of the whole text. This is also true in relation to the earlier stages of ontogeny, when adolescents are faced with the need “to find clothes” for their memories in written or oral language form. Hence, autobiographical memory which is realized as a set of memoirs must undergo cognitive and speech evolution.

5) **A child’s autobiographical memory develops in the process of communication and dialogue interaction with adult partners who contribute to discursive competence acquisition.** The way parents talk with their children is a consistent contribution to co-constructed autobiographical narratives in early childhood. Investigating the genesis of the autobiographical story, Nourkova (2012) confirms Nelson’s hypothesis (Nelson 1991, 1993) about overcoming childhood amnesia and the initial stages of early memories, dating the average age of the first memory to 3 or 3 and a half years of age. They describe the overcoming of childhood amnesia as the “model of social interaction”, in other words, a dialogue between a mother and a child. Up to 3 years of age, this model does not include a child’s appropriate response to an adult’s speech stimuli. For example, there may
be no adequate response to a request to speak about a past event. An adult has to intuitively and emotionally focus a child’s attention on the most important details of the past. An adult’s involvement in the interaction helps to create certain memory images and to arrange complex structures of the autobiographical story. In brief, AM is an independent type of memory, within which autobiographical reminiscences act as its organizational units. Also, our findings confirm that an adult with an established AM transmits it to a child. Meanings and personal connotations of the perceived information are also built over the sensory basis of interaction between a child and an adult. AM functions as an autobiographical element in this triad.

Our findings have proved that children adopt the model of recalls from their parents at the initial stages of autobiographical memory development. Meanwhile, one clarification has to be made at this certain point: parents try to conceptualize children’s memories highlighting the most vivid (in their opinion) events of the recent past. The following strategy is quite effective: “Tell me what you saw yesterday, where you were yesterday”. This is a didactic type of interaction with an adult. However, we have not yet recorded any cases of tireless repetition of one and the same story by a parent to a child. Children rather absorb models in spontaneous dialogues during everyday activities, when a parent and a child jointly participate in the communication process. Such activities are accompanied by verbal description rather than by drilling in certain schemes of narrations.

Summing up, our survey has proved the hypothesis that the main type of interaction in the ‘child-adult’ pair is the developing didactic type, which is controlled by an adult with the help of questions and prompts; moreover, this type of interaction gives the autobiographical memory the sense of independent activity (Nourkova 2012). The didactic type of dialogue interaction manifests itself in spontaneous in-home dialogues between an adult and a child during routine everyday operations, such as joint game activities, reading books, making toys, bricolage, etc.

3. Material and methodology

The material of our study are audio recordings of spontaneous dialogues between German-speaking adults and four children. These recordings are presented as transcripts in the multimedia corpus CHILDES Transcript Browser (Child Language Data Exchange System) (childes.psy.cmu.edu/browser/index.php). CHILDES is an abridged version of the full Rigol corpus, which consists of a total of 21 children. We have analyzed the discourses of four children in 134 audio and video recordings with a total duration of 67 hours. Each audio and video recording lasted from 20 to 30 minutes and was transcribed using the methods developed in the project (Project Description: childrenes.talkbank.org/access/German/Password/Rigol.html). In our study, we use fragments of transcripts of one German-speaking boy with the mask “Sebastian” in the age spans of 3;02.12 – 6;09.11. His recordings started at the age of 2;01.12. During the first 5 years of his life, recordings were
made of spontaneous interactions only. As the boy approached school age, elicitation tasks were recorded as well. In Sebastian’s autobiographical memories, we consider the most typical examples. Such type of analysis is recommended for longitude studies in early ontogenesis and meets the requirements of children’s speech observation (Stern, Gvozdeva).

The main methods of analysis are:

1. Discourse analysis with characteristics of the micro and macro context of interaction and parameters for studying the interactive and emotional components of speech situations.

2. The functional pragmatics method with techniques for interpreting and reconstructing statements and determining their illocutionary orientation.

Communicative and cognitive principles turned out to be the main criteria for selecting transcripts for further research. In accordance with these principles, a minimal dialogic unity (text fragment) represents a linguistic embodiment of a mnemonic situation (MS). The MS includes several mandatory components: subject (agent, actor) – the one who remembers, recalls or has forgotten some information; manifested mnemonic process related to evaded or retrieved information and, finally, information actant. All these components are associated with the information that acts as an operand of the mnemonic process.

It would be an exaggeration to say that adults regularly pursue the goal of teaching children how to extract MS and how to construct an autobiographical story via communication. In fact, in spontaneous dialogues, adults act as information causators stimulating children to extract the most vivid and important information from their memory. This information is associated with a situation in which children took an active part. In the course of a dialogue adults also teach children “to clothe” memories in linguistic matter and to assemble the extracted structures into consistent text-recalling. Adults’ actions are not intentional, rather, they are driven by the desire to involve children into a dialogue and in this way to teach them to interact. There is obviously a tendency to stimulate oral narrative and to arrange a story. A condensed autobiographical narrative arises later as children grow up. This type of narrative is believed to be one kind of mnemonic narrative (MN). MN is always a first-person narrative, with a personalized narrator. The narrator is not only a part of the narrative reality, but also its active creator.

At the early stages of ontogenesis, adults help a preschooler to highlight the key points of past experience. This happens thanks to the adult’s stimulating cues, where the main frame of the MS is outlined. Mnemonic processes are in the center of a MS. The semantic structure is presented by agents, actors, actants, participants in the mental situation, location, and chrontope with chronomarkers. As a child unfolds this structure, adults can further guide the retrieval process. Adults act as guiding participants of the MS. Their stimulating remarks contain a causator (the verb erzählen / tell), which incites the search for the actant in memory.

The remarks of a child are dialogic mnemonic remarks (MDR in Tivyaeva’s terminology). The choice of such remarks depends on the information retrieved
from memory. Children’s remarks can represent complete units or they can be fixed in an elliptical form, which is especially characteristic of colloquial speech.

In our observations, remarks of an adult cause a child to turn to a certain layer of mnemonic experience. The communicative exchange takes place between two MS subjects, within which two mnemonic processes are verbalized, specifically the processes of preserving and restoring information in memory. These processes are united by a common information actant (situation in the past). Hence, a child acts as a “carrier” of mnemonic experience. There are many types of MS, and one of those types is the information recovery from memory that we have chosen as the main subject for our investigation.

The subject of MS for information memoirs is most often a child interacting with other participants (parents, brothers, sisters, etc.). In one actual MS, 70% of mnemonic content is a mother-child conversation; whereas 30% are represented by the conversations of a child with close relatives and acquaintances. The types of MS described above are termed as “polysubjective mnemonic situations” (PMS) (Tivyeva 2018: 97). The interaction among the participants occurs through personal contact. Also, all mandatory components of the MS are present: the subject, the verbally encoded mnemonic process, the information actant, and the information causator. It is noteworthy that in our pool of material, recollection narratives are presented not only as detailed narratives but also as short remarks of communicators.

A mnemonic narrative (MN) (Erll 2011, Vinitzky-Seroussi 2010) gradually turns into an autobiographical narrative. This happens because the strategies and tactics of an adult interlocutor are aimed at activating the memory of a child about personal past experiences. This is followed by the process of “dressing” these thoughts in language. The final stage of this process is the stage of making amendments in memories and linguistic matter. At the early stages of ontogeny, there is no narrative as such yet, let alone an autobiographical reminiscence. Narration skills are still in the process of formation, that is why there are no full-fledged mnemonic monologues (MM). As far as our material is concerned, we were able to observe hybrid mnemonic mini-monologues + mini-narrations about the requested situation in the past.

4. Analysis and results

The mother’s stimulating remark as a communicative unit from the point of view of the theory of speech acts (TSA) belongs to the class of indirect speech acts. In this case, the impact of the question on the addressee is tantamount to the impact of the request. In other words, some characteristics of indirect speech acts can be used to express the illocutionary force of other speech acts (Rakhilina et al. 2021: 10).

Here are the examples of adults’ remarks that may stimulate narration and recollection (all of them have been taken from our transcripts):
MUT¹: hast denn der Frau+Rigol schon erzählt, dass du / Have you already told Frau+Rigol that you/
MUT: +< kannst (de |: du] mal erzählen, was mer [: wir] / can (de |
[: you] tell me what mer [: we]/

In most cases of interactions with children between 3;00 to 4;05 years of age, the request for information is presented in interrogative form. This request is an indirect speech act and has the illocutionary power of inducing a speech action. At the same time, a representation (a representative or an assertive) is already given in the request for information. Besides, an indication of a macro-situation with one or another proposition (in terms of semantic syntax) is already explicitly expressed. Hence, the boy Sebastian has no way out but to talk about a certain item, i.e. is supposed to provide expected responses. Thus, a stimulating remark of an adult is a hybrid indirect speech act: interrogative – directive – representative (assertive). Such remarks-stimuli are characteristic of the “adult – child” dialogue and can be often found in everyday communication.

Understanding between a speaker and a listener depends on the context and their shared knowledge. General principles of cooperative speech communication and common background knowledge of interlocuters may re-adjust the principles of conventionality. Cooperation in communication and ability to make inferences are acquired in the process of ontogenetic development. Within the span from 3;00 to 7;00 years of age, such skills are almost absent or they are evolving. The same is true as far as logic of inference is concerned. The above said explains a lot about the hybrid form of an adult’s stimulating remarks and the hybrid form of a child’s responses.

Nevertheless, it is necessary to give the formula for the invariant of the speech act “request for information from memory” in ontogenesis. The typical features of the studied speech act can be described by the following formula:

A) I know that you have some information about the situation X;
B) I know that you will not be able to report the situation X yourself;
C) I want you to know that I am talking about X;
D) I tell you what you specifically have to tell me about yourself in the situation X.

In all cases of the requested story, we deal with extracting from memory and verbalizing some information, which is certainly associated with certain mnemonic processes and mnemonic narrations.

While talking to Sebastian aged from 3;00 – 3;05 (sla.talkbank.org/TBB/childes/German/Password/Rigol/Sebastian/030519.cha), adults try to stimulate a conversation and to maintain interaction through asking questions about the past situation. The joint subject-practical activity of the boy acquired the status of a personal emotional experience that had been imprinted in his memory. The

¹ All the examples are taken from transcripts of the material with unchanged spelling and graphics. Abbreviations, which are used in the examples, are: MUT, RIG: – adults; CHI – child; child’s age: 3;00 – three years, 0 months; 4;05 – four years and 5 months.
combination of remarks resembles a mnemonic monologue, the child’s answer is semantically, lexically and grammatically incomplete. At this age, children have already mastered the complex structures, although their putting words into sentences does not always result in success. The speech tactics of the mother is worth noting: she does not interrupt or help the child, rather she gives him an opportunity to independently talk about the past event. If someone unites all subsequent remarks in the micro-situation made by the boy, then the whole coherent hybrid mini monologue-narration will become obvious. First of all, Sebastian speaks about himself describing the logical sequence of subject-practical operations, in which he acts as a full-fledged actor on an equal basis with others. This is evidenced by the use of personal pronouns “ich – wir / I– we”. Hence, it becomes clear that the child feels he is part of the team, part of the social community (CHI: +< da ha(ben) mer [: wir] schon (ei)ne dross [: großes] Sieb (s)teh(en); CHI: +< un(d) da <ha(ben) mer [: wir]> [/] ha(ben) mer [: wir] de(n) Schubkarren mitdenomme [: mitgenommen] +< / there have (be) mer [: we] already (a)ne Dross [: large] sieb (stand); CHI: +< and) there <have) mer [: we]> [/] have mer [: we] took the wheelbarrow with us [: took with us]).

At the age of 3;02 years of age, the discursive tactics of adults are recorded: 1) refocusing the topic, 2) extracting actants, objects, and the chronotope of a given situation from memory in fragments; 3) phonetic and lexical correction of the unit; 4) approval of the correct description of the event by the child. There is topic refocusing with an indication of the chronotope of the event: was mir [: wir] für (de)n Papa für Kuchen gebacken haben// weisst (de) [: you] das noch?// was haben wir (de)n gebacken am Sonntag Morgen? / what cakes I [: we] baked for (de)n dad// do you [: you] remember that?// what did we (de)n bake on Sunday morning? Children are emotional creatures and it is hard to force them to verbally respond to adults’ remarks on unknown topics or to involve them into spontaneous interactions. Adults have to employ game tricks in order to arouse the interest of children. As a rule, up to 3;05 age, there are no minimal mnemonic coherent narrations in children’s speech reactions.

Taking into account the type of speech act in a pragmatic situation, the utterances of the adult such as: “RIG: erzähl ma(l), was du bei dem Gewitter gemacht hast” / Tell me what you did during the storm” is a non-categorical directive – a kind of request (Petrova E.B 2008: 130). Let us consider the following reply of the adult: das kannst (de) [: du] erzählen / (de) [: you] can tell me that. It is a representative, an assertive, a suppositive, in other words, a belief that presupposes a certain state of affairs that has already taken place before the utterance.

As mentioned above, the adult’s stimulating remarks may designate the propositional and semantic framework of the child’s future mnemonic utterance (was du bei dem Gewitter gemacht hast / what you did during the storm). The insistent request of the adult is expressed in the consecutive remarks intuitively creating the priming effect. It is the situation of tension, which acts as an impetus to Sebastian’s episodic memory. It produces results as the boy without story telling
skills explains in one line what he did during the thunderstorm (CHI: Tapeten abdemacht [: abgemacht] / taking off wall papers). The mother’s subsequent remarks do not only condense the past episode in memory but they also help to unfold future actions (MUT: hier here o, was hast (de)nn noch gemacht / what else have you done? MUT: was hast (de)nn gekriegt von de(r) Oma / what did you (de)nn get from you (r) grandmother?). As well, these remarks help to construct and develop the story scheme in a certain sequence and verbalize the child’s memories (CHI: Taschengeld / Pocket money. MUT: un(d) wofür and(d) for what? CHI: weil ich so prima geholfen hab / because I helped so much). The structure of the story is predetermined by the information that is preserved in memory. A verbalized episode of the past is embedded in the scheme of the story: who, what did, where, when, why, context. If the distribution of episodes is initially incorrect, then the memory will remain false. This scheme correlates with the norms of German grammar. As a rule, the stimulating remark of an adult is a complex sentence with a subordinate part attached to the main part. Complex subjunctive conjunctions define the rhematic actant core of the situation and may be followed by: the name (the agent-doer), the actant objects and the predicate verb, which create the so-called frame construction.

As can be seen, almost all dialogues between the adults and the boy Sebastian begin with an adult’s request to speak about events and joint activities that happened yesterday: MUT: wollt(e)st (d)e [: du] der Frau+Rigol eigentlich auch erzählen, was mir [: wir] für (de)n Papa für Kuchen gebacken haben / you [: you] actually wanted to tell Mrs.+Rigol what kind of cake I [: we] baked for (your) dad; MUT: +< kannst doch ma(l) der Frau+Rigol erzählen, was ihr gestern und heut(e) im Kindergarten gemacht / habt you can tell Mrs.+Rigol what you did yesterday and today in kindergarten; MUT: kannst du ma(l) erzählen, was ich dir für einen geschenkt hab / can you tell me what kind of gift I gave you; MUT: hast der Frau+Rigol erzählt, was sich de(r) Papa da geleistet hatte / Did you tell the woman+Rigol what your dad had done? and so on.

From our point of view, such pragmatic tactics of the mother are not implicitly “incentive” (as was emphasized by Nelson), rather it invites the child to joint cognitive activity and presenting the story about yesterday’s episode. One episode from the recent past is always reproduced, and it is marked lexically with gestern / yesterday or with nearby chrono-markers heut(e) / today, or nachher / subsequently. Thus, the structure of the future story-recalling is explicitly indicated with: what /was/, who /du, wir, ihr/ /you (singular), we, you (plural)/, when /yesterday, today, during a thunderstorm = gestern, heute, bei dem Gewitter/ and then, then, subsequently /nachher/, where did /gestern und heut(e) im Kindergarten gemacht / what you did yesterday and today in kindergarten. The components “what for, why, context” are most often not verbalized, since they relate to causal representations, which are shaped later. However, in the responses of the child of this age, one can note the reminiscences about a small monetary reward from the grandmother for the performed action (assistance in removing the wallpaper: CHI:
weil ich so prima geholfen hab / because I helped so much). All remarks have been produced by Sebastian in the past colloquial tense.

In addition to the chronomarkers gestern heute / today – subsequently, the names of the upcoming days of the week are also introduced RIG: ich dachte, du wollt(e)st mir noch erzählen, was du am Samstag vorhast / I thought you wanted to tell me what you’re planning on Saturday. MUT: Samstag Abend, wenn Mama un(d) Papa weggehen / Saturday evening when mom and dad go away. The mother is using playful tactics to “force” the boy to speak about the plans of his parents for the upcoming Saturday. Although, the boy either forgot or does not want to talk about those plans (MUT: verrat es ja net [: nicht] de(r) Frau + Rigol, wo mir [: wir] hin wollen / Don’t tell [:not] Mrs. + Rigol where [:we] want to go). The last remark is interesting since the “incentive” verb “erzählen / tell” is replaced by the verb “verraten” / “betray”, which changes the situation: the child is drawn into the game and starts speaking about the events of the upcoming Saturday.

At this point, we would like to emphasize that the scheme of a story-recollection may be violated depending on the grammatical and syntactic norms of a particular language. For example, a particular subject-predicate-actant arrangement of utterance elements, which semantically mark the field structure of recollection, prevails in these utterances: MUT: +< kannst doch ma(l) der Frau+Rigol erzählen, was ihr gestern und heut(e) im Kindergarten gemacht habt / you can tell Mrs.+Rigol what you did yesterday and today in kindergarten – what, who, when, where did. In our opinion, such a sequence does not violate either the process of extracting an episode from memory or the subsequent mnemonic narration. This happens because a certain deep semantic network is being created – the scheme that will act as a framework of any reminiscence.

Sebastian’s mother repeatedly changes and narrows the perspective of the recall, focusing the child’s attention of on the main thing, so that the marker what/was becomes the center of an episode of the past. The child’s reaction to an invitation, which sounds like a request for a story, – is 50% positive, 50% neutral or negative. The boy either takes part in the conversation or the dialogue stagnates and does not develop further, despite all the efforts of adult communicators.

The set of stimulating interroga tives and adult representations help to create the sequence of the child’s mnemonic responses, contributes to the development of cause-and-effect relationships. Four-year-old children (sla.talkbank.org/TBB/childes/German/Password/ Rigol/Sebastian/040127.cha) have stable causality relationships and, thus, the scheme and the structure of recalls expands due to some new important elements: who, what, to whom, / where, when / did , ...+ why, which were not observed at earlier ontogenetic stages.

There is an issue with children’s statements arrangement – they are poorly structured and quite often disconnected. For younger children, the following manifestations of external speech are characteristic: rough verbalization; wholeness as a sensual phenomenon; theme-rhematic structuring of wholeness based on prosodic isolated components (tricks); minimal verbal elaboration of the statement
with rough indicators of connected elements; ellipsis of nuclear constructions in external speech; and tendency to choose a hyperonymic name.

As it has already been said above, for the right brain hemisphere, the referent is more important than intralinguistic relations. This fact can explain why identification “by name” in matching phrases with pictures takes place while the analysis of passive and inverted constructions is excluded. The sequence “name-action-name” = “Ag-Pred-Pat” (a deep syntactic scheme) is typical of the early stages of ontogenesis, and the right hemisphere is responsible for it. Neurolinguistic studies (see the works by Balonov, Luria and others) have demonstrated that the pre-linguistic levels are linked with the right hemisphere, where motives and meanings are identified. The theme and rhyme get specified there, as well as the perception of all the prosodic components of speech. The right hemisphere begins to function from the child’s birth (the left hemisphere “turns on” later), hence the gradual “rhematicity” (production of new information) of children’s statements is quite understandable. It is common knowledge that cognitive development goes ahead of speech development; and that is why, at the stage of “holophrasis”, a child designs an entire situation with one linguistic sign or gesture. In this case, it is more acceptable to talk about focal manifestations that can accumulate motives, intentions, and unfold the semantics of a preschooler’s statement. It is “rhematicity” that can explain the child’s responses of the episodes under discussion (for example: MUT: kannst du ma(l) erzählen, was ich dir für einen geschenkt hab / Can you tell me what kind of a gift I gave you? /CHI: Rollmops / rol’mops (Petrova & Rebrina 2016).

Adults sound out what children should remember, delineate a mental frame, outline reference points (“clots”). Such reference points serve as the basis for future mnemonic statements that trigger coherent mnemonic narrations. Children retrieve from their memory and describe with linguistic means the key points of their past experience (images, scenarios).

Larkina and Bauer (2010) have demonstrated that in collaborative recall with their mothers, children’s narrative behavior was regulated best by maternal use of specific elaborative components, such as affirmations. In the context of prompted recall (supported by wh-questions), respect for autonomy was the only significant predictor of children’s involvement in the conversations and of the amount of unique content they provided. The findings suggest that different aspects of maternal behavior facilitate different components of children’s reminiscing skills, which children might apply depending on demands of the autobiographical memory conversation. The special importance of open-ended elaborative questions for children’s autobiographical memory emphasizes its social nature and functions: mothers actively invite their children to co-construct the personal past and to work together on creating a shared history (Larkina & Bauer 2010: 309).

As we have demonstrated before, the key stimulating cue contains a semantic scenario of the past event in which the child participated. At the earlier stages of ontogeny, this type of scenario explicated the key participants in the situation of the
recent past and their actions. At the age of four, the child starts creating a complete mnemonic mini-narrative with the sequence of mnemonic remarks that come almost one after another. This type of narrative has not been previously recorded in our research material related to three-year-olds.

As examples we consider the episodes of the three-year old boy Sebastian: (age 3;00: (CHI: +< da ha(ben) mer [: wir] schon (et)ne dross [: großes] Sieb (s)teh(en); CHI: +< un(d) da <ha(ben) mer [: wir]> [: ha(ben) mer [: wir] de(n) Schubkarren mittenomme [: mitgenommen] / there we already have (a) dross [: large] sieve (s)teh(en); CHI: +< an(d) there <have(ben) mer [: we]> [: ha(ben) mer [: we] took the wheelbarrow with us [: took with us]) and at the age of five years (age 4;09 – 5;00: CHI: +< in dem Pack, da waren vier Rochees [% Pralinen] drin +... CHI: +, und für jeden eins, un(d) de(n) Schubkarren mitgenommen [: mitgenommen] / in the pack, there were four Rochees [% chocolates] in it +... CHI: +, and one for each, and dad de-fed [: a]te] the whole pack). This is a fairly easy spontaneous narration, phonetically, lexically and grammatically correct. This kind is typical of colloquial speech, with an explication of the location (an object, a box of sweets), in which there were four pralines (these words stands for rhemes), just for each participant in the situation, however, the father ate all of them at once.

Our material indicates that most likely, the age of 4;00 is a turning point in the formation of memories, namely, autobiographical ones. They gradually take on the form of an autobiographical story/autobiographical narrative/mnemonic narrative. Autobiography always involves immersion in the past, retrospective presentation, the opposition of “here and there”, “now and then”.

An autobiographical narrative can be defined as “the story of a person’s life, told by himself”. It is a special case of personal narrative (Tivyaeva 2018: 221). Such terms as primary narrative, autonarrative, personal narrative and autobiographical narrative are often used as synonyms. Mnemonic narrative, having a number of similarities with the concepts of “first-person narrative” or “narrative of personal experience” and “autobiographical narrative”, nevertheless has its own specificity. That is why it is treated as an independent type of personal narrative. The most vivid moments of childhood are remembered for a long time, since they are transferred to long-term memory. Later on, they can be retrieved from memory and verbalized when generating autobiographical narrations.

At 5;00 years of age (sla.talkbank.org/TBB/childes/German/Password/ Rigol/Sebastian/ 050613.cha), the so-called overcoming of childhood amnesia (thanks to the efforts of an adult) looks already like a regular exchange of opinions typical of everyday discourse. At first glance, a simple conversation implies the framework and features of a story about oneself – an autobiographical story with semantic reference points.

At 5;00 – 5;05 years of age, the interaction gradually gets the features of a free spontaneous dialogue on arbitrary topics. There is a tendency to reduce the stimulating remarks of adults that sound as directives. One may also observe an
increase of the representatives, which convey someone else’s information about the alleged action that took place or about past experiences (RIG: un(d) da seid ihr mit (de)m Planwagen gefahren, hat der Christian gesagt / and you went with the covered wagon, Christian said). Such remarks stimulate confirmation, denial or expansion of the verbalized topic. Sebastian can spontaneously shift to a new topic in the frames of the context though.

At 6;05 – 7;00 years of age, Sebastian demonstrates a free and consistent recalling of the events of the past (sla.talkbank.org/TBB/childes/German/Password/Rigol/Sebastian/060911.cha). They are framed by various syntactic constructions typical of colloquial speech, such as introductive and postpositive actualizers. The stimulating adult’s remarks are interrogatives + expressives implicitly containing a request for a story (RIG: jetz(t) warst de [: du] bei (de)m Marvin zu Besuch, ja? / Now you were visiting Marvin, yes? RIG: habt ihr denn da was Schönes unternommen gemeinsam? / RIG: Did you do anything nice together?). They are quite popular stimuli to revive memories and to direct the development of children’s autobiographical stories. The verb causator “erzählen / tell” is now increasingly missing in their structure. However, the questions of an adult (RIG: habt ihr denn da was Schönes unternommen gemeinsam? / Did you do anything nice together?) are filled with expressive vocabulary and are formulated in such a way that the boy, as an emotional creature, is forced to react. As a result, his reaction takes the shape of a mnemonic mini-monologue.

Time has always been the key element in the conceptualization of memory in language. The category of time is a constant companion of memory and personal experience. Life experience, mental activity, the strongest impressions and emotions are linked with rueful feelings of time. At the morphological level, verbs in the past, present and future function as the verbalizers of memory processes. So, the aspectual-temporal forms of the verbs correlate with the mnemonic process and illustrate the information retrieved from memory: Imperfekt, Perfekt, Plusquamperfekt, Präsens for the present tense and Präsens for expressing the future tense in conjunction with the temporal adverbial. Chafe argues: “The material from deep memory must be reported with a strong adverb, the material from shallow memory may be reported with either a strong or a weak adverb, and the material from surface memory may be reported with a strong adverb, a weak adverb, or no adverb at all” (Chafe 1973: 271).

Temporal localizers are expressed by adverbs or substantive groups with or without a preposition. Relative temporal localizers are deictic markers that localize a mnemonic event in relation to the speaker or to the moment of interaction. The adverbial modifiers in the dialogues of German children may stand for: the year (die letzte Jahr / Last year), parts of the day (Sonntag Morgen[: Morgen] / on Sunday morning), days of the week (am Samstag / on Saturday), holidays (Weihnachten, Ostern / Christmas, Easter), significant events (Geburtstag / birthday). Mono- and bitemporal designs occur most often. Ochs (1994) explored
the use of the future tense in autobiographical stories that explicate personal experience of a narrator. E. Ochs argues that future tenses indicate statements which represent not only the reconstruction of the past experience, but also the pre-construction of the future experience (Ochs 1994: 108). Children are able to independently develop and update the key lines of their autobiographical stories at 6;00 – 6;05 – 7;00 years of age. The sequence of actions in the story is marked by the adverbs erst, da, dann / first, there, then used in the same context. Such things have not been observed by us in early age spans.

As a matter of fact, children create a mnemonic autobiographical narrative, which is comprised of separate blocks of mnemonic remarks. This kind of hybrid autobiographical story is likely to predominate as it is easily incorporated into the fabric of a dialogue or polylogue. The mnemonic narrative acquires its traditional form at the senior stages of speech ontogenesis and cognitive personality evolvement.

5. Discussion

Our study confirms the assumption that the initial stage of AM formation is associated with consolidation and reproduction of scattered events from a child’s life. Then, one may observe the appearance of the macrostructure with internalized cultural schemes and scenarios that organize mnemonic material into interacting systems of “life periods”, “life themes”, and “personal stages” (Nourkova 2008: 20).

Having analyzed the transcripts in the multimedia corpus CHILDES in detail, we arrived at the conclusion that adults spontaneously and, at the same time, implicitly teach children to recollect something and then to verbalize those memories. Children present a related narration (in our material – mnemonic), which gradually takes the form of an autobiographical story. Fivush and his co-authors (2011) assert: “Thus, there is converging correlational and experimental evidence that children learn to structure their personal narratives in much the same way their parents do during reminiscing, providing the same quality of evaluations and orientations in their narratives, and the same quantity of memory information as do their parents” (Fivush et al. 2011: 8).

The initial stratagem and tactical activities of adults are supposed to “revive” the memories of the past with certain emotional support. They contribute to the formation of autobiographical memories of a preschooler. These stratagem-tactical activities find their expression in separate abrupt remarks of a child, mainly, at the early stages of speech ontogenetic development (Table 1).
Table 1. Discursive strategies and tactics of adults for the development of mnemonic narrative skills of a child

<table>
<thead>
<tr>
<th>Child’s age</th>
<th>Development of verbal cues</th>
<th>Adults’ strategy</th>
<th>Adults’ tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target: Discourse socialization</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Intention: child’s narrative skills development → child’s mnemonic narrative skills development</td>
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<tr>
<td>Up to 3;00 – 3;05</td>
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</tr>
<tr>
<td>N1 → N1 + Vperf → N1 + No4 + Vperf</td>
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</tr>
</tbody>
</table>

| Up to 3;02 |
| N1 + No4 + Vperf + Context + argument |

| Stimilation of free speech, presentation of an individual episode retrieved from memory |
| 1) Refocusing the topic, |
| 2) fragment-by-fragment extraction from the memory of actants, objects and the chronotope of the situation; |
| 3) phonetic and lexical correction of a language unit or statement; |
| 4) approval of the correct description of the event by the child. |

| Up to 3;05 |
| N01, e+ N1+ Nfür4+ Vperf + Cir temp wann + Context + argumentation |

| Mnemonic experience activation |
| 1) Generation of game situation and language game; |
| 2) changing and narrowing the perspective of memories. |

| Up to 3;05 – 4;00 – 5;00 |
| N01, e+ N1 + Cir temp wann, Cir loc wo (Nfür4)+ Vperf + Context + argumentation |

| Generating a set of stimulus cues |
| Creation of a certain logic and sequence of mnemonic responses of the child |

| Up to 5;00 – 5;05 – 6;00 |
| N01, e+ N1 + N3 + Cir temp wann, Cir loc wo + Vperf + Context + argumentation |

| Activation of free spontaneous dialogue with arbitrary topics |
| Exchange of remarks-opinions |

| Up to 6;00 – 6;05 – 7;00 |
| N01, e+ (N1) + N3 + / Cir temp wann, Cir loc wo / + Vperf + Context + argumentation: LogCaus LogFin +² |

| Changing the pragmatic focus of information request about a single episode |
| Free interaction |

² Who+ did N1 + Vperf → who+ what+ did N1 + No4 + Vperf → what, who, for whom, did, when No1, 4+ N1 + Nfür4+ Vperf + Cir temp wann → what, who, when, where, did No1, 4+ N1 + Cir temp wann, Cir loc wo (Nfür4)+ Vperf → what, who, to whom, when, where, did No1, 4+ N1 + N3+ Cir temp wann, Cir loc wo’ + Vperf → what, to whom, /where, when/ did No1, 4+ (N1) + N3+ / Cir temp wann, Cir loc wo’ + Vperf + Context → LogCaus LogFin ..why, what for, ...+ context + argumentation (late stages of phylogenetic development; markers of cause-and-effect and logical relation-
6. Conclusion

The results of this study further our understanding of autobiographical memory and mnemonic autobiographical story at the stages of early ontogenesis. On the basis of our research, we can present some interim findings:

1. Autobiographical memory is not an innate structure and it does not exist as an independent mnemonic system.

2. Being realized as a mnemonic autobiographical story at the early ontogeny stages, autobiographical story goes through a complicated process of its formation.

3. Adults construct a scheme of a mnemonic autobiographical story-narrative and then of autobiographical memory. They intuitively apply a variety of techniques including: the priming method, the association method, the game situation method and the word games method. All these methods help to create associative semantic chains that can trigger retrieving information and reconstructing the sequence of past events.

4. Childhood memories evolve along with cognition and speech. They are initially generalized according to the schemes that undergo complicated variations as a child grows older. These transformations can be easily observed on a superficial verbal level.

All in all, this research introduces a number of clarifications concerning memories functioning in early ontogenesis, their formalization by verbal means and the possibility of their recall from memory in adulthood. The current findings may have important implications for the fields of ontolinguistics, discourse studies, corpus and empirical studies, as well as narratology, as they expand the understanding of the specifics of oral narratives, models of construction of primary and secondary texts. The problem of studying autobiographical memory and autobiographical story requires further considerations. One cannot agree more with the statement that we “need more longitudinal research that follows developmental trajectories from preschool through adolescence, in order to determine how early maternal reminiscing style may continue to influence children’s developing autobiographical narratives and self-concepts” (Fivush et al. 2011: 25).

ships “why, what for, ... + context + argumentation” are taken out of the so-called frame. The complex structure is required for the implementation of these markers in a surface verbal structure; on the other hand, such a construction is already observed at the age of 3;02 with the union deshalb / therefore/that’s why, for this reason: CHI: deshalb bin ich mitgefahren [: mitgefahren] / that’s why I went along [: went along], expressed by a separate remark). (By Context – N1,3,4 – animate person, figure in the case system of the German language (nominative, dative, accusative); No1,4 – object, inanimate person in the German case system; Vperf – verb in perfect tenses; LogCaus LogFin – logical relationship of cause and purpose; Cir temp wann, Cir loc wo – time constant, place time constant; Context –context).
Acknowledgements
This paper has been supported by the RUDN University Scientific Projects Grant System, project No 050738–0-000.
This paper has been supported by the Kazan Federal University Strategic Academic Leadership Program (PRIORITY-2030).

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**Article history:**
Received: 12 September 2023
Accepted: 15 November 2023

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