

„Honey, You’re Jumping About“ – Mothers’ Scaffolding of Their Children’s and Adolescents’ Life Narration

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Abstract

Research on mother-child reminiscing as a socializing practice for autobiographical memory is extended from early childhood and the narrating of single events to adolescence and the narrating of an entire life story. To explore whether the development of the life story in adolescence depends on qualities of the narrator or on the brevity of the narrated life, and whether mothers adapt their scaffolding strategies in co-narrations of the child’s life to the child’s zone of proximal development, 16 mother-child pairs (child’s ages 8, 12, 16, 20 years) both co-narrated and narrated singularly the child’s life. As expected, only the coherence of the children’s, but not of the mothers’ narratives varied with the child’s age. Also, mothers supported temporal structuring more in the younger children and arguments about personality and its development more in adolescents.

The idea of the sociogenesis of cognitive abilities dates back, in the social sciences and psychology, to James Mark Baldwin (1897), George Herbert Mead (1934), and Lev. S. Vygotsky (1934). These authors attempted to explain the ontogenesis of higher mental functions in terms of social interaction with more competent others, who structure the interaction and thereby help developing individuals to perform cognitive acts in social interaction which they cannot yet master by themselves. The most obvious field for which this principle holds true is language acquisition. Children communicate with able and sensitive adults before they can communicate verbally by themselves. Post-Piagetians like Doise, Mugny, and Perret-Clermont (1975) studied the emergence of cognitive structures in socializing interactions in the 1970s and 1980s. They focused on the role of the other in creating socio-cognitive conflict between the individual’s and the other’s perspective, forcing the individual to learn in terms of integrating both perspectives into her or his cognitive structures (cf. Psaltis, Duveen, & Perret-Clermont,

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2009). Barbara Rogoff (1990; 1998) initiated a research program on how children learn in educational interaction that is more in the Vygotskian tradition, stressing not individual cognitive conflict but the adult’s scaffolding of the child’s activity.

One of the most influential approaches to the sociogenesis of cognitive abilities was suggested by Katherine Nelson and Robyn Fivush (2004; Fivush, 1991; Fivush & Fromhoff, 1988) for the ability to verbally remember past experiences. In a seminal longitudinal study, Reese, Haden, and Fivush (1993) demonstrated that children who at age three had been supported in remembering personal experiences by their mothers through attempts to elicit memory statements and by helping them elaborate upon their rudimentary statements, were one and two years later better able to narrate past experiences than children of less elaborative mothers. Mothers’ support strategies included informational statements with tag-questions, closed-ended questions, and open-ended questions. Apparently mothers adapt to their children’s developing ability to provide memory statements by themselves, as can be inferred from a decrease in informational statements and an increase in open-ended questions between 1.5 and 2.5 years in one study (Haden, Ornstein, Rudek, & Cameron, 2009) and between 1.5 and 3.5 years of age in another study (Farrant & Reese, 2000). Since the late 1980s, a large body of empirical evidence has accrued testifying to the importance of parent-child memory talk and its quality in early childhood both for the development of the ability to remember by oneself as well as for other social-cognitive and communicative abilities such as narrative abilities, theory of mind, and language development. The quality of mother-child memory talk is even related to socio-emotional dispositions such as attachment security (for a review cf. Fivush, Haden, & Reese, 2006).

This body of research has focused on the preschool years, because by the end of preschool the basic ability to narrate an event has been acquired. It is further refined up to about age 9 (Peterson & McCabe, 1983), while the ability to narrate multi-episode stories continues to develop into early adolescence (van den Broek, Lynch, & Naslund, 2003). A still later development regards the ability to construct a coherent life story (McAdams & Olson, 2010). Informal interviews showed that children do not grasp the concept of the life story (Engel, 1999; Linde, 1993; Rosenthal, 1995). The life story appears both in the emerging ability for partial autobiographical reasoning, i.e. applying a biographical perspective to the self by relating distant events to each other and to the development of one’s personality (Habermas, in press), and in the development of the ability to narrate entire life narratives that are not only locally, but also globally coherent (Habermas & Bluck, 2000). The emergence of the life story in early adolescence was demonstrated in a cross-sectional study of orally narrated lives of children, adolescents, and young adults (Habermas & de Silveira, 2008; Habermas, Ehlert-Lerche, & de Silveira, 2009) as well as in a cross-sectional study of written life stories of 9- to 15-year olds (Bohn & Berntsen, 2008).

Habermas and Bluck (2000) differentiated four aspects of the overall global coherence of life narratives: coherence with a cultural concept of biography, temporal, thematic, and causal-motivational global coherence. The ability to narrate a globally coherent life narrative is acquired in two main steps. First, at about the age of 12, the ability to structure a life chronologically is acquired, supported by the acquisition of the ability to flexibly apply calendar time (Friedman, 2004) and by the acquisition of a cultural concept of biography (Habermas, 2007; Bohn & Berntsen, 2008). This is a

culturally defined sequence of biographically salient normative events with age norms, also termed *life script* by Berntsen and Rubin (2004). This first step allows the narrator to create global temporal coherence in life narratives, enabling listeners to understand when in a life specific events happened, which is aided by the narrative's conformity to the cultural concept of biography.

Later, by about the age of 16 years, the ability to create global thematic and causal-motivational coherence in life narratives emerges. Thematic coherence is created by narrating and pointing out commonalities across life events, providing a sense that the narrator is the same person in diverse moments in life. Causal-motivational coherence is created by providing causes for events that happened to narrators and motives for their actions and the development they have taken, providing a sense of order and direction in a life. Thematic coherence focuses on self-sameness, causal-motivational coherence on developmental change. A central means to create global thematic coherence in life narratives is the concept of personality, which allows the narrator to subsume a variety of different events and actions under a common personality trait. A central means for creating global causal-motivational coherence is to describe and provide motives for changes in and the development of personality (Habermas & de Silveira, 2008; Pasupathi, Mansour, & Brubaker, 2007).

The present study was designed to explore cross-sectional, indirect indicators for whether the ability to narrate globally coherent life narratives is also learned in socializing talk with more competent narrators. The life story is probably learned partly passively by reading biographies and novels, and in solitary biographical activities such as writing diaries and letters (Habermas & Bluck, 2000; Habermas & de Silveira, 2008). Still, shared autobiographical family narratives (Fivush, 2008) may be an important source of both information about and interpretation of one's life as well as a source of the ability to construct a life story.

As this is a first exploration of mother-'child' biographical talk, we chose a cross-sectional design including the same age groups used in the Habermas and de Silveira's study (2008) on the development of the life story, namely 8, 12, 16, and 20-year-olds, with two mother-daughter and two mother-son pairs in each age group. We asked mothers, rather than fathers to co-narrate their daughter's or son's life with them, because women are generally more willing to participate in research, and also because the gender of the off-spring influences memory co-narrations more than the parent's gender (cf. Fivush, Haden, & Reese, 2006). Due to the cross-sectional design and the small number of participants which renders it difficult to define reminiscing styles, our main interest was to demonstrate - if not the socializing effect of mothers' interventions - then the socializing effort of mothers. We expected that when mothers are asked to help their child to narrate their life, they intuitively adapt to the child's level of ability and scaffold those abilities which the child is about to learn, but has not yet mastered autonomously. In this phase in the acquisition of a skill, termed the *zone of proximal development* (Vygotsky, 1934/1987), children are able to use a skill with the support of an adult, but not by themselves.

As we were also interested in the relation between free-standing monologic and co-narrated, dialogic life narratives, we elicited both. To describe whether in this sample the same developmental lag between the acquisition of first temporal coherence and then causal-motivational and thematic coherence is present, we asked daughters and

sons to tell their lives also in a monologue without the presence of their mothers. In addition, we asked mothers to narrate their child's life in a monologue in the absence of the child. If the global coherence of mothers' narratives of the child's life does not vary with the child's age, this proves our contention (Habermas & Bluck, 2000) that the increase in global coherence in life narratives across adolescence is neither due to characteristics of the narrated life itself, such as its brevity, as discussed by Linde (1993), nor to a possible lack of life changes in children's lives which are required for narrating a story, as discussed by Rosenthal (1995)(hypothesis 1), but is due to children's still immature autobiographical reasoning.

We defined more specific supportive strategies than prior research, tuned to the expected developmental steps in the acquisition of the ability to narrate globally coherent life narratives. The temporal structuring of the life narrative is acquired between the ages 8 and 12, while the causal-motivational and thematic structuring by use of the concept of personality and its development is acquired between ages 12 and 16, and continuing even later. Therefore we expected that temporal structuring would be supported most at age 8, possibly still at age 12, and that the use of the child's personality and its development as an organizing principle would be supported most at age 12 and maybe still at age 16 (hypotheses 2 and 3). Such a developmental lag in mothers' scaffolding would show neither that this kind of talk is frequent in adolescence nor that it is effective and indeed helps children acquire the ability to construct a life story (although this seems probable). Such a lag would show, however, that once mothers do engage with their children in constructing biographies or autobiographical reasoning, they adapt to their child's level of ability so as to teach them the next skill they are about to acquire.

As a co-narration is a social interaction, it can also be analyzed in terms of who of the two is active in determining the content and course of the dialogue. If indeed the co-narration of life narratives develops with age so that the younger participant increasingly takes over parts of the life narrative formerly provided by the mother, then initiative and active structuring should increase in children with age (hypothesis 4).

For exploratory purposes we also coded sequences of statements in which the two past perspectives of mother and child are coordinated with each other. At about age four children have already learned that an event may be evaluated and experienced differently by different individuals (Selman, 1980). Differing past evaluations of an event are already negotiated in memory talk by preschool children. This is exemplified by an excerpt in Fivush and Nelson (2006, p. 243), in which the mother interprets the child's wish to go on the mother's bike as motivated by tiredness. The child disputes tiredness as the motive, but then focuses on why her legs were hurting. Developments in perspective taking in middle childhood and early adolescence allow children to not only differentiate perspectives, but also to coordinate them reciprocally and mutually (Selman, 1980). We coded all utterances in which differing past evaluations of events by mother and child are not disputed but coordinated with each other, accepting them both as valid, to explore this more advanced kind of differentiation of perspectives.

Method

Participants

A convenience snowball sample of 16 mother-daughter and mother-son pairs were recruited in a suburban area. Participants were not personally known by anyone involved in the study. Four age groups each consisted of two mother-daughter pairs and two mother-son pairs, with mean ages (standard deviations in brackets) of 8.50 (.37), 12.77 (.17), 16.19 (.25), and 20.19 (.31) years respectively. Age of mothers did not differ between daughters and sons, but did differ systematically with the children's age, with means of 37.00 (7.39), 41.24 (4.65), 45.00 (1.41), and 51.25 (3.95) years for the four children's age groups. Parents were highly educated: Seven mothers had a university degree (ten fathers), five had the German 'Abitur' (Baccalaureate; two fathers), and four had vocational training (four fathers). All parents except one mother spoke German as their first language, as did all children. Mothers, and in the case of the 20-year-olds, mother and son or daughter together received € 80, as compensation for their participation. It proved especially difficult to find 20 year old males willing to talk about their lives with their mothers. Before starting, participants were informed about the aim and scope of the study and assured confidential treatment of their data. All adults signed statements of informed consent, and mothers signed for their children younger than age 18.

Procedure

Mothers were briefly informed about the study by phone. Testing took place at the participants' home. Participants were informed that two different female interviewers would come to their home for two separate sessions, about one to two weeks apart, and that the second interviewer would not be informed about the life stories told at time 1, to make sure that complete life narratives were again told at time 2. In session 1, the procedure was outlined to both participants. Then the mother filled in questionnaires, while the child told her or his life narrative to the interviewer in a separate room and was then tested for biographical knowledge and intelligence. Subsequently, the interviewer left the child and elicited from the mother a narrative of the child's life. Finally the mother completed some questionnaires. At time 2, the respective other interviewer underscored that she was not informed about what had been said at time 1. Child and mother first co-narrated the child's life. Then the interviewer assisted the child with several questionnaires, while the mother filled in some more questionnaires by herself. Both sessions took between 60 and 90 minutes each. Life narratives were tape recorded.

Design

Each mother-child pair produced two monologic narratives of the child's life, one by the child and one by the mother, as well as a co-narrated, dialogic narrative of the child's life.

Material

Monologic life narrative. Children were instructed to "tell me what you have experienced in your life. Please think about what has happened in your life from the beginning on. Please tell me a coherent story of your life. I am interested in how you have developed as a person and which were the most important milestones in your life. Please tell me about the most important events and what has changed in your life. Please tell me specific events from your life. Please tell me your life story so that I can get a picture of who you are. I would like to know how you have become the person you are today." The child was given 15 minutes time, and informed of the remaining time after 10 minutes. The interviewer said that she would not interrupt the child. Children in the two younger age groups were asked to repeat the instructions to make sure they had understood them. Instructions were similar to those used in an earlier study (Habermas & de Silveira, 2008). In addition, once the child had finished the life narrative, three questions were asked which aimed more directly at eliciting autobiographical reasoning: "How do you think your childhood experiences shaped the kind of person you have become? Were there any circumstances or events that were detrimental to your development? Why do you think your parents treated you as a child the way they did?" Mothers received the same life narrative instruction only concerning not her own life but that of her son or daughter.

Dialogic life narrative. Both mother and child were addressed: "Please tell your (child's) life together." The above life narrative instruction was adapted to address both narrators. The child was asked to start and to freely ask mother for help and support. The mother was asked "to narrate the child's life together with him/her. You can support your child at any time, provide additional information, ask questions, or talk with your child." Finally both were told that "I am really interested in both of you narrating the child's life together". A period of 20 to 25 minutes was provided. Again, the interviewer did not interrupt the two except for indicating the remaining time after 15 minutes.

Life narrative coding and rating. Life narratives were transcribed verbatim. Any verbal utterance, even if it did not form an entire sentence, was counted as an utterance. Simultaneous speech was marked as such. Utterances were divided into propositions by a coder who had previously attained 96.5% agreement with a second coder on the basis of 20 monologic life narratives from a different study.

Global coherence. Both monologic and dialogic life narratives were rated and coded for global coherence with manuals already used in an earlier study (cf. Habermas & de Silveira, 2008, for details). Temporal and causal-motivational global coherence were rated by a research assistant who had attained intraclass correlations with 30 life narratives which had been coded for an earlier study (Habermas & de Silveira, 2008) of $r_{icc} = .89$ for temporal orientation provided by the narrative, either by narrating chronologically or by providing temporal indicators, and of $r_{icc} = .91$ for the degree to which the developmental consequences of an event are explicated. Each of the 7 point rating scales was defined in a paragraph and by brief anchor definitions for every second point. 'Temporal orientation' measures the degree to which the reader is able to follow the temporal sequence and/or understand the absolute timing of events in life, ranging from 0 to 100 percent. *Developmental consequentality* is intended to measure causal-motivational global coherence. It is a rating of the degree to which the reader understands how past experiences explain how personality, life, or outlook have

changed and what the turning points and motives for change were, ranging from “No personality change described” to “The development of personality is presented with its turning points and motives”. A third rating scale, devised to measure thematic coherence via the *smoothness of transitions between events*, could not be applied, because transitions between events only pose a problem if discrete preselected events need to be integrated into the narrative. In contrast to the earlier study, here we did not ask to integrate preselected most important memories into the narrative.

Another way to measure global coherence is to use relative frequencies of specific kinds of arguments. Here we coded one class of arguments for causal-motivational coherence, autobiographical arguments, and one class of arguments for thematic coherence, exemplifications. *Autobiographical arguments* are forms of reasoning that specifically contextualize an event within the frame of the entire life, or tie local events to the development of personality (Habermas & Paha, 2001; Pasupathi et al., 2007; McLean, 2005). *Exemplifications* provide a specific event to illustrate a more general point. Autobiographical arguments and exemplifications were coded by a coder who had attained an interrater reliability of Cohen’s $K = .96$ and $K = .83$ respectively with 20 life narratives that had been coded for an earlier study (Habermas & de Silveira, 2008). Ratings of global coherence were based on the uninterrupted life narrative without the answers to the additional questions, whereas coding used the whole transcript, because the additional questions served to prompt autobiographical reasoning.

Turn taking. A new manual was written, using entire utterances as the unit of coding. First, the quality of the taking of turns was coded, either as harmonic, as a turn being offered, or as unilaterally taking a turn by interrupting the other. Two coders independently coded one dialogic life narrative from each age group, attaining interrater reliabilities of $K = .82$.

Reactions and content of utterances. All utterances in the co-narrated, dialogic life narrative were coded with regard to how the speaker reacted to the other speaker when taking the turn (*reaction to the other’s utterance*), and with respect to the main theme of the entire utterance (*major content of utterance*). No less and no more than one reaction code and one content code were assigned to each utterance for the sake of simplicity and to achieve a better reliability, choosing the dominant reaction and content. Because reactions only regarded the initial part of the utterance, which referred to the prior utterance of the other speaker, reactions will be used as a proportion of the number of all utterances of one speaker, irrespective of how long an utterance was. Major content of utterance, in contrast, was coded for the entire utterance, and will therefore be used as a proportion of the number of all propositions. Thus we calculated the proportion of all propositions that belonged to utterances with a given content code. Each utterance received a code for reaction and a code for content. Only the codes that are pertinent to this report are provided in Table 1. Two coders independently coded one dialogic life narrative from each age group, attaining interrater reliabilities of $K = .85$ both for reactions and content of utterances.

Maternal support of temporal sequencing was operationalized by two codes. The reaction code *remarks about temporal sequence of narration* measured comments about and corrections of the temporal order in which the other speaker narrated events. The content code *temporal detail* regarded temporal specifications of an event. Maternal support of the creation of causal-motivational and thematic coherence was

operationalized by only one content code, *personality*, which regarded statements about the personality of someone, usually of the child. We reasoned that speaking about the child’s personality helps integrate the life narrative by using an overarching, abstract concept. Speaking about personality as a stable entity helps create thematic coherence, while speaking about change of personality helps outline personal development.

Results

Hypotheses were tested non-parametrically because of the small number of participants. A one-sided level of significance of $p < .05$ was used for tests of hypotheses and for the description of obvious age trends, whereas a two sided level of $p < .05$ was used for exploratory purposes. Linear age trends are tested with the Jonckheere-Terpstra test, for which the observed J-T statistic and standardized z value is provided, together with an estimation of r as an indicator of effect size as suggested by Field (2009, p. 571).

Monologic life narratives.

The length of children’s monologic life narratives (number of propositions) increased significantly with age, $J = 73$, $z = 2.34$, $p = .009$, $r = .59$, as did the absolute length of their contribution to the dialogic life narrative, $J = 68$, $z = 1.87$, $p = .034$, $r = .47$, while the length of mothers’ narratives did not vary with the child’s age in the monologue or the dialogue (cf. Table 2). Children’s monologic life narratives became more coherent with age, both as shown by ratings of global coherence and by codes of autobiographical arguments and exemplifications (Table 2). Significant linear trends showed for ratings of developmental consequentiality, $J = 76.5$, $z = 2.80$, $p = .002$, $r = .70$, for autobiographical arguments, $J = 81$, $z = 3.18$, $p = .002$, $r = .79$, and for exemplifications, $J = 64.4$, $z = 1.78$, $p = .040$, $r = .45$, (all one-sided). The rating of global temporal orientation did not increase significantly with age, which was due to the fact that only the youngest age group had lower than maximum values. The global coherence of children’s life narratives increases most between ages 8 and 12 for temporal coherence (rating), and between ages 12 and 16 for both causal-motivational (rating and codes) and thematic coherence (codes), reflecting earlier findings with a larger sample (Habermas & de Silveira, 2008).

Hypothesis 1 expected global coherence of monologic life narratives not to depend on the brevity of the life being told, but rather on the developing speaker’s age. Accordingly, mothers’ performance did not vary systematically with age in any of the four indicators of global coherence. This shows that the increase in global coherence between ages 8 and 16 is not due to the brevity or quality of the life lived. Rather it most probably depends on the narrator’s developing biographical narrative abilities.

Dialogic life narratives.

Dialogic life narratives were almost twice as long as monologic narratives, reflecting the differences in instructions. The overall length tended to increase mainly between the youngest and the following age group (Table 2). Number of turns did not increase, but

the mean length of utterances in terms of number of propositions did increase both overall, $J = 79$, $z = 2.90$, $p = .003$, $r = .73$, and for children's utterances only, $J = 75$, $z = 2.52$, $p = .011$, $r = .63$ (Table 3).

Hypothesis 2 expected mothers' support of temporal sequencing of events in life narratives to peak at age 8 and possibly again at age 12. The reactions to temporal sequence, however, peaked in the group of mothers with 12-year-olds: two mothers of children aged 8, all four mothers of children aged 12, two mothers of children aged 16, and only one mother of 20-year-olds made remarks on the sequence of narrating events (cf. Table 3). Thus the mode of the distribution was not at age 8, but one group up, at age 12. Consequently, there was no significant linear trend, $J = 36$, $z = -1.17$, $p = .13$, (one-sided), $r = -.29$. Only one child in each age group, except for age 12, reacted to the temporal sequencing of the narration.

The percentage of mothers' propositions regarding temporal detail was distributed as expected, with a peak at age 8 and much lower frequencies in all other age groups, resulting in a significant linear decrease, $J = 27$, $z = -1.96$, $p = .027$ (one-sided), $r = -.49$. Children spoke less about temporal details than mothers did, with a moderate peak at age 12.

Hypothesis 3 expected mothers' support of thematic and causal-motivational coherence to peak at age 12 and possibly again at age 16. Indeed the frequency of propositions regarding personality peaked in the group of mothers of 12-year old children. However, there was an unexpected second peak at age 20. The frequency of children's propositions regarding personality peaked at age 16, with very few propositions regarding personality at earlier ages, resulting in a significant age trend, $J = 70$, $z = 2.06$, $p = .04$, $r = .52$.

Hypothesis 4 expected children to become more autonomous in contributing to and structuring the dialogue. We tested the hypothesis with two indicators. The quality of turn taking had been coded as being offered by the other, as harmonic, or as taken unilaterally. We interpret being offered a turn as a sign of interactive passivity, and one-sided, interruptive turn taking as a sign of interactive initiative. With age, children were decreasingly offered turns, $J = 9.5$, $z = -3.60$, $p = .000$ (one-sided), $r = -.90$, and increasingly took turns unilaterally by interrupting mothers, $J = 78.5$, $z = 2.85$, $p = .002$ (one-sided), $r = .71$. To exclude the possibility that the latter finding was simply due to an increase of dispute and mutual interruptions, we subtracted the mothers' interruptions from the children's interruptions with age. Even the remaining interruptions by the children increased with age, $J = 29$, $z = 1.77$, $p = .042$ (one-sided), $r = .42$. A reverse trend of mothers ceding control over the dialogue did not show, however. There was no significant decrease in interrupting the other, $J = 64$, $z = 1.50$, $p = .15$ (two-sided), $r = .38$; rather, there was a nonsignificant tendency for mothers to interrupt more the older the child was.

A negative indicator of the child's activity in leading the dialogue was the proportion of mothers' reactions constituting either props or questions and the amount of children's reactions coded as answers and elaborations of props. The sum of the respective proportions of these kinds of utterances decreased dramatically across the age groups, $Mdn = 11.2$, 8.6, 4.5, and 1.9 for age groups 8, 12, 16, and 20, $J = 5$, $z = -4.02$, $p = .000$ (one-sided), $r = -1$. The reverse pattern, i.e. the sum of children's questions and

mothers' answers, showed no linear relationship with age, $Mdn = 3.2$, .7, 1.4, and 2.2, $J = 45$, $z = -.28$, $p = .68$, $r = -.12$.

Exploratory analyses of the more interactive reactions showed no age trends for confirmations, which were quite frequent. Corrections and negotiations peaked at age 12 both in children and mothers. This parallel is not unexpected, given the basically symmetrical nature of these reactions. Remarks about not knowing or remembering something tended to decrease with age in mothers and - with a small delay - also in children, without reaching significance. Finally questions asking for clarification decreased significantly in children, $J = 19.5$, $z = -3.07$, $p = .001$, $r = -.77$, and tended to decrease also in mothers, $J = 29$, $z = -1.96$, $p = .051$, $r = -.49$.

Finally exploratory analyses of propositions concerning the juxtaposition of differing perspectives onto the same events revealed a linear increase with age in children's contributions, $J = 70.5$, $z = 2.10$, $p = .036$, $r = .53$, and a nonsignificant peak at age 16 in mothers' contributions, $J = 66$, $z = 1.68$, $p = .10$, $r = .42$. Also, the proportion of propositions referring to details decreased in children, $J = 9$, $z = -3.64$, $p = .000$, $r = -.91$, as well as in mothers, $J = 19$, $z = -2.71$, $p = .006$, $r = -.63$.

Discussion

This study for the first time shows that earlier findings of an increase in global coherence of life narratives between late childhood and early adulthood is not due to characteristics of the children's or adolescents' life which is being narrated, but rather to narrators' age, i.e. most probably to their cognitive-narrative abilities. Second, the study provides some evidence that mothers intuitively adapt to their children's level of autobiographical life story competence by specifically supporting those aspects of life narratives which children and adolescents are about to learn next. Not all indicators conformed to expectations. Given the small sample size, however, we refrain from interpreting single results. The overall picture does correspond to expectations. Although narrating one's life is by far not as basic an ability as remembering single past events, in our societies it is an ability that adults are expected to have. The strategies used to scaffold life narrating are more specific than the ones used by mothers of preschool children to help them narrate a specific experience. Third, the study shows that with age, adolescents increasingly participate actively in a shared task of co-narrating their lives with a parent.

Limitations.

The sample is small and highly selective because of the high level of education of parents and their almost exclusively German cultural background. Still there is no plausible reason to assume that age differences in children's' and mothers' performance in co-narrating a coherent life narrative is influenced by the homogeneous educational level or ethnicity. Thus the clear independence of mothers' narratives of their child's life from the child's age can be expected to generalize to other populations. The specific scaffolding strategies used, however, may be influenced more by educational level and especially cultural conventions (e.g., Wang, 2001).

Therefore the finding of mothers' adaptation of their scaffolding strategies to the child's level of competence and the specific strategies used need to be tested with a larger sample. Given that the main development of the life story takes place between ages 8 and 16, and that often adolescents leave the parental home before age 20, future studies should focus more on the preadolescent and early to mid-adolescent age range. Also, educationally and culturally more stratified samples and fathers need to be included. A larger study would also allow researchers to define individual differences in styles of scaffolding. These could be used longitudinally to predict individual performance in monological life narrating, thereby allowing inferences about the consequences of parental biographical reminiscing style. Ideally, such a longitudinal study would relate early childhood shared reminiscing styles to biographical reminiscing styles in adolescence to explore continuities and discontinuities.

While it is plausible to argue that it is mainly the parents who reminisce with young children, it is less clear whether in late childhood and adolescence talk about one's (or, for that matter, also other's) biography takes place spontaneously at all between parent and child, or whether such talk is relegated mostly to talk amongst peers. Ideally, this needs to be researched by naturalistic observations in everyday life, such as in family dinner conversations. Although biographical talk may better be evoked by a more intimate format, its frequency could also be explored by self-report measures.

Further observations on and implications of biographical co-narrations.

The socialization of biographical reasoning is less basic than learning to remember events in memory talk. Still it may have more broad effects than the socialization of specific skills and more profound identity implications than everyday dialogues in learning contexts (Ligorio, 2010), because past events that are selected for and tied into the life story have strong implications as to who the narrator is. Beyond the direct scaffolding studied here, other aspects of mothers' contributions to co-narrated life stories of their children might also have effects on the developing adolescents' construction of their life stories. Here we point out five additional aspects of adolescent-parent biographical dialogues for future investigations.

First, a potent issue at stake in these narratives, especially with the older adolescents, is the issue of identity. Families attribute personality characteristics to their children. For children it becomes possible to project alternative views of one's character only as they grow into adolescence (Erikson, 1968). Listening to co-narrated lives suggests that it is especially the mothers' privileged knowledge about the early years, due to childhood amnesia, and her privileged - because more mature - understanding of the child during these years, that gives her the power to define who the child was. Some mothers rely on a whole range of different episodes from across their child's life to delineate personality continuities. Adolescents have a hard time challenging these identity claims by their mothers because of the mothers' advantage. In our sample mothers refer to specific episodes from the preschool years to argue how already at that tender age did their child show a specific character traits (cf. Pasupathi & Weeks, in press, for other examples). In monologic life narratives, such originating events (Pillemer, 1998) are pushed even further back to the very beginning of one's personal pre-history, that is to what happened during and around birth (Habermas, Ehler-Lerche,

& de Silveira, 2009). Using birth episodes to illustrate and find a trait is less feasible for mothers, because birth incidents might be thought of as revealing more about mothers than their offspring. It would be interesting to pursue longitudinally the fate of such character attributions that are implanted by way of early childhood episodes.

Second, the mothers' interpretative advantage regarding their child's early years also extends to the child's motives. Thus mothers frequently complement or correct children's statements about their past motives. One typical class of motives derives from how a child experienced a situation, that is which emotions were elicited. In a more complex fashion, motives or sensibilities for specific experiences may be abstracted to form personality traits or persisting values, which again contributes to global coherence and lends direction to the life.

Third, the downside of mothers' interpretative advantage is that they are also more personally responsible for what happened to the child in the past. Thus a variety of mother's participations in the co-narration appear to aim at denying responsibility, minimizing or leaving out past actions that might throw a negative light on her, for example moving many times or splitting up with the child's father. The mother's defensiveness may strongly color the co-narration and may lead to disagreements, interruptions, and lacunae in the narrative.

Fourth, as children move into adolescence, the mothers' interpretative power regarding the child's past becomes ever more problematic, as the child's need to gain autonomy increases. It is our impression from these few co-narrations that with age the mothers' interpretative advantage is ever more counterbalanced by the adolescents' ability to withhold information. In one case, the daughter had not told her mother that she had reunited with a boyfriend of whom the mother strongly disapproved. Thus in adolescence, or more generally in situations of relative powerlessness, not speaking about something may be not just a case of keeping secret a transgression (Pasupathi, McLean, & Weeks, 2009) or of taking something for granted (Fivush, 2009), but an act of resistance and autonomy. Keeping secrets may be a first step on the way to openly challenge parents' memories and interpretations. This may show in the trend found in this study that children become more openly active in the co-narrations across adolescence.

Finally, co-narrations of shared events are negotiated. In the current study, we sometimes observed specific and mature ways of resolving mutual challenges and disagreement, i.e. a mutual recognition of the other's perspective without denying one's own perspective about how things happened and how they were evaluated. These seemed to be moments in which space for a real dialogue opened up, both narrators being curious to learn about other perspectives without giving up their own.

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Table 1
Relevant codes for utterances

Reactions to other's utterance	
Remarks about temporal sequence of narration (Hypothesis 2)	The utterance suggests a specific ordering of events to be narrated. Example (Lines 24-27): M: <i>And then we lived there for a while</i> 18) C: <i>Yeah</i> 19) M: <i>(incomprehensible)</i> 20) C: <i>And then you split up</i> 21) M: <i>Right (-)</i> 22) C: <i>And then (---) Mum?</i> 23) <i>What happened then?</i> 24) M: <i>Perhaps we should tell a little bit about</i> 25) <i>what it was like</i> 26) <i>while we were living together earlier</i> 27) <i>that you can't really remember.</i> (Age 8) Example: 84) M: <i>Honey, you're jumping about (-)</i> 85) <i>perhaps we can go on with the duck?</i> (Age 8)
Corrections and negotiations	The preceding utterance is disputed, corrected, or a compromise is offered. Example (Line 148-149): 145) C: <i>Right then I had my friend there</i> 146) <i>when we still lived in Hofstraße in Winkelheim</i> 147) <i>that was Paul</i> 148) M: <i>Before we moved to Heidelberg</i> 149) <i>you got to know Paul</i> 150) C: <i>Yeah, yeah,</i> 151) <i>At a roofing ceremony,</i> 152) <i>because there was a new house</i> (Age 8)
Confirmations	Statements confirming the preceding utterance, often in brief expressions like "That's right", "Yeah, yeah".
Remembering and knowing	Statements about knowing or remembering or their absence.
Asking for clarification	The preceding utterance has not been understood, and the other is asked for clarification.
Question (Hypothesis 4)	Questions include both closed-ended questions, questions regarding details, and props, i.e. suggestions about what the child might elaborate on.
Answer (Hypothesis 4)	Answers can be brief or more elaborative.
Major content of utterance	
Temporal detail (Hypothesis 2)	Temporal details are specified, complemented, or corrected as in the above example for corrections, lines 148-149. Another Example (Line 88): 86) C: <i>Yeah we'll now go on with the duck.</i> 87) <i>And then (-)</i> 88) M: <i>Well that was 2000.</i> (Age 8)

Other details	Details such as of place or names. The above example for corrections contains an example for the category "other detail" in lines 151-152 coded.
Personality (Hypothesis 3)	Personality traits are described, discussed or exemplified with an event. Example: 463) M: <i>Well what there was about Maria as a small child</i> 464) <i>what always made a great impression on me</i> 465) <i>she was very hesitant in some things</i> 466) <i>but if she then said 'yeah' to something</i> 467) <i>then she saw it through all the way</i> 468) <i>you could actually talk to her about some things very early on</i> 469) <i>I still remember this decision</i> 470) <i>when you should go to kindergarten</i> (Age 16)
Diverging perspectives	Speaker stresses how she or he has experienced an event or situation, as juxtaposed to the other's subjective experience. Example (Lines 425-430): 418) M: <i>[...] but I sometimes found it real hard on me</i> 419) <i>and the next moment you could be like almost trusting confiding and open and (-)</i> 420) <i>well at some point I learned to simply put up with these lows or when you were so withdrawn because</i> 421) <i>because it was then clear to me</i> 422) <i>it's a only a phase</i> 423) <i>and the day after tomorrow it can already be quite different (-)</i> 424) <i>but I did find it strenuous and sometimes also</i> 425) C: <i>I found it strenuous too ((both laugh))</i> 426) <i>because somehow you had a habit of coming in particularly often on those very days ((laugh))</i> 427) <i>then you want to be alone for once</i> 428) <i>and then you come</i> 429) <i>"Yeah what's the matter"</i> 430) <i>well that was really (-)</i> (Age 16)

Note. Examples are excerpts from the dialogic life narratives. Each line represents a proposition, utterances are marked by M for mother and C for child. Line numbers indicate the position in the narrative. Ages indicate the age of the child.

Table 2

Medians of Relative Frequencies of Codes for, and of Ratings of Global Coherence in Life Narratives by Child Age, Speaker, and Monologue vs. Dialogue

Speaker	Monologic Life Narratives							
	Child's narrative				Mother's narrative			
Child's age	8	12	16	20	8	12	16	20
N propositions	241	298	362	488	359	546	377	399
<i>Codes per proposition</i>								
Autobiogr. arguments	.0	.3	.8	1.2	1.6	1.8	.7	1.7
Exemplifications	.0	.0	.4	.1	.8	.6	.7	.4
<i>Global ratings</i>								
Temporal orientation	4.0	7.0	7.0	6.0	6.5	5.0	7.0	5.0
Developm. conseq.	1.0	1.5	5.5	4.0	4.0	4.5	5.0	3.0
Speaker	Dialogic Life Narrative							
	Child's contribution				Mother's contribution			
Child's age	8	12	16	20	8	12	16	20
N propositions	290	408	399	453	253	367	403	308
<i>Codes per proposition</i>								
Autobiogr. arguments	.2	.0	1.6	.8	.8	.7	1.1	.5
Exemplifications	.0	.0	.0	.0	.2	.0	.1	.0
<i>Global ratings of entire co-narrated life narrative</i>								
Temporal orientation	5.0	6.0	6.0	6.0	= 5.0	6.0	6.0	6.0
Developm. conseq.	1.5	3.0	4.5	6.0	= 1.5	3.0	4.5	6.0

Table 3

Medians of Numbers of Turns, Propositions per Turn, and Relative Frequencies of Codes by Child Age and Speaker in Dialogic Narrative of Child's Life

Speaker	Child's contribution				Mother's contribution			
	8	12	16	20	8	12	16	20
Child's age	8	12	16	20	8	12	16	20
Mean number of turns	128.5	140.0	127.5	117.0	128.0	140.5	127.5	117.0
Mean number of propositions per turn	2.3	2.3	2.9	4.6	2.1	2.6	3.7	2.9
<i>Turn-taking in percentages of speaker's turns</i>								
Turn offered by other	28.5	21.5	13.3	5.5	14.0	2.6	7.4	6.9
Turn taken unilaterally	6.0	12.3	15.4	34.8	6.4	13.6	.5	23.6
<i>Reactions to other's utterance in percentages of turns</i>								
Remarks about temporal sequence of narration	0	.0	.0	.0	.3	1.0	.5	.0
Corrections, negotiations	6.1	9.9	7.4	7.3	7.2	9.1	7.3	6.3
Confirmations	23.4	39.3	26.6	31.8	23.7	18.8	32.4	17.5
Remembering, knowing	6.2	6.4	4.4	2.4	3.4	2.5	1.8	1.9
Ask clarification	1.1	0.0	0.0	0.0	1.7	0.0	.6	.0
<i>Major content of utterance in percentages of propositions</i>								
Temporal detail	1.2	2.0	1.7	.7	6.0	2.3	2.6	1.9
Other details	9.5	4.5	2.7	1.2	7.1	5.5	1.5	2.7
Personality	.6	.5	7.9	1.8	9.5	13.9	7.6	13.2
Diverging perspectives	1.2	1.8	7.4	12.1	2.7	15.9	18.0	9.5