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The acquisition of the cultural life script: children have a less normative and less sequential concept of the life course than adults

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ABSTRACT

Autobiographical remembering develops in childhood. A late-developing cognitive tool is the cultural life script. The present study aimed at exploring the beginnings of its acquisition and at replicating its acquisition in early adolescence in a Southern-European culture. Study 1 established the Portuguese normative adult cultural life script, against which the cultural life scripts provided by 6- to 16-year-olds could be compared in Study 2. The acquisition of the cultural life script in early to mid-adolescence was confirmed with multiple indicators. In 6- to 8-year olds, life script knowledge was only rudimentary. However, children still agreed highly on a set of mostly non-normative life events which they named as typical for a normal life that are not part of the adult life script. We conclude that children's non-normative concept of life is less helpful for remembering, narrating, and planning a life than is the adult cultural life script with normative events.

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KEYWORDS Cultural life script; autobiographical memory; reminiscence bump; adolescence; life story

Cultural knowledge about human lifespan development and the life course is acquired during individual development. *Developmental knowledge* (Reis, 1988) concerns typical trajectories of the development of abilities and psychological functions and appears to be acquired in early to mid-adolescence (Riediger et al., 2014). This article focusses on the developmental acquisition of *biographical knowledge* (Habermas, 2007) or the *cultural concept of biography* (Habermas & Bluck, 2000). It covers the entire lifespan and regards what a normal life and a biographical account is expected to look like. It helps, for example, remember and narrate as

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Supplemental data for this article can be accessed here.

well as plan a life. We first introduce a central element of biographical knowledge, the *cultural life script*, to then discuss different aspects of its acquisition. We present a study of the acquisition of the cultural life script in children with a focus on younger ages.

The cultural life script and its developmental acquisition

The cultural life script (CLS) is defined as a culturally shared set of expectations regarding the most frequent important life events and their timing in the life of a normal person of a given gender within a given culture (Rubin & Berntsen, 2003). Besides serving as a script for planning life (Bohn & Berntsen, 2013), the CLS guides the recall of autobiographical memories (Berntsen & Rubin, 2004), provides anchoring events for dating autobiographical memories (Bohn & Habermas, 2016), and helps create coherence in the life story (Bohn & Berntsen, 2008; Habermas & Bluck, 2000).

The CLS is measured by asking for the seven (or ten) most frequent events in a typical life within a given culture. The CLS is characterized by high agreement between members of a culture in the choice of life script events and the estimation of typical ages, reflecting its shared nature (Berntsen & Rubin, 2004). Given the (mostly) normative nature of the CLS, positive events prevail; a majority of mostly positive events typically occurs between the ages of 15 and 30 years, the so-called bump in the event-by-age distribution, whereas negative events are equally distributed across ages (e.g., Zaragoza Scherman, 2013).

The CLS is conceptualized as an integrated cognitive structure which is acquired as a whole script, and not stepwise through experiencing each single life events personally. Berntsen and Rubin (2004) introduced the convention to term all events named by at least 4% of participants *CLS events*. CLS are fairly homogenous within cultures and differ between countries in only few life events (e.g., Zaragoza Scherman et al., 2017). Within cultures, the CLS does not differ between men and women (Bohn & Berntsen, 2008; Erdoğan et al., 2008; Janssen et al., 2014) except for a culture with highly unequal gender roles (Qatar: Ottsen & Berntsen, 2014). Therefore, studies establishing adult life scripts often use samples not balanced in their gender composition.

Little is known about when and how the CLS is acquired. Besides an increasing agreement on normative ages for normative life events between ages 8 and 16 (cf. Habermas, 2007), which we could not measure

with the method chosen here, we review four indicators of the CLS that may develop with age: Knowledge of CLS events, agreement on that knowledge, the chronological sequencing of CLS events, and the young adulthood bump in the age distribution of CLS events.

One essential element of the CLS is knowledge of which life events are deemed biographically salient enough in a given culture to be included in the CLS. This has been tested in two ways. Habermas (2007) asked 8- to 20-year-old Germans to decide for each of 40 life events whether they should be included in a life narrative. Agreement with adults improved up to age 16, with the largest increase between ages 8 and 12. Bohn and Berntsen (2008) asked 9-, 11-, and 14-year-old Danes for the CLS. The 9-year-olds produced the most atypical LS (low knowledge of CLS), and both the 11- and the 14-year-olds' LSs were half-way between the youngest' and the adults' CLSs, indicating that acquisition of the adult CLS continued after age 14. Using the same CLS norm, Bohn and Berntsen (2013) confirmed an increase of CLS-knowledge across adolescence, finding a continuous increase of life script typicality between ages 9, 11, 12, 14, and young adults.

A second indicator of the acquisition of the CLS is that people agree on the CLS events (Berntsen & Rubin, 2004). However only in one (Bohn & Berntsen, 2013) of three relevant studies (Bohn & Berntsen, 2008; Habermas, 2007) did the homogeneity of subjective CLS within age groups increase with age in terms of the variation of answers corresponding to the adult CLS. Another measure of agreement used here for the first time is the percentage of participants naming the ten events that were most frequently named in each age group. The first Danish study (Bohn & Berntsen, 2008) showed a clear continuous increase with age, with a large increase between the 9- and the 11-year-olds (40.7%, 49.8%, 51.4%, and 55.0% in the young adults – calculated on the basis of Table 3 in Bohn & Berntsen, 2008; in the second study percentages were comparable: 40.8%, 50.4%, 50.6, and 51.6%; Annette Bohn, personal communication to third author, March 28, 2019).

A third characteristic of the CLS is that it orders life script events chronologically (Berntsen & Rubin, 2004). This is reflected in high individual correlations between events' estimated ages and the order in which events were nominated (Zaragoza Scherman et al., 2017). This aspect of life scripts has not yet been tested developmentally.

A fourth characteristic of the CLS is the above-chance concentration (bump) of life events in the third decade of life (Berntsen & Rubin, 2004;

Zaragoza Scherman, 2013), and a preponderance of positive and normative transitional events in that period. The expected increase of these two indicators among CLS-nominations with age has not yet been studied.

In addition to these indicators of the acquisition of the CLS, we study a fifth contention about its acquisition, namely that it is an integrated structure, all parts of which are learned at roughly the same pace, and not event by event as they are personally experienced (Berntsen & Rubin, 2004). One study (Habermas, 2007) confirmed this expectation for knowledge of biographical salience, and showed that age norms were learned on the basis of personal experience only until the CLS was acquired as an integrated entity, thus overall confirming its unitary structure.

Thus, to date the evidence for the acquisition of the knowledge of age norms and of CLS events is based on two indicators, the knowledge of which events are part of the LS and of age norms for them, showing that even grade school children have some knowledge and that the knowledge increases up to mid-adolescence. It is unclear at which age the acquisition of biographical knowledge begins and when in adolescence it is accomplished. The available developmental evidence is limited to Danish and German samples.

Therefore, we designed a study of the timing of the acquisition of biographical knowledge. We used the CLS as a measure. The CLS-instructions do not allow measuring knowledge of age norms, because participants do not all provide normative ages for the same events, but only the ones they individually nominated. In addition to replicating earlier developmental findings in a Southern European culture, we extended the lower age range to age six to explore when the acquisition of biographical knowledge begins. Finally, we tested CLS acquisition with two additional indicators.

To create a normative Portuguese CLS, Study 1 was carried out with young educated adults. Study 2 analysed the development of the CLS between ages six and 16.

Study 1

Method

Participants

A total of 261 young adults (211 females, 50 males; mean age 21.22 years, *SD* = 3.26, age range 17–33 years) had completed a mean of 13.72 years

(*SD* = 1.29) of education. They were fulltime students (88.3%) of a variety of disciplines at the University of Porto.

Procedure

Participants were addressed on campus and tested in groups by the first author; additional participants were a snowball sample based on recommendations by students and tested individually. Participants provided written informed consent.

Material

Participants received a booklet containing life script instructions followed by questionnaires not reported here. They wrote down the seven most important events likely to occur in the typical life of a child of the same culture and gender: Instructions for Study 1 were adapted from Rubin, Berntsen, and Hutson (2009): '*Imagine a typical child's life, not a child that you actually know but rather an ordinary child of your gender, within our culture, with a fairly typical life ahead of her/him. Your task is to write down the seven most important events that you imagine are most likely to occur in the prototypical life of that child from birth to death. Write down the events in the same order they come to your mind.*' The first column of Table 1 shows the ten most frequently nominated events in this study. For all events participants indicated the age at which they expected it to happen and its valence from −3 (*extremely negative*) to +3 (*extremely positive*). Four participants named up to three fewer events.

Event categories

The 86 event categories initially coded included 36 categories proposed by Berntsen and Rubin (2004). Remaining categories were generated by two judges (second and last author) on the basis of the most frequent answers. They coded 30% of questionnaires independently (interrater reliability K = .88), the remaining events were coded by one coder. In Supplemental Material 1 we only included categories that were named by at least 4% of participants in any given age group.

Construction of adult biographical norms

To construct the CLS, we used all 36 events that were named by at least 4% of all participants (life script events – see supplemental

Table 1. Ten most frequently named events by age groups and relative frequencies (%).

Young Adults	%	15–16 year-olds	%	13–14 year-olds	%	11–12 year-olds	%	9–10 year-olds	%	6–8 year-olds	%
HAVING CHILDREN	66.7	HAVING CHILDREN	68.0	HAVING CHILDREN	48.0	HAVING CHILDREN	53.3	Own Death	67.3	Own Death	75.6
BEGIN SCHOOL	64.0	BEGIN SCHOOL	40.0	BEGIN SCHOOL	48.0	Own Death	51.1	OWN BIRTH	34.7	Accidents	48.9
MARRIAGE	60.2	RETIREMENT	40.0	FIRST JOB	48.0	MARRIAGE	40.0	HAVING CHILDREN	33.5	MARRIAGE	46.7
COLLEGE	50.6	MARRIAGE	*36.0*	MARRIAGE	40.0	BEGIN SCHOOL	36.0	Accidents	28.6	Be rich	42.2
FIRST JOB	45.6	OWN BIRTH	*36.0*	COLLEGE	32.0	Serious Disease	35.6	MARRIAGE	24.5	HAVING CHILDREN	40.0
FALL IN LOVE	28.0	BEGIN WALKING	*36.0*	BEGIN WALKING	28.0	FIRST JOB	26.7	Serious Disease	24.5	Owning a Pet	37.8
BEGIN DAYCARE	20.7	FIRST JOB	32.0	FALL IN LOVE	*24.0*	OWN BIRTH	26.7	BEGIN SCHOOL	22.4	Being Assaulted	28.9
OWN BIRTH	19.5	FALL IN LOVE	*28.0*	Own Death	*24.0*	BEGIN WALKING	*22.2*	Baptism	*18.4*	OWN BIRTH	24.4
RETIREMENT	18.8	Own Death	*28.0*	Developing mentally and physically	*24.0*	Parents' Death	*22.2*	First Communion	*18.4*	Work Life	17.8
BEGIN WALKING	18.4	Go to School	*28.0*	1. BEGIN DAYCARE 2. Own Birth 3. Go to School 4. Begin Talking 5. Serious Disease 6. Finishing College	20.0	1. FALL IN LOVE 2. Finishing College 3. Accidents	20.0	Events with one's Family	*18.4*	1. Losing one's job 2. Serious disease	15.6

Note. Capital letters indicate event that is among the ten most frequent in the adult CLS. Italic number signal tied ranks. Position ten lists several events in the case of tied ranks.

material 1, first column; percentages were rounded to the nearest integer). To measure how typical an individual's set of nominations of LS events was for the whole group's aggregated CLS, we calculated a life script typicality (LST) score (Bohn & Berntsen, 2013; see supplemental material 2) by weighing each nominated event by its relative frequency in the entire sample, averaging these values across all events and multiplying by 100; LST scores potentially range from 0 to 100.

Results

We compared the CLS to that of an unpublished study (Alcobia, 2015) with 186 adults from Lisbon covering the entire adult age range, resulting in a large overlap of seven of the top 10 events; two of the three non-shared events were on positions 11 and 12 in this study, confirming the cultural homogeneity of the CLS in Portugal.

The mean proportion of CLS events was 85.16% (SD = 30.21), and the mean LST score was 30.15 (SD = 9.95). We recalculated LST scores of other studies. The Portuguese LST scored at the lower end of homogeneity, roughly comparable to values in metropolitan Turkey (30 in Erdoğan et al., 2008; 32 in Hatiboğlu & Habermas, 2016), and in Denmark (31 in Bohn, 2010) and Germany (28 in Hatiboğlu & Habermas, 2016), but lower than in other studies conducted in Denmark (40 in Bohn & Berntsen, 2008 and Rubin, Berntsen & Hutson, 2009) and provincial Turkey (38 in Hatiboğlu & Habermas, 2016).

Study 2

To study when and how CLS knowledge is acquired with age, we included six-year-olds. We cross-sectionally tested the development of four indicators of CLS, hypothesizing that (1) knowledge of CLS is acquired between childhood and mid-adolescence; (2) the homogeneity of subjective CLS within age groups increases with age; (3) the order in which events are nominated becomes more chronological with age; (4) the bump typical for adult CLS develops with age. In addition, (5) biographical knowledge is acquired simultaneously for all CLS events independent of their normative age.

Method

Participants

A total of 184 (104 females, 57%) children and adolescents from grades 1 through 10 of a private Catholic school in rural Northern Portugal were divided into five age groups:: 45 children (21 female) between 6 and 8 years (M = 7.36, SD = .74), 46 children (27 female) 9 or 10 years (M = 9.54, SD = .50), 43 children (30 female) 11 or 12 years (M = 11.49, SD = .51), 25 children (15 female) 13 or 14 years (M = 13.52, SD = .51), and 25 children (11 female) 15 or 16 years (M = 15.32, SD = .48).

Procedure and material

Parents and adolescents provided informed consent. Children younger than nine years were interviewed individually and older participants filled in questionnaires in small groups, supported by the second author. Participants answered the same tasks used in Study 1; only life script instructions were simplified, substituting 'child' by 'person'.

Results

We listed the ten most frequent events for each age group in Table 1 to illustrate the differences between them. The younger the group, the fewer of the adults' ten most frequent events remain among the ten most frequent ones, whereas the proportion of events that are not mentioned by at least 4% of the adults increases with decreasing age, such as 'developing physically and mentally', 'begin talking', 'parents' death'.

Hypothesis 1: The Cultural Life Script is acquired between childhood and mid-adolescence.

Individual LST scores were calculated using the adult CLS norm established in Study 1. There were no significant gender differences (t(182) = −1.14, p = .25, d = .17, 95% CI [−5.10, 1.36]). We tested differences between the five age groups in an analysis of variance (ANOVA), not including adults, because they had been used to establish the norm. Only for descriptive purposes we include the adult values when describing results. Overall age differences were significant, F(4,179) = 8.78, p < .001, partial η^2 = .17, as was the planned linear contrast (contrast estimator = 9.67, p < .001; r = .38). Figure 1 shows the steepest increase between ages 10 and 11, levelling off after age 14.

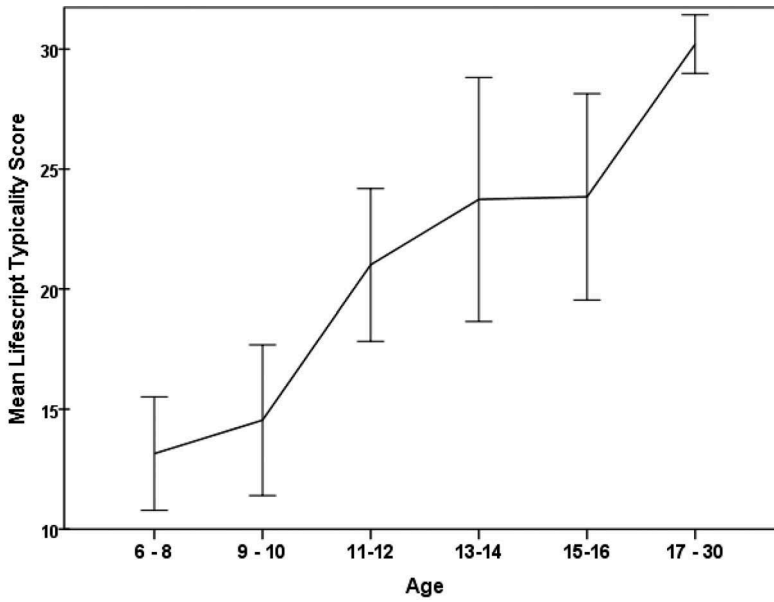

Figure 1. Mean life script typicality scores by age group and confidence intervals (95%).

Hypothesis 2: The homogeneity of CLSs within age groups increases with age.

An increase of the agreement on the CLS is indicated by increasing homogeneity, or decreasing variability of answers within age groups. The standard deviation of LST scores differed by age group in the Levene test, (F (4,179) = 2.61, p = .037), but not in the expected direction (with increasing age: SD = 7.88, 10.58, 10.32, 12.31, 10.43; adults: 9.95). Thus, the youngest agreed most in their nominations, even more than young adults. Another indicator of the variation of individual life scripts in age groups is the proportion of all nominations that cluster in the respective top 10 categories, excluding the residual category 'other'. Again, the youngest had the least variation: with increasing age 63.3%, 46.4%, 49.6%, 48.0%, and 53.1% (adults: 56.4%) of all nominations were amongst the respective top 10 event categories of each age group (see supplemental material 1). Thus, variability of life script events unexpectedly did not decrease with age, but was lowest in the youngest group. This may indicate that children used other criteria than a normative life script for event selection that are nevertheless shared by their age group. This sharing of selection criteria does not necessarily indicate the influence of a norm, but could also result from images of life guided by, for example, fairy tales or wishful thinking, which we explore below.

Hypothesis 3: The life script becomes chronologically organized with age.

Mean rank correlations between estimated ages of events and the order of their naming were for ascending age groups τ_r = .55, .79, .99, .91, and .88 (N = 45, 46, 43, 25, 25). Thus, as expected events were increasingly named in chronological order from childhood to pre-adolescence.

Hypothesis 4: The early adulthood bump develops with age.

For positive events, the Portuguese CLS provided by young adults is somewhat atypical by showing a maximum in the first decade (but cf. Ottsen & Berntsen, 2014) and only a relative bump in the third decade (Figure 2(a)). The pre-adolescent and adolescent age groups' age-at-event distributions are flatter but similar to the adult one, whereas children have a maximum in the fourth decade and another, lower bump in the first decade. This is due to the mis-timing of events like marriage and to child-typical events like being rich. Thus, with age there is an increasing convergence with the age distribution of events in the adult CLS. However, again there is an unexpected finding for children.

Negative (and neutral) events were, as was to be expected, equally distributed across the life course in the adult CLS (see Figure 2(b)). The younger groups also distributed negative events equally across life periods except for adolescents who amassed negative events in their present life phase, possibly suggesting that adolescents are going through an especially rough period themselves.

In addition, to test whether with age participants named more positive and normative events, we calculated correlations of their respective relative frequencies with age, resulting in the expected positive correlations (r = .36 for positivity, .25 for normativity).

Hypothesis 5: The life script is acquired as an integrated concept and not step by step as events are personally experienced.

We calculated two separate LST scores for events normatively happening up to two years ahead of participants' own age and for all other events; these events had to be named by at least 4% of adults and to have a standard deviation of age below ten years in Study 1 (see supplemental material 2). In a repeated measures ANOVA with both indicators as

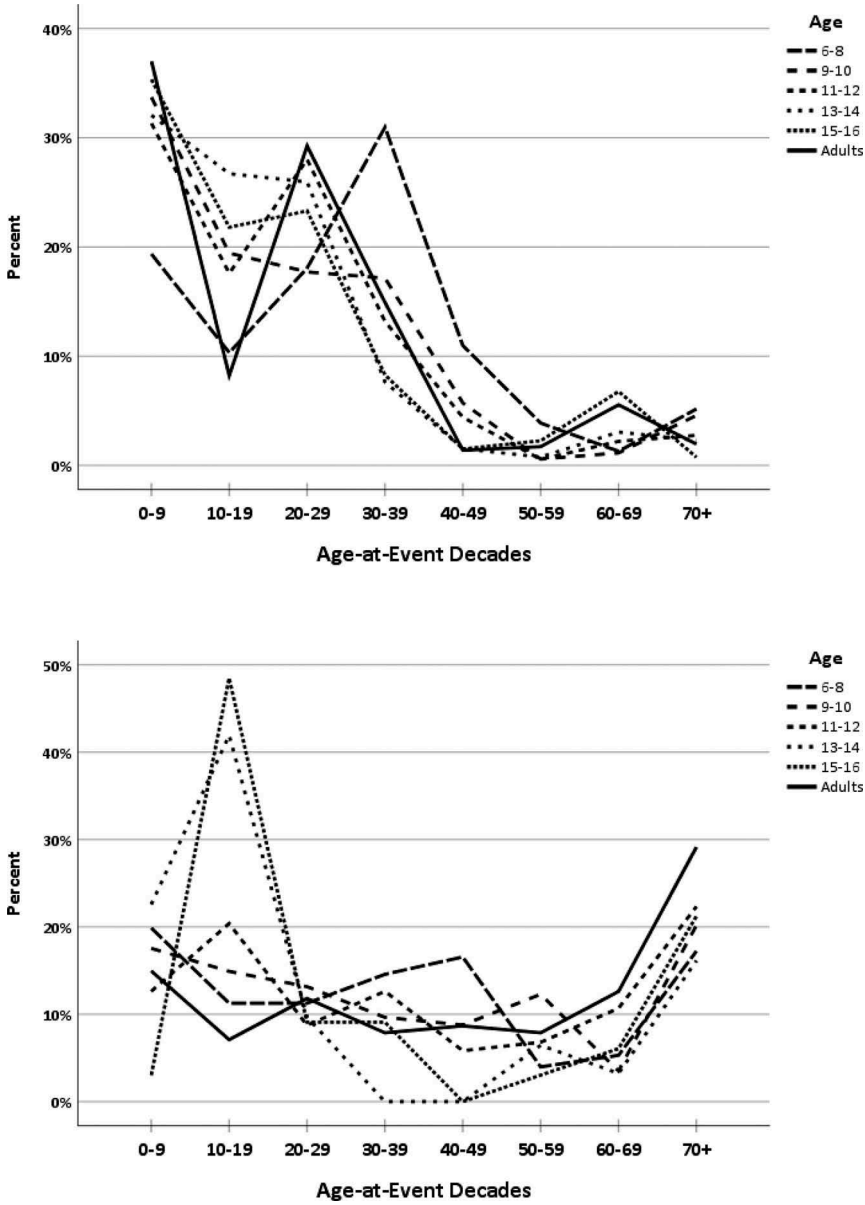

Figure 2. (a) Frequency distribution of positive event nominations for age-at-event decades by age groups. (b) Frequency distribution of negative and neutral event nominations for age-at-event decades by age groups.

dependent variables and age groups as only factor, the difference between both indicators was significant, $F(1,179) = 18.59$, $p < .001$, partial $\eta^2 = .09$, as well as its interaction with age, $F(4,179) = 3.16$, $p = .015$, partial

η^2 = .07 (as was age, in line with results for hypothesis 1; see Figure, supplemental material 3). Thus, in all but the second youngest age group life script events that could have been personally experienced were nominated less frequently than events in the personal future. The finding confirms that the LS is not primarily acquired through personal experience.

Exploration of children's selection of events for the CLS

We made the observation that LS-event nominations in the youngest group were more homogeneous than in older groups, contradicting hypothesis 2. Also, they did show a bump in the age-at-event distribution of events, but a different one from the adults. Therefore, we explored ages and content of the LS events of the youngest group to identify rationales they may have used for selecting events other than the CLS.

To check for differences in the ages of selected events, we calculated mean ages of events for ascending age groups: 33.7, 27.3, 26.8, 20.0, and 21.8 years (27.0 in adults). Thus, the youngest participants nominated events that happen the latest in life.

We compared the content of the ten events most frequently named in the life script task in each of the age groups (Table 1). Among the eleven events most frequently nominated by the youngest group, only three overlapped with those of the adult and almost all other groups (*marriage, having children, birth)*, and three more overlapped with at least the two next older groups (*own death, accidents, serious disease*), while *being rich, owning a pet, being assaulted, work life*, and *losing one's job* were specific to the youngest' top eleven. Out of children's eight top 11 events that were not among the adults' top 10, only *own death* was a CLS event (nominated by at least 4% of the adults). Four of the remaining seven events were negative. One remaining category very broadly refers to work life, while the other two events are positive and more (*being rich*) or less fantastic (*owning a pet*) wishes about adulthood. Not one of these eight is a normative event.

Discussion

There are three developmental findings from our study. The first is a replication and extension of earlier findings that the CLS is acquired in the course of pre- to about mid-adolescence; in terms of overlap of events with the adult CLS (life script typicality), in terms of a chronological

ordering of events, and in terms of the bump in the event-age distribution. The main gains in knowledge of the CLS are made between ages 9 and 12. This is in line with the acquisition of temporal coherence in life narratives by early to mid-adolescence (Köber et al., 2015). We cannot draw a firm conclusion regarding the age at which the adult CLS is finally acquired, because both this and Bohn and Berntsen's studies lacked adult groups other than the one that defined the normative CLS.

Secondly, we replicated the finding that CLS is not primarily acquired on the basis of personally experiencing the CLS-events, which supports the original contention that it is acquired as an integrated structure. This apparently contradicts that university students reported as one possible source of knowledge about the CLS having personally experienced the event (Janssen & Haque, 2018). However, they also named witnessing these events in others and learning about the life course through TV and movies. In addition, these self-reports were retrospective assessments.

The third developmental finding is that although children have not acquired the adult CLS, they do not answer at random but agree upon a qualitatively different image of life. This is a problem for life script theory because it could mean that younger individuals do not simply lack a CLS, but might just have a different shared LS. However, children's choice of events is apparently guided by other than CLS-criteria. Adults mostly select normative transitions that are positively valued and define identity transformations in a prescriptive life course. Children also name some family-related transitions like marrying, having children, and dying. The majority of children's events were, however, non-normative. This means that although the CLS-criterion of high agreement on LS-events (Berntsen & Rubin, 2004) is a necessary condition, it is not sufficient. Among the ten events most frequently named by children in the CLS task were four negative pitfalls of life: accidents, being assaulted, losing a job, serious illness. Apparently these are major events in children's lifeworld. They may have experienced some of them themselves, others they more likely have witnessed in adult family members. The two positive non-normative events, having a pet and being rich, may reflect children's dreams and wishes. As is to be expected, the ages named for these non-normative events vary widely, so that mean ages all lie in the adult age range, even for events from children's own experience such as having an accident or having a pet.

Apparently, children share a fantasy world of feared and wished-for things that might happen in life. We speculate that these events are

derived from the stories they hear, both real-life and fictional (Nelson, 2007). Accidents and assaults also reflect the physical character of children's life world.

However, despite the homogeneity of nominations, the youngest do not simply have a life script different from adults, but their idea of a life lacks important qualities of the CLS, namely both a normative character and the sequential structure of normative transitions. Children have not yet acquired a concept of the life course or biography as a temporally structured sequence of interdependent events with a direction. Therefore, they cannot use their agreed-upon elements of a normal life to narrate their past (Köber et al., 2015) and to plan their future lives (Bohn & Berntsen, 2013).

Limitations

The adult sample in Study 1 did not exactly match the younger sample, because it was socially selective by comprising mostly university students. Study 1 shares this weakness with most other studies of adult CLS undertaken with students. The unequal representation of genders in Study 1 is negligible because there are no remarkable gender differences in the CLS. Participants in Study 2 were from a Catholic school, which might have favoured naming religious rites; however, this specific school is not a privileged institution, but supplies schooling in lieu of the public system. Finally, the two older adolescent age groups were smaller than the three younger groups, possibly leading to less stable results for these higher ages. However, what this study adds to the literature regards the lower age groups which were fairly sizable.

Implications

The new finding of this study is a shared view of a typical life in childhood that is qualitatively different from the adult CLS. It appears to be a mixture of wished-for and feared version of a life rather than a practical guide to how one should advance through critical transitions in life. This finding needs to be replicated in culturally and socially diverse young samples. To test the interpretation that children's agreed-upon version of life lacks the normative quality of the CLS, future studies will need to actually measure the normativity of life event nominations instead of relying on agreement as an indirect indicator of normativity.

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