

Chapter 2

The Evolvment of Future Orientation: Infancy Through Middle Childhood

Although especially relevant to the adolescent period, the capacity for orienting to the future is innate, identified in early infancy, and – as already noted in Chap. 1 – underlying it are neurophysiological processes generated in the cerebral cortex (Brunia & Boxtel, 2001; Wentworth, Haith, & Karrer, 2001). However, interacting with other innate abilities (such as memory and language), interpersonal experiences, and cultural values its expressions vary with age. Given that much of this book applies to adolescence and emerging adulthood, the key questions addressed in this chapter pertain to the developmental periods from infancy to middle childhood. Specifically they ask what are the early indications of future orientation in infancy, how do language, memory, and interpersonal factors in early childhood affect the notion of future and future thinking, how do various aspects of future orientation develop in middle childhood, and how do they change their expression, scope, and instrumentality?

Future Orientation in Infancy

For Haith and his colleagues, the early precursors of future orientation can be identified as early as at the age of 2 months in the form of anticipation of events indicated by *eye movements* and assessed in laboratory experiments (Adler & Haith, 2003; Haith, 1994; Haith, Benson, Roberts, & Pennington, 1994; Haith, Wentworth, & Canfield, 1993). Three main considerations led to the selection of the eye movement rather than of other non-verbal indicators present at birth, or shortly afterwards (Haith, 1994; Reznick, 1994): that the indicator is closely related to the relevant perceptual systems, controllable from birth, and fast. Eye movements also have the advantage of being responsive to auditory stimuli, stable over the life span, and easily recorded.

The assessment of infants' future orientation. The prototypical experiment examines infants' visual anticipation by performing the following procedure. Babies are presented with pictures, using one of two sequences: *regular alternating* and *irregular sequence*. The regular alternating sequence consists of repetitious picture presentations in which an image appears at one location, disappears, and reappears in another location.

In the standard visual expectation paradigm (VExP) experiment (Haith, 1994) pictures are shown repeatedly one to the right and one to the left of a visual center, separated by the same duration of interstimulus interval (ISI), and infants' future orientation is defined in terms of two behavioral criteria: anticipatory fixation (prior to appearance) to the side on which the picture is expected to appear, and reaction time (RT). The control condition consists of the same paradigm and stimuli but the duration of the ISI and the location of the pictures are random and hence unpredictable. Running this experiment, Haith, Hazan and Goodman (1988) demonstrated that, when provided with regular left-right presentation sequence, 3.5 months old babies anticipate the visual image more accurately (assessed by percentage of anticipations) and faster (assessed by reaction time) than do babies in the control condition.

Infants' anticipatory behavior: How early? How generalizable? To show that these findings indicate infants' capability for anticipatory behavior, Haith and his colleagues had to answer three additional questions. How *early* can anticipatory behavior be identified? What conditions *facilitate* (or hinder) infants' anticipatory behavior? Can anticipatory behavior formed at one time and task be *generalized* to another time and a related task?

In a series of carefully designed experiments, Haith (1994, 1997) showed that, when presented with the basic L-R design, 2-month old babies are able to anticipate spatial location. Nonetheless, visual anticipatory behavior is moderated by task demandingness. Thus, whereas by 2 months babies can anticipate only the basic design, by 3 months of age their capability improves so that they can anticipate series of up to two events (L-L-R-R design) occurring in the same location. Similarly, designed experiments demonstrate that as early as 2 month of age, stable picture content facilitates higher anticipation rate, and for the 2- but not 3-month old babies, also faster reaction time (Wentworth & Haith, 1992).

In more recent studies Haith and his colleagues demonstrated that 3-month-old infants' anticipatory behavior is facilitated by regularity of content and location of picture. Thus, regularity of content across a class of related but distinct events (i.e., stimuli of the same color but different shape and pattern) (Adler & Haith, 2003) and spatiotemporal regularity by which pictures are presented, as well as inter-event contingency (created by contingency between central picture and peripheral pictures to the left or to the right of the central picture) (Wentworth, Haith, & Hood, 2002) all facilitate infants' anticipatory behavior.

Finally, a crucial question about the anticipatory behavior of infants has been how generalizable is accumulated knowledge to other times and other tasks? Experiments run by Haith and his colleagues (Haith, 1997) showed that, by 3 months of age, infants extended their expectations for several days, and improved anticipation and reaction time of a related task of vertical (rather than the original horizontal) eye movement.

The developmental trajectory of anticipatory behavior. A particularly relevant question for this discussion is the developmental trajectory of anticipatory behavior during the pre-verbal period: does anticipatory behavior grow easier (i.e., higher anticipatory behavior rates) and faster? Can it be manifested under conditions that require overcoming obstacles? Experiments that used the VExP with older babies

showed inconsistent trends: RTs went down with age both for 6-month- (Jacobson et al., 1992) and for 8-month-olds (DiLalla et al., 1990). However, percentage of anticipation was higher for the 6- than for the 2- and 3-month-olds, albeit also for the 8-month-old babies. Thus, as babies grow up their anticipatory RT goes down, but toward the last third of the first year, fewer (19.3% and 17% according to Benson et al. and DiLalla et al., respectively, compared to 28.1% of the 6-month-olds) exhibit this behavior.

Contending that these experiments created for the babies an unrealistic environment devoid of competing ongoing stimuli, Reznick (1994) designed an encumbered anticipation experiment in which, during their first year of life, infants anticipated an event that was “potent enough to disrupt attention to an ongoing event” (Reznick, 1994, p. 45). His participants were 4-, 8-, and 12-month-old babies, and the stimulus materials used were two successive panels of red, green and yellow lights and two boxes each housing a mechanically operated cheerleader bear. These materials were obviously considerably different from those used in the standard procedure and its modifications, and their use showed that 4-month-olds were unable to engage in encumbered anticipatory behavior, and 8- and 12-month-olds only rarely. However, for the 12-month-olds, encumbered anticipation occurs more often when the stimulus event is the panels, obviously less interesting than the “cheerleading” bears.

Finally, the question raised by findings on infants’ visual anticipatory behavior is what are the adaptive and developmental functions of anticipatory behavior? Why should babies engage in it? On the face of it, such behavior is gratuitous and for the 2- or 3-month-old baby serves no purpose; it does not bring mother any closer or make any of her services – such as food or clean diapers – more available. In light of this, Haith (1994) posited three ways in which infant anticipatory behavior serves adaptation and development: it speeds up information processing (see also Adler & Haith, 2003 on infants’ visual anticipation in the service of efficient processing of event information), it may provide the infant with a sense of control, and finally, it serves as the early manifestation of and foundation for future orientation. For future orientation researchers, particularly relevant is the third conjecture positing that by engaging in visual anticipatory behavior infants introduce themselves to the notion and meaning of “future” long before they can verbally demonstrate it.

Future Orientation in Early Childhood

As appealing as Haith’s conjecture is the relevance of infants’ visual anticipatory capabilities to the future thinking and behavior of older children is at present not known. Moreover, as children acquire language, the theoretical approaches on which future orientation research draws, the research questions investigated, and the indicators used by researchers change. Consequently, the definitions of future orientation and its indicators abound.

Despite diversity of conceptualization and assessment methods, underlying the various approaches is a common understanding that future orientation is about the

projection or extension of the self into the future (Moore & Lemmon, 2001) and that beyond infancy its expression and assessment are mainly (though not solely) verbal. Moreover, it cannot be developed without the child's grasp of the concept of time as it applies to order codes and locations in represented time patterns (Friedman, 2005), ability for verbal representation, and discourse socialization (Hudson, 2001, 2006; Nelson & Fivush, 2004).

Given that the development of future orientation in early childhood is contingent on knowledge of time (Suddendorf & Corballis, 2007) through social discourse embedded in cultural context, this section is devoted to three main issues: children's sense of the future, planning behavior, and the socialization of future thinking in mother-child interaction and children's literature.

Children's Sense of the Future

Children's knowledge of the future emerges from their sense of time. Given time continuity, one of their first challenges is to differentiate between already occurred and anticipated events and experiences. This task is challenging not only because tomorrow is the yesterday of the day after tomorrow but also because reconstructing the past and anticipating the future both involve *mental time travel* (Busby & Suddendorf, 2005; Suddendorf & Busby, 2005; Suddendorf & Corballis, 1997, 2007). Hence, this section opens with research on the differentiation between past and future, continues with children's knowledge of future events, and concludes with the evolvment of children's episodic future thinking.

Differentiating between past and future. Although at this age children can use correctly temporal terms associated with the past (*yesterday*) and the future (*tomorrow*) (Nelson, 1996), they still encounter difficulties in differentiating between the two time periods. This tendency has also been noted by Friedman and Kemp (1998) who observed 3- to 6-year-old children attribute their semantic knowledge of "coming soon" to "short time ago". Three reasons may account for this difficulty: the future consists of events that have not yet taken place (Hudson, 2001), children use temporal language before they fully grasp the meaning of temporal terms (Nelson, 1996), and children are distracted by adults' discourse that often changes the location of events from the future to the past (and vice versa). To illustrate, until the event (e.g., Valentine Day, the child's birthday), parents and teachers repeatedly refer to it as occurring in the future ("coming soon") and thus create interference of memory processes that cause children to confuse the recent past with the near future (Friedman, 2000).

Children's knowledge of future events. Children's ability to handle future events develops gradually. This has been demonstrated in a series of experiments by Friedman and his colleagues in which children's knowledge of the future is tested vis-à-vis three tasks: their ability to arrange the temporal order of daily activities, to understand duration (duration knowledge), and estimate future time distances.

Children's ability to arrange the *temporal order* of daily activities (Friedman, 1990) is studied by presenting the children with four cards that depict four daily activities: waking, lunch, dinner, and going to bed. In the first experiment, 3- to

9-year-old children are instructed to order the events within the day forward and backward (reverse order). Findings show that children 4 years or older are able to construct a forward order, and children 5 years or older are also able to construct the reverse order at above chance levels.

While the main purpose of this experiment has been to examine children's ability to arrange activities they practice daily according to their temporal order, the experiment can also examine the extent to which present orientation affects children's temporal ordering of daily activities. Its findings show that only a few children start the sequence of the daily activities from the time of the day in which the experiment take place, but the majority of those who do so are from the 4-year-old age group. Six of the 10 4-year-old participants tested during the morning hours start the *forward* ordering of daily activities with lunch. Thus, not all young children are able to perform the temporal ordering of the daily activities independently of the time of the day in which the task is performed.

In a second experiment, nursery school to third grade children (4–9 years old) are presented with different reference points (e.g., waking in the morning, eating lunch) and asked to judge which of two daily activities comes next going forward and which comes next going backwards in time. Results show that all children are able to judge forward relative order at above chance levels; by first grade they are also able to perform the backward ordering at above chance level.

The third experiment was designed to examine another aspect of children's sense of the future: *duration knowledge*. The task is to judge the length of intervals separating six daily activities: waking in the morning, breakfast, lunch, dinner, bath, and going to bed. The effect of age is observed in the results of this experiment as well. As children (3–9 years old) grow older, their ability to judge the interval between different daily activities becomes more differentiated, more accurate and less varied (as indicated by standard deviations) within each age group. Correlation coefficients between children's judgment and an estimate of the true length of intervals between each two activities go up gradually from 0.21 for the 3- and 4-year-olds to 0.76 and 0.71 for the 8- and 9-year-olds.

To examine children's *estimates of time distance*, Friedman and his colleagues developed a set of experiments in which children's ability to locate correctly *anticipated events* along a future time axis is tested. These experiments show that children are capable of distinguishing between near and distant future events only when they reach the age of 5. By age 7 many children can tell correctly the number of days until the weekend, but not the number of months to a distant holiday. Like the 5-year-olds, they can make only global distinctions regarding the location of future time: events are classified by them either as expected to occur in the near (short time) or in the distant (long time) future (Friedman, 2005).

An instructive exception is their birthday which they can locate much more accurately, *if* it is coming within the next 2 months (Friedman, 2005). By age 10, however, children are able to order events such as holidays or seasons quite accurately, do it not only from a reference point of the present but also from other reference points, and describe distance into the future in conventional units such as months (Friedman, 2000).

Children's episodic future thinking. Just as episodic memory (Tulving, 1972, 1985) pertains to individuals' knowledge of their past experiences, episodic future thinking (Atance & O'Neill, 2001) concerns their ability to *project themselves into the future* and experience personal events before they have happened. To study it among young children, Atance and O'Neill (2005a,b; Atance & Melzoff, 2005) developed an experimental trip task in which children are asked to pretend they are getting ready for a trip and help their parents packing by choosing three of eight items displayed to them. The eight items (such as juice, Band-Aid, and telephone) were selected by the researchers because they satisfy four types of needs: physiological (e.g., hunger), physical (e.g., being injured), emotional (e.g., being bored), and emergency (e.g., needing communication).

The task was designed to satisfy the following criteria: (1) it incorporates the notions of self and future, (2) it involves a novel future event for which children are not expected to hold a script (as is the case in "bedtime" or "getting ready for school"), (3) it may be responded to with uncertainty terms, and (4) it does not require inhibitory control skills. Their findings (Atance & O'Neill, 2005a) show that at age 3, slightly over one third of the children are able to explain their choice of item by referring to a future need and/or its probable occurrence (using "if" or "maybe").

Two findings suggest that these children's ability to project themselves into the future is not related to linguistic ability but rather to non-verbal ability: association with a behavioral indicator (being able to draw a picture children stated they intended to) but not with general language ability (Atance & O'Neill, 2005b). Like other indicators of future knowledge, episodic future thinking improves with age: 4- and 5-year-olds do better on the trip task than 3-year-olds, and 5-year-olds are less distracted by semantic associates than are 3- and 4-year-olds (Atance & Melzoff, 2005). However, while children's episodic future thinking is affected by their ability to anticipate a future need, like in the case of adults, it may also be affected by conflicting current needs (Atance & Melzoff, 2006).

Summary. Although underlying future orientation are motivational, social-cultural, and cognitive processes, research on children's knowledge of the future focuses mainly (if not exclusively) on its cognitive aspects. Within this framework, researchers focus on such apersonal (semantic) aspects of the future like the ability to distinguish between past and future events, to arrange the temporal order of daily activities, understand duration (duration knowledge), and estimate future time distances, as well as their episodic future knowledge describing children's ability to think about personal events they have not yet experienced.

Much of this work agrees that future knowledge does not emerge before children reach the age of 3; some aspects of it – as expressed in their language and behavior – are obtained by age 5 but other aspects (such as order of the months of the year) only at a later age. Overall, children master different future timescales at different ages (Friedman, 2005). However, still missing is an integrated picture that shows how the apersonal and the episodic aspects of future knowledge are related and the extent to which they are affected by motivational and socio-cultural factors.

Two Approaches to Processes Underlying the Development of Future Knowledge

Common to the two approaches discussed here are questions about the early evolution of future orientation thinking, the age at which children first demonstrate future thinking, and the psychological processes underlying children's expression of future knowledge. While both approaches focus on cognitive processes, Friedman's model assumes knowledge of the future is based on representation of time patterns (Friedman, 2005) while Weist (1989) emphasizes how future knowledge is represented in children's language.

Friedman's model of spatial-like images. The purpose of Friedman's (1990) experiments has been to test three competing explanations. The first is that knowledge of the future can be explained by the "*temporal string*" model (Anderson, 1983) according to which order consists of unidirectional pointers between elements and their successors. The second explanation (Seymour, 1980) posits the possession of what Friedman described as semantic "*locative codes*" that facilitate adults' knowledge of the order of elements (e.g., months) in temporal patterns. The third model, suggested by Friedman, assumes that "the elements of a temporal pattern are represented in the form of *spatial-like images*" (Friedman, 1990, p. 1400) that individuals retrieve whenever engaged in activities requiring knowledge of the future.

Two considerations indicate the advantage of the image model over the other two. One is that all three experiments performed by Friedman can be explained in terms of the spatial-like images model but not in terms of the other two models. The second pertains to results of an introspective study (Schroeder, 1980) in which college students reported they possessed images of the times in a day. These temporal images allow adults and older children to perform "mental time travel" (Suddendorf & Corballis, 1997) which in turn explains how older children and adults can perform backward ordering of future events (Friedman, 2005).

The imagery model can also explain why young children confuse past and future (as demonstrated by their tendency to relate to certain events that already occurred as belonging to the future). If, according to Friedman (2000), 1 week after Valentine day 4- and 5-year-old children tend to locate it in the future rather than in the past, they have *not yet constructed a temporal imagery model*. In its absence, they rely on their memory from the days before Valentine day when adults referred to it as an anticipated future event. However, as children reach age 6 the distinction between past and future becomes clear and both are gradually internalized as parts of the temporal framework (Friedman, 2005).

Weist's theory of temporal systems in child language. Weist's theory (Weist, 1989) describes language acquisition as consisting of a sequence of four temporal systems each characterized by a network of three time concepts: event time, speech time, and reference time. *Event time* pertains to the event described by the speaker, *speech time* refers to the time in which the speaker is producing the sentence, and *reference time* specifies the time of the event ("today", "the day after tomorrow", "when I grow up").

The first temporal system, characteristic of children younger than 1;6 (one-and-a-half years old) is the *speech time system*. At this developmental period language is mainly restricted to the child's immediate perceptual environment and hence children do not differentiate between event time, speech time, and reference time. Instead, both the event time and reference time are bound to speech time. The second period (1;6 to 2;6) is characterized by the *event time system* in which children are able to use two time concepts: speech time and event time. By using both time concepts they are able to relate to past and ongoing events. However, to use Weist's illustration, when at this developmental period children say "Ernie fell off" or "Mummy painted the wall" they use both speech and event times but not reference time (when exactly did mummy paint the wall?). They can also, according to Weist, express desires and intentions and thus orient themselves toward the future, as is illustrated by a 1;10 girl's utterance (translated from the Polish): "Mommy will take it out".

The third period (2;6 to 3;0) is characterized by the *restricted reference time system*. The activation of this system facilitates the use of temporal adverbs ("yesterday", "tomorrow") and temporal adverbial clauses ("when you get back home") that signify the ability to use *reference time*. The fourth period (3;0 to 4;6) is characterized by the *free reference time system*; this system signifies children's ability to manipulate the speech time, event time, and reference time independently.

As the use of reference time becomes more flexible, children are able to use words like "before" and "after" and refer to events located at different points in time. To use Weist's example: "When asked what she had done earlier in the day, Monica (4;5) said: *"I just played with something and after that I just walked around a little"* (Weist, 1989, p. 68). Although Weist described the free reference time system as characterizing children as young as 3;0, most research findings suggest that the ability to use three temporal locations, necessary for using freely speech time, event time, and reference time appears only around age 4;0 (Benson, 1994).

If the use of time talk is indicative of cognitive development, then, according to Weist, children's orientation to the future may be expressed earlier than usually considered by researchers. Drawing on observations indicating that Polish children as young as 1;8 can produce sentences like "(I) will bring (something)" indicates, according to Weist, early expression of having a sense of the future. Moreover, "When children express a desire, obligation, or command, they have an expectation which concerns a state of affairs subsequent to speech time" (Weist, 1989, p. 91).

An empirical assessment of Weist's *four temporal systems of child language* adapted his systems to the study of children's (12–42 months of age) future time language (Benson, 1997). Diverting from the convention of experimental or observational procedures, Benson interviewed parents about their child's future language use and encouraged them to supplement their response with examples from the child's talk. Analyses indicated that parents' reports support Weist's developmental systems.

To illustrate, parents of 12-month-old infants said it was "sometimes true" that their child could perform future oriented behavior that corresponds to Weist's first system (e.g., "my child knows how to indicate that she or he wants desired things"). Parents of 42-month-old children said it was "always true" that their child could

perform behaviors that correspond to the first stage, and “sometimes true” they could perform behaviors corresponding to Weist’s fourth stage (“my child says that some things follow other things”).

Altogether, with increased age, children’s scores on each temporal system as well as their total scores went up. Thus, although she relied on parents’ information rather than on directly observing children, Benson’s method captured the developmental sequence of future talk in early childhood and gave additional support to Weist’s theory.

Planning Behavior in Early Childhood

As children acquire knowledge of the future and its verbal expression they can engage in more elaborate future oriented behavior such as planning. Its description as consisting of hierarchically ordered behaviors of goal setting and the organization of a sequence of actions intended to achieve the goal (Gauvain, 1999) as well as the execution of these actions indicates that not all aspects of planning are equally future oriented. While planning depends on its development (Benson, 1997), once a goal has been formed and the sequence of necessary actions for achieving it constructed, the execution of plans depends on memory and the development of monitoring skills (Hudson & Fivush, 1991) rather than merely on future orientation processes.

Levels of planning. Research on the planning abilities of young children describes a five level process (Hudson & Fivush, 1991) that builds on children’s event knowledge (Nelson, 1986) and proceeds from young children use of their knowledge about events (*generalized event representation*, GER) to creating a sequence of activities related to subgoals in familiar and novel situations. In its earliest stage (Level 0), children make use of their ability for GER in a manner that might be mistaken for early articulation of planning. What distinguishes this from subsequent levels is that, although children have acquired GERs of simple sequences such as daily routines and they use them to anticipate the sequence of familiar routines, they are still unable to meet the event-based planning criterion, namely, to fill in global event slots with goal-appropriate specific instances.

When they reach Level 1 (at about 3 years of age) that consists of a *single goal event planning*, children are able to use their GERs more flexibly and translate a general event into a specific instance of this event. To use Hudson and Fivush’s example, when describing their morning routine children are able to fill in the clothing slot with different items, depending on such external circumstances as whether it is a warm or cold day, a school or weekend day.

Level 2 pertains to *multiple event goal planning* indicated by children’s ability to attend to two simultaneous event goals and coordinate their planning. Thus, planning a shopping trip, children may plan buying food for breakfast and dinner. At level 3, described as *coordinated event planning*, children form subgoals – each of which has its own spatial-temporal sequence – and arrange them into hierarchical order, and at level 4, pertaining to *novel event planning*, children break down different events and use them to construct new action sequences.

Scripts and plans. While planning is based on general event knowledge, its distinctive feature is its future oriented aspect. Thus, from the point of view of this analysis, the relevant aspects of planning are the ability for goal setting, for relating goals to actions and activities that serve as means for the attainment of these goals, and engaging in preparatory activities. Therefore, studies that compare between scripts – that indicate event knowledge – and plans (Hudson, Shapiro, & Sosa, 1995; Hudson, Sosa, & Shapiro, 1997) and investigate children’s advanced preparations and the conditions that facilitate engagement in them (Shapiro & Hudson, 2004) are of particular interest here.

Do children behave differently when asked to tell about a task (*script knowledge*) and when requested to *plan* the performance of such a task? To assess it, Hudson et al. (1995) interviewed 3- to 5-year-old children about going to the beach and grocery shopping by reading to the children examples of either a script or a plan, followed by a request to tell the experimenter what happens when s/he goes to the beach or grocery shopping (script condition), or describe a plan for going to the beach or grocery shopping (planning condition). On a second trial, the experimenter asked each child on the script condition to tell her the first thing s/he *does* as she goes to the beach or grocery shopping, followed by questions on “what do you do next” until the child signaled s/he was done. Children assigned to the planning condition were asked what is the first thing they will *have to do*, followed by questions on “what do you have to do next”, until the child signaled s/he is done.

Results of this experiment show that the difference between the production of script and plan is age dependent. Employing the number of actions in a narrative as an indicator of reported information, 3-year-olds are better (i.e., their narratives consist of more action units) at producing scripts than plans whereas 5-year-olds do better on producing plans. Moreover, at this age range, production of plans, but not of scripts, is influenced by age so that 5-year-olds do better than 4-year-olds, and 4-year-olds do better than 3-year-olds.

Assuming that onset actions (e.g., go/drive there) indicate planfulness, their proportion (out of the total number of action units) indicates age differences as well as condition (script vs planning) and event (grocery shopping vs going to the beach) effects. Thus, older children who participate in planning (rather than script) going to the beach (rather than grocery shopping) use more onset actions. Moreover, for children of this age, then, the probability of thinking about future oriented actions depends not only on child characteristics and the nature of the task but also on the nature of the *event*, and particularly on its excitement or familiarity.

Planning novel tasks. Demonstrating the dependence of planning on the generalized event knowledge of children as young as 3 years, research carried out by Hudson and her colleagues made an important contribution. However, since planning more often than not applies to novel tasks, the next issue focuses on how children plan novel events to which generalized event knowledge (based on familiarity with events) cannot be applied. Putting it differently, the question is which factors compensate for the absence of event knowledge? Three factors are particularly relevant here: the first pertains to the *structure* of the event to be planned and the two others to the *what* and *how* of provided information. In other words, the second

factor pertains to the content of the information provided by the environment, and the third to *how* such information is being provided.

Event structure. The effect of the event structure was examined in a study (Shapiro & Hudson, 2004) of 3- to 5-year-olds whose task was defined as representing an enabling or a conventional event. Using Abelson's classification of events according to activities leading to the achievement of a superordinate event goal, Shapiro and Hudson defined the *enabling event* as consisting of a task with a sequence of actions and activities which are *logically* temporally invariant (e.g., waking up must be preceded by falling asleep), and the *conventional event* as consisting of a sequence of actions and activities which could in principle be varied, but are *conventionally* performed in an invariant temporal order (e.g., washing hands and eating).

Working with these two kinds of events, Shapiro and Hudson examined whether it is the logical links between activities or their convention that facilitates planning. Their findings show that, although the enabling event task consists of logically invariant temporal order which presumably enables planning, children who participate in this experimental condition make more errors than children who participate in the conventional event task. Shapiro and Hudson's explanation drew on the consequences of making a mistake on each of the two tasks: in the enabling task, one mistake inevitably led to subsequent ones and made the entire planning process more demanding, whereas in the conventional event task, one mistake did not necessarily disrupt the entire planning process and goal achievement.

Information content. To examine how information provided to young children facilitates their planning ability, researchers supplied children with three kinds of information: the end-state (Bauer, Schwade, Wewerka, & Delaney, 1999) or completed example of the project (Shapiro & Hudson, 2004), the initial step, and a sub-set consisting of two of the three-step sequence (Bauer et al., 1999). Findings of this research show that, for preschoolers, not all information has the same facilitating value. At 21 months of age, information about the *end-state* (Bauer et al., 1999) improves planning behavior, is more helpful than the same amount of information pertaining to the *initial step* in the sequence of activities, and does not become more helpful by an additional step (either the initial or the middle step). Thus, in the absence of generalized event knowledge, information about the end-state provided by an outside source is necessary and sufficient to facilitate planning.

Information channels. Transmission of planning-pertinent information is also multi-channeled. It may involve *observation* of another person – usually an adult – preparing the necessary items for executing the plan, *listening* to adults' explanations about necessary preparations (Hudson et al., 1997), or *sharing responsibility* with another individual – a peer or an adult – while working on a planning task.

Experiments testing the effect of these various channels show that for 3-year-olds, but not for others, the listening plus observing has an advantage over the observing-only channel. Work by Rogoff and her colleagues (Gauvain & Rogoff, 1989; Gardner & Rogoff, 1990) show the contribution of shared responsibility – be it with a peer or an adult – to effective planning behavior and particularly to the use

of preparatory activities such as advance scanning and to planning behavior effectiveness during a posttest (Gauvain & Rogoff, 1989).

In sum, future orientation is essential for planning for two reasons: goals are located in the future, and acts to be performed are hierarchically ordered. However, planning *behavior* depends on cognitive and interpersonal abilities that develop during early childhood.

Socialization of Future Knowledge

Obviously, underlying the construction of future orientation is a grasp of time concepts that, because of their abstract nature, are socially constructed and can be learned only in the context of social interaction. Specifically, children learn time concepts by listening and actively engaging in conversation about the future.

Mothers' time talk. For most children in the early childhood period, social interaction takes place in the home and particularly with mothers. Nonetheless, research about mothers' time talk is scant and descriptive. The few studies that have been carried out offer a consistent picture about the nature of time talk in general and about the future in particular (Hudson, 2001, 2002, 2006) and in fact explain why interest in these issues is so limited: mothers of 3-year-olds devote only 2% of their total talk to time talk (Norton, 1993). Nonetheless, analysis of their use of future talk has identified three distinct strategies.

First, unlike talk about the past, future talk is *age* dependent. To illustrate, as children grow from 14 to 36 months, mothers' talk about the future increases from 36% to 58% of time talk (Benson, Talmi, & Haith, 1999). Second, mothers' future talk is more *complex* than their talk about the past (which explains age differences in mothers' talk about the future but not about the past). It relates to generalized event knowledge rather than to specific events (that occurred in the past), consists of higher frequency of hypothetical language ("Maybe we will. . .", "Do you think. . ." "Would you like to have. . ."), and refers more often to conventional time markers ("tomorrow", "next week"). Third, mothers' future talk *actively engages children* in thinking about the future and planning and thus provides children with opportunities to learn time concepts and develop knowledge about the future (Hudson, 2002) as well as non-temporal tasks such as shared responsibility (Gauvain, 1999).

Given that as mothers engage their children in future talk they use different conversation styles, the next question is how these styles affect children's contribution to conversation about future events? Examining this issue, Hudson (2006) coded mothers' conversations with their 2.5- or 4-year-old children into categories that described type of utterance (e.g., question, evaluation), temporal frame of reference (e.g., past, future), and temporal reference (e.g., sequence) that were subsumed under three factors: elaborative and advanced language, general and past reference, and repetitive prompts and preferences.

Her findings reiterate earlier findings that future talk develops between 3 and 4 years and is differentially related to mothers' conversation style. While all three affect the contribution of older children to conversation about the future, the contribution of young children is *not* related to repetitive prompts and preferences,

and the contribution of older children is more strongly related to the elaborative style than to the other two. However, these findings should be understood in their developmental context. Applying Vigotsky's (1978) *zone of proximal development*, Hudson (2006) suggests that children who have only partial understanding of temporal language benefit from temporal conversation because listening to temporal language in the context of everyday events facilitates their conceptual development.

Guided participation. Are the processes involved in mothers' future talk unique to this specific situation? According to Rogoff's (1990) analysis of cognitive socialization in early childhood, the answer is no. Essentially, mothers' future talk is an instance of guided participation in which mothers involve their child in a process "...in which caregivers and children's roles are intertwined, with tacit as well as explicit learning opportunities in the routine arrangements and interactions between caregivers and children." (Rogoff, 1990, p. 65).

However, for guided participation to be an effective learning opportunity, the interaction between children and caregivers (e.g., parents, siblings, peers, and teachers) must satisfy the condition of *intersubjectivity* (Rogoff, 1990). Underlying it are joint assumptions and shared understandings (Newson & Newson, 1975) that, regardless of their age (Rogoff identified intersubjectivity in a 12-month old baby-mother interaction), make it possible for communication partners to accommodate each other by attending to an aspect brought into focus by the other (Rommetveit, 1985) and take the other person's perspective. However, despite its importance for communication in general and child-caregiver interaction in particular (Newson & Newson, 1975; Riegel, 1977; Rogoff, 1990), to date this aspect of future time socialization has not been studied.

Closest to it have been studies of children's planning effectiveness when the task is carried out alone, with a partner, or when child and partner share decision making (Gauvain & Rogoff, 1989). For 5-year-olds, the greater advantage of shared decision making is explained by its intersubjective nature: as adults guide planning while being tuned and responsive to children's limited ability, they offset the difficulty of planning inherently abstract future events (Rogoff, 1990). However, a recent study (Gauvain & Perez, 2008) shows that compliant children (4–5 years old) gain more from a mother-child joint planning task than do noncompliant children. Their mothers are less directive, share more task responsibility with their children, and adjust more often to the child's learning needs than do mothers of noncompliant children.

Motivational-emotional aspects. Research on socialization of future knowledge in early childhood (like research on adults' guiding behavior in planning situations) has focused mainly on cognitive facilitation, leaving the role of the motivational-emotional aspects of parent-child relationships unexplored. In its absence and in light of future extension of the self on episodic memory, a study of the relation between mother-child relationship and children's autobiographical memory (Cleveland & Reese, 2005) is relevant.

The importance of this study is in partitioning parental behavior into its motivational (autonomy granting) and cognitive (task structuring) aspects and examining their interaction with children's age. Its findings show that maternal structuring is important for the autobiographical memory of all children; maternal support, however, is relevant only for the autobiographical memory of younger children

(40 month old). Given that autobiographical memory serves as the cognitive-experiential basis of episodic future thinking and that the future is inherently abstract, autonomy granting as an index of motivational-emotional support indirectly facilitates the development of future thinking in early childhood and might continue to affect its development at an age that autobiographical memory is affected mostly by cognitive task structuring.

Future Themes in Children's Literature

Although children's literature has treated a variety of themes related to time in general and the future in particular, it has remained an unresearched area. Some of these themes – particularly those related to future thinking – are illustrated here by drawing on Hebrew, German, English, and Russian nursery rhymes, lullabies, and folk stories informally collected to demonstrate their representation in children's literature.

Nursery Rhymes and kindergarten stories. Hello, Hello Daddy (Hello, Hello Aba, in Hebrew, Horen, 1985) is one of first nursery rhyme books read to children as young as 2 years of age. It opens with

Hello, hello
Is this daddy [I am talking to]?
Hello, hello
Is this my lovely boy?
Where are you Daddy?
I am at work
Daddy
What *will* you bring me? (*Italics added*) A present?

From there on the dialog between father and child continues discussing the presents daddy will bring his child, playing with such fantasy-objects as a boat with wheels, a car with wings, or a goat wearing eyeglasses and ending with

No, daddy
A man is wearing glasses
OK my child,
I will bring you a man,
I will bring you. . .Daddy

Other instances of introducing children to future thinking can be demonstrated in nursery rhymes and children's stories about daily routines, bedtime, visiting the family, and the amazing process of growing up.

One story illustrating how slow the process of growing up seems to young children is the Journey to Age Four (Orlev, 1985/2005):

Maya was everyday three years old, three and a little, three and a little more, three and a quarter, three and a half, but wanted very much to be four. So... Maya asked her father when she is going be four.
 Dad laughed and said: "in half a year's time"
 "Is this a long time?"
 "Very long" said dad, "a full half year"
 "Tomorrow?" asked Maya
 "No", said dad, "many tomorrows"

Lullabies. The wish to grow up (which at the end of a day or in the middle of a sleepless night may be shared by parent and child) is often emphasized in lullabies.

Hush, L'il Baby
 Hush, l'il baby, don't say a word
 Mama's gonna buy you a mockin'bird.
 If that mockin'bird don't sing
 Mama's gonna buy you a diamond ring
 If that diamond ring turns brass,
 Mama's gonna buy you a looking glass
 gets broke
 billygoat.
 don't pull,
 cart and bull
 turn over
 dog named Rover
 won't bark
 horse and cart.
 fall down,
 Then you'll be the sweetest li'l baby in town.

While the American lullaby addresses universal experiences set in the future, a Hebrew lullaby from the pre-State of Israel pioneering era interweaves the spirit of its time (the value of working the land) with traditional lullaby themes.

Sleep well my child sleep well
 ... Tomorrow we start anew
 Tomorrow daddy will go out to plow...
 When you grow up
 The two of you together will go out to the fields.

Middle childhood stories and literature. The movement of the moon around earth and its cyclical nature was introduced to me by my Russian born and raised grandmother who told me a folk story from her childhood about why the moon does not wear trousers.

One day, many, many years ago the moon wanted to get himself trousers. So he went to the tailor and said

“Mr. Tailor could you please make me a pair of trousers?”

“Of course” said the tailor “let me take your measurements and come back next week to try it on.”

The next week when the moon came to try them on his trousers they were much too small.

“Never mind” said the tailor, “I will fix it for you. Come back next week to try it on”

The next week, however, the trousers were again too small, and the tailor said

“Don’t worry Mr. Moon I will fix it for you. Come back next week”

The next week the trousers were too big. This time, the tailor lost his patience. He said

“Mr. Moon, stop changing your figure. I can’t make you trousers if you keep growing bigger and smaller all the time”

“I can’t” said the moon. “This is my nature”

“If so” said the tailor “you can’t wear trousers. They will never fit you.”¹

Finally, in the nineteenth century, German school age children were introduced to the horrible future consequences of bad behavior by the *Struwwelpeter* collection of stories by Heinrich Hoffman (a German pediatrician who wrote these stories as a Christmas gift for his son), translated into English by Mark Twain (1845/1935). Of particular interest to us is the story about Augustus who would not have his soup. As shown below, this story outlines the progressive course – day by day – of the future consequences of not eating soup:

The Story of Augustus who not have any Soup



Augustus was a chubby lad;
Fat ruddy cheeks Augustus had;
And everybody saw with joy
The plump and hearty healthy boy.
He ate and drank as he was told,
And never let his soup get cold.
But one day, one cold winter’s day,
He threw away the spoon and screamed:

¹Just as this volume was ready to be sent out to the publisher, a new children’s book in which the moon is described in the feminine (Hebrew has one masculine and one feminine name for the moon) had been published, acknowledging its folk story basis: Naor, L. (2008). *Simla hadasha lalevana [the moon has a new dress]*. Tel Aviv: Modan

“O take the nasty soup away!
 I won’t have any soup to-day:
 I will not, will not eat my soup!
 I will not eat it, no!”



Next day! now look, the picture shows
 How lank and lean Augustus grows!
 Yet, though he feels so weak and ill,
 The naughty fellow cries out still
 “Not any soup for me, I say!
 O take the nasty soup away!
 I will not, will not eat my soup!
 I will not eat it, no!”



The third day comes. O what a sin!
 To make himself so pale and thin.
 Yet, when the soup is put on table,
 He screams, as loud as he is able
 “Not any soup for me, I say!
 O take the nasty soup away!
 I won’t have any soup to-day!”



Look at him, now the fourth day’s come!
 He scarce outweighs a sugar-plum;



He's like a little bit of thread;
And on the fifth day he was dead.

Summary. Given that time concepts are socially constructed, socialization of future knowledge needs to be examined at both the individual and the cultural levels, asking how the mother-child dyad and culture facilitate the development of future concepts. Review of the *mother-child setting* studies suggest that, possibly because in early childhood mothers devote only a small part of their total talk to time talk, research on future orientation socialization is scant and focuses on the cognitive aspects of mother-child communication. Extant research shows that mothers' talk about the future differs from their talk about the past. Specifically, their future time talk is more complex, age dependent, and engages the child in guided participation. At present, research has been focusing mostly on the cognitive aspects of knowledge of the future while its motivational-emotional and social underpinnings await further research.

Its relevance notwithstanding, representation of future themes in *children's literature* has not been investigated by developmentalists. In its absence, in this chapter excerpts from lullabies, nursery rhymes and kindergarten and school age stories illustrate the age-gradedness and pertinence of children's literature to the acquisition of future knowledge. Probably due to the inherently abstract nature of the future, its meaning and related time concepts are introduced by different genres in early childhood. Conversely, literature for school age children emphasizes the value of future thinking and the importance of considering future consequences. In light of the relevance of guided participation and adult-child intersubjectivity, one question for future research is the effectiveness of adult-mediated electronic literature, as may be the case in TV or DVD watching.

Future Orientation in Middle Childhood

Narrating the future is founded on the integration of cognitive abilities underlying time knowledge (i.e., order codes, location in represented time patterns and duration), verbal fluency, and the ability to produce a coherent story. This section addresses the development of this ability in middle childhood; however, to trace its early beginnings the discussion draws on some informal observations and interviews of *kindergarten* children that in the absence of systematic research may serve as basis for future research.

Early Expressions of Hopes and Fears

At age 3, Anat was discussing with her mother what she will need to do when she grows up so she could buy herself all those fancy shoes she saw displayed at the shoe store window as the two made their daily walk to Anat's daycare center. Telling her mother she will earn money by working, she reflected on the cognitive process, explaining to her mother: "You have to imagine how it's gonna be".

At age 5;10 in the summer before he entered 1st grade, Yuval understood the *future* as "something that will happen when I grow up" and when asked for an example added "when I will be 1st grader". However, his narrative of the future oscillated between the near future (1st grade) and adulthood and demonstrated that although he was familiar with adult roles he was still unable to apply order and duration concepts to his narrative of the future. Thus, he hadn't made up his mind whether he wanted to be a swimming or Karate coach, wanted to have an apartment for himself, his wife and children but thought this would happen when he is in military service (that for Israelis takes place between the age of 18 and 21). Although he could express it only in concrete terms, Yuval did understand the meaning of gradual advancement. When asked what one had to do to become a Karate coach he said "to be in Karate, the most important thing is your outfit. I have a yellow belt; Eiran (his older brother) has a purple belt. But to be a coach you must have a black belt."

In a similar manner, Yoav (5;9) understood what future meant and he too spoke about it by oscillating between school and adult career as an astronaut who would fly a spaceship to outer space. He also knew what one should do in order to become an astronaut: "[you have to make sure] that our spaceship won't blow up on us on the way to Earth. . .that it won't go down because that's where gravity is". For him – as for his age mate Yuval – what one needed to become an astronaut was "to buy a suit, to buy shoes, to buy a suit, to buy shoes, to buy everything".

Obviously, while able to use terms like gravity and spaceship return to Earth, like Yuval, Yoav did not fully distinguish between the party costume and the adult career role. As the interview continued it was clear that Yoav's notions of past and future, hopes and fears were still being developed. Thus, when asked what else he would like to be (when he grows up) he answered: "to be [working] in the electricity company, to be a TV actor, to work in the zoo, to be. . .a photographer, to be a policeman, to take care of foxes, and that's it".

Interviewer: And when will you do it?

Yoav: Now

Interviewer: Now? Can you do all these things now?

Yoav: No, not exactly. When I grow up. When I am a daddy. When I will be working.

Interviewer: Is there anything you fear about in the future? Something you don't want to happen?

Yoav: Oh, yes. That Earth will not be turning too fast.

Interviewer: What will happen then?

Yoav: We will all be dead.

Interviewer: What else?

Yoav: That my family and everyone I know will disappear from this world.

Interviewer: Do you know what is Hope, Yoav?

Yoav: Oh, yes. Hope is something else.

Interviewer: Right. What is your hope for the future?

Yoav: To be that one with the dolphins.

Interviewer: What, the trainer?

Yoav: Yes. The one who gives them food and all that.

Interviewer: And when will you be a dolphin trainer – before or after you go to school?

Yoav: You must go to school first.

At age 5, careers are gendered and Noa (5;0) wants to be an actress because she will be seen on television, and because “. . . it is more interesting than being just a model or a dancer”. While interviews with kindergarten age children show that future talk is laden with fantasy, and depends on their gender, experiences, and whether or not they had older siblings – who like Yoav’s siblings talk about school and help him form the impression that school is “studying and boring classes and 200 intermissions which are great fun. . .” – they fit Friedman’s (2000) findings that at this age children still confuse past and future.

However, it is very clear that they have grasped the notion that the self is continuous over time and extends into noncurrent events (Moore & Lemmon, 2001; Nelson, 2001). Thus, although children may be acquainted with the concepts of fears and hopes, and with “fears” more than with “hopes”, their expressions arise from fantasizing on persons and events that come to their mind, like the explosion of the Columbia space shuttle that took place more than 2 years before the interview with Yoav but was inscribed in his memory.

The Construction of Future Hopes and Fears in Middle Childhood

Observations like those described above prompted the question of how early children construct a realistic prospective life image that underlies their charted future trajectory, and how extensive is it? Although only sparsely investigated, the studies that did take place show several meaningful findings.

Age differences in hopes and fears for the future. In one study (McCallion & Trew, 2000) 5- to 9-year-old Northern Ireland children were interviewed about their hopes and fears regarding school and job. Responding to the Possible Me Tree interview schedule (Day, Borkowski, Punzo, & Howespan, 1994), children listed their hopes and fears for the future. Analysis showed that the number of responses about school and job grow larger with age both cross-sectionally and longitudinally (T2 assessment took place 1 year after T1). Regarding school, these children’s hopes and fears narratives refer mainly to school achievement

and reflect their understanding of the future value of school learning. In a similar vein, the mean number of career responses is age-related both cross-sectionally and longitudinally, even though younger respondents are able to express a future career aspiration, and career preferences remain stable over a 1-year period.

A cross sectional study of hopes and fears. In another study carried out in Israel, Gelberg (1996) asked 2nd, 4th, and 6th grade girls and boys to list their hopes and fears for the future in an open-ended questionnaire. This questionnaire (described in detail in Chap. 1) instructs respondents to list their hopes and fears for the future in two separate sections and write down how old they expect to be when each hope or fear becomes relevant (see Appendix).

To make sure respondents were familiar with the normative order of social roles such as being high school students, serving in the military, getting a job, and starting a family, after completing their hopes and fears questionnaire the children were requested to answer a questionnaire in which they had to write down what individuals usually do at age 15, 18, 22, 25, 30, 50, and 70. Gelberg found that, even among 2nd graders, children were familiar with the normative sequence of social roles. This allowed him to continue with his analysis of all three age groups using the procedure and thematic categories initially developed for the analysis of hopes and fears narratives expressed by adolescents ranging in age from 9th grade to high school graduation (Seginer, 1992a).

Following the procedure detailed in Chap. 1, Gelberg's analysis consisted of two steps: (1) coding the children's responses into one of seven categories: schooling and higher education, military service, work and career, marriage and family, self concerns, significant others, the collective (inter-judge reliability = 92%), and (2) computing *density* and *specificity* scores. As noted in Chap. 1, *density* scores pertain to the number of domain specific narratives/the total number of narratives ratio for hopes and fears, respectively, for each domain and overarching category. *Specificity* scores pertain to the mean of the specificity ratings for each domain. They are produced by assigning each narrative a score ranging from 1 (low specificity) to 3 (high specificity). To illustrate, "to get married" is scored 1, "to have a big wedding party" or "to get married and live happily" is scored 2, and "to get married and have three beautiful children" is scored 3.

The hopes and fears of 2nd graders. For 2nd graders, much like for the 5-year-olds described earlier, the future is understood as the time yet to come and events yet to be experienced, but the content of these yet unlined events is drawn from both reality and the world of fantasy. Thus, their hopes include reality-based narratives like "To own a car", "To be rich", "To have a big house", "I hope my friend and I will continue to be friends", "I want to be a dancer", and a mature view like "When I complete my military service I will study to become a medical doctor because in my opinion this is a good job" (listed by the son of a medical doctor), as well as fantasy narratives like "I will fly to the moon", "I will want to stop growing up", "I will have lots of rings", "I will be a princess". These narratives are also illustrated in the children's drawings (Figs. 2.1 and 2.2) that represent both concrete though stereotypic images (a girl draws herself as a beauty queen and a boy as a jungle



Fig. 2.1 My future by a 2nd grade girl: beauty queen

ranger) and the uncertainty of the future (a girl who wrote next to her drawing of black and pink hearts “I see hearts of light and darkness”).

Their fears too are split between reality and fantasy, illustrated by reality-based fears like “my house will be broken into and my money and car stolen”, “dogs will chase me”, “I don’t want to work in the garbage”, “I will be hurt”, and “shortly after the army [i.e., completing military service] I will not be accepted to be a doctor because maybe I am not suitable for the job”. Their fantasy fears include “I will be afraid of crocodiles”, “I will be eaten by a bear”, “A monster at night”, “I will become a Ninja turtle”.

Age differences. Overall, age differences are reflected in the density scores of the prospective life course and existential domains and in the content of narratives, and only to a lesser extent in their specificity scores, mainly because the specificity measure turned out to be inappropriate for the analysis of the fantasy narratives. Thus “to be superman and fly high above the city” is a high specificity but obviously low reality narrative. This is also illustrated in the children’s drawings (Figs. 2.3 and 2.4). Fourth graders imagine themselves as professionals: a girl draws herself with a lawyer’s cap and a boy adds a balloon in which he says over the phone: “Yes; and please bring the insurance files. Tomorrow I am going to Haifa.” He also adds that he sees himself as a quite successful lawyer or insurance agent. As they get to 6th grade, girls draw themselves as university students, and kindergarten and school teachers. One girl (Fig. 2.5) sees herself in the theater (left side of the drawing) but



Fig. 2.2 My future by a 2nd grade boy: jungle ranger with a monkey to his left and a tiger to his right

also as having a family (right side of the drawing). Boys draw themselves at home, having the good life (a swimming pool next to the house), in romantic relationship, but as 2nd and 4th grade boys in soccer (Fig. 2.6).

As Figs. 2.7 and 2.8 illustrate, the prospective life course domains are age-related; the exception is work and career. This domain, more than that of education, military service, and marriage and family, is as represented in the prospective life space of 2nd as in that of 4th and 6th graders. Considering the high salience of military service in the life of Israelis and the fact that over 90% of the children have been growing up with their biological parents, these findings suggest, nevertheless, that the world of adults is more easily accessed via the domain of work and career than via military service, higher education, or marriage and family.

Analysis of the density scores of the fears domains show no age differences. This conclusion changes when the unit of analysis is the prospective life course overarching category and density scores are calculated for both hopes and fears. Then, significant age differences are found showing that, with age, the density scores of the prospective life course domains grows higher and of those of the existential domains grow smaller. However, the structure of these differences for the hopes and the fears aspects differs. The hopes score of 4th graders is significantly different from that of 2nd graders whereas their fears score is significantly different from that of 6th graders. In other words, for hopes the divide is between the 2nd and 4th grades and for fears between the 4th and 6th grades.

Fig. 2.3 My future by a 4th grade girl: lawyer



The explanation of the differential age differences for *hopes* and *fears* draws on two considerations. The first pertains to the *developmental* tendencies and the second to specific *cohort* effects.

Developmental tendencies. Although studies carried out with different socio-cultural groups (e.g., Möns, 1968; Nurmi, 1987; Seginer, 1988a,b,c) and with girls (Seginer, 1992a) and boys (Berkman, 1993) indicate that adolescents and adults produce more hopes than fears narratives, young children understand the meaning of fear better than the meaning of hope; however, by 4th grade they have a good grasp of what is meant by hopes. Thus, the greater difficulty individuals encounter in processing negative information as well as across age avoidance of fear-arousing events, especially those not yet experienced, are not strong enough to counteract the primordial sense of fear with which young children are familiar.

Cohort differences: the effect of unique events. The analysis of the three age groups revealed an interesting finding: of the three groups, the *collective issues* score of 4th graders was considerably higher than that of both 2nd and 6th graders. In fact, they scored higher than any other Israeli Jewish group assessed in recent years and also differed in their content: many of them related to Saddam Hussein and

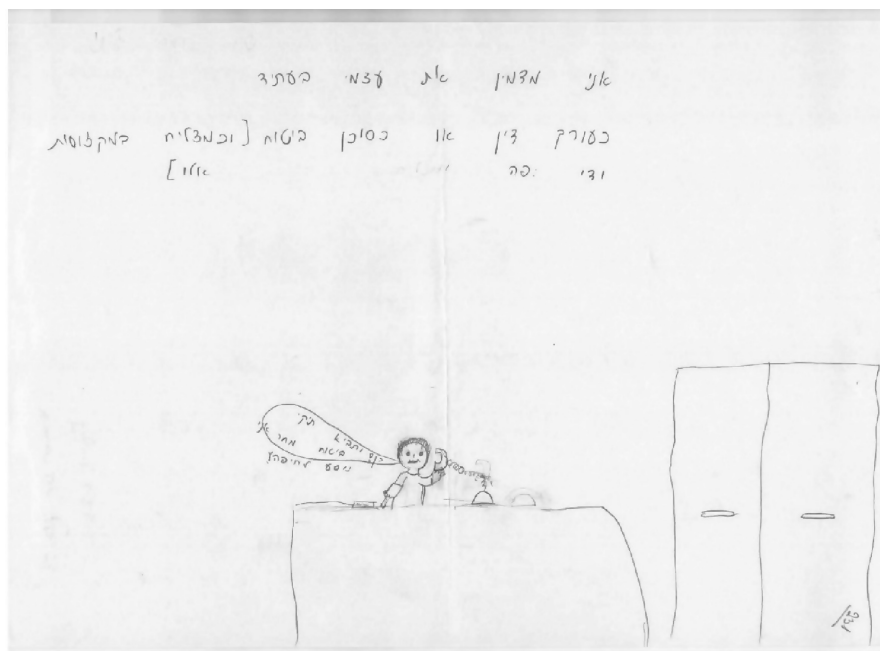


Fig. 2.4 My future by a 4th grade boy: “a quite successful lawyer or insurance agent”

the 1991 Gulf war when Israel was under the attack of Iraqi Scud missiles, schools were closed and uncertainty prevailed. Although the war took place 3 years earlier, its effect on the 4th graders who were then in 1st grade had been lasting and expressed in fears like “we will have a war”, “Saddam Hussein will start a war on Israel”, “a war in which the Iraqis and the Moslems will throw Katyusha rockets on us”, but also others like “Planet Earth will explode”, “we will have an earthquake”.

Given that all respondents experienced the war – the 2nd graders as 4-year-olds and the 6th graders as 3rd graders – the question has been why the Gulf war left a stronger impression on the 4th graders than on the two other age groups? The answer draws on the work of Elder (Elder, 1974, 1986; Elder, Caspi, & Burton, 1988; Elder, Modell, & Parke, 1993) and Stewart (Stewart & Healy, 1989) showing that age moderates the effect of historical events on children, adolescents, and adult development so that the same social event – be it war, economic crisis, or the rise of women’s movements – has different effects on individuals’ development.

Applied to the present findings, 2nd graders were too young at the time of the Gulf war, and the 6th graders had some understanding of the war situation. However, the 4th graders were in 1st grade and experiencing both a personal change and the stress shared by all Israelis resulting from where and when the next Scud would hit and whether the threat of chemical and biological weapons would come true. Three years later, for some children the memory of war – which was threatening all, but for them also disrupted entrance to 1st grade – was reflected in how they constructed



Fig. 2.5 My future by a 6th grade girl: multiple roles/family (right side of the picture) and theater career (left)

the future. Though the numbers are small and hence only indicative, this tendency suggests that memory affects not only the cognitive aspect of future orientation but also its emotional tone.

Gender differences. Although gender differences are traced in the narratives of 5-year-olds, they continue to develop with age (Fig. 2.9a–d): by 4th grade, girls are more oriented to education and boys to work and career. However, the greater interest of girls than of boys in marriage and family is indicated only by 6th graders. The tendency identified for age differences whereby fears are less differentiated by age than hopes is also true for gender differences. Nevertheless, 6th grade girls are more concerned with education and with marriage and family than are 6th grade boys.

Consequently, when the domains subsumed under the prospective life course and existential categories, respectively, are summed up, gender differences reach statistical significance for fears but not for hopes, with $F(1,270) = 4.60$ $p < 0.05$ and 5.84 , $p < 0.05$ for the prospective life course and existential categories, respectively.

By focusing on age and gender differences we may be overlooking *similarities* between younger and older children, girls and boys. One such similarity is found for the *self concerns* category of all three age groups and two genders. Although its density score goes down from 47% of the hopes' prospective life space for 2nd grade boys to 21% for 6th grade girls and from 70% of the fears' prospective life



Fig. 2.6 My future by a 6th grade boy: the good life/peace (*written on the left of the page*), home, car and swimming pool

space for 2nd grade boys to 35% for 6th grades girls, overall this domain is more intensely represented in the children's prospective life space (indicated by the total number of hopes or fears) than any of the other future domains (31% of the hopes' and 51% of the fears' prospective life space pertain to self concerns).

In a similar vein, the work and career domain is more intensely represented in the boys' prospective life space than any of the other prospective life course domains (i.e., schooling and education, military service, marriage and family). Girls, however, change preferences as they reach 4th grade and the primacy of work and career in 2nd grade is replaced by marriage and family also maintained by 6th grade girls.

Future orientation and academic achievement. The age-related shift from existential to prospective life course narratives raises a question regarding the processes which facilitate this tendency as children move from 2nd to 4th and 6th grade. Specifically the question is whether the evolution of a reality based prospective life course dominated future orientation is related to children's *cognitive-intellectual* abilities? Drawing on Greene's (1986) findings that future orientation is not related to cognitive development as defined by formal operations, and the non-availability of standardized achievement tests in Israel, Gelberg estimated intellectual ability in terms of academic achievement, positing that prospective life course density scores are positively associated and existential domains density are negatively associated with academic ability.

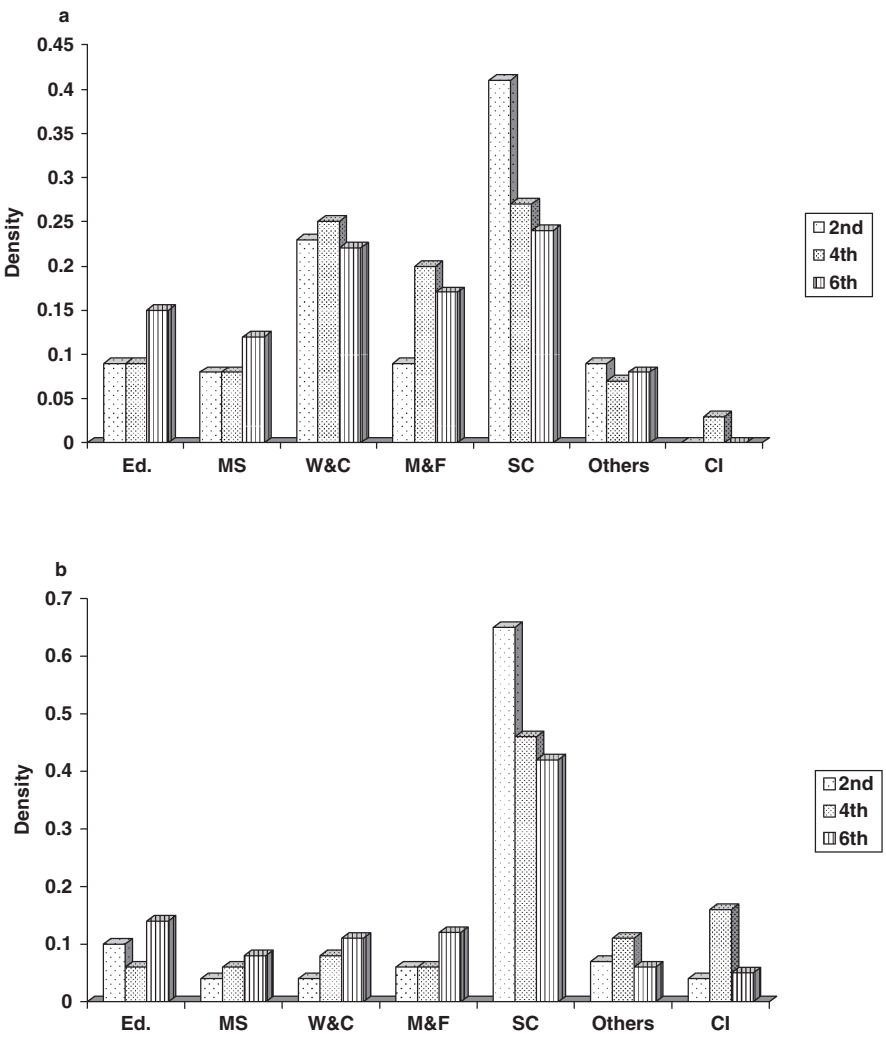


Fig. 2.7 Hopes and fears age differences: 2nd, 4th and 6 grades. **a** Hopes. **b** Fears. Ed = Education, MS = Military Service, W&C = Work and career, M&F = Marriage and family, SC = Self concerns, CI = Collective issues, density scores pertain to the domain specific/total number of narratives

His findings show that Grand Point Average (GPA) is more strongly and consistently related to the future orientation of 6th than of 2nd and 4th graders. Thus, analysis of the hopes density scores showed that for 6th graders the representation (i.e., the density score) of the education domain is positively related to GPA ($r = 0.24, p < 0.05$) while the representation of collective issues and the overall existential domains representations are negatively related to GPA ($r = -0.23, p < 0.05$ and $-0.36, p < 0.01$, respectively).

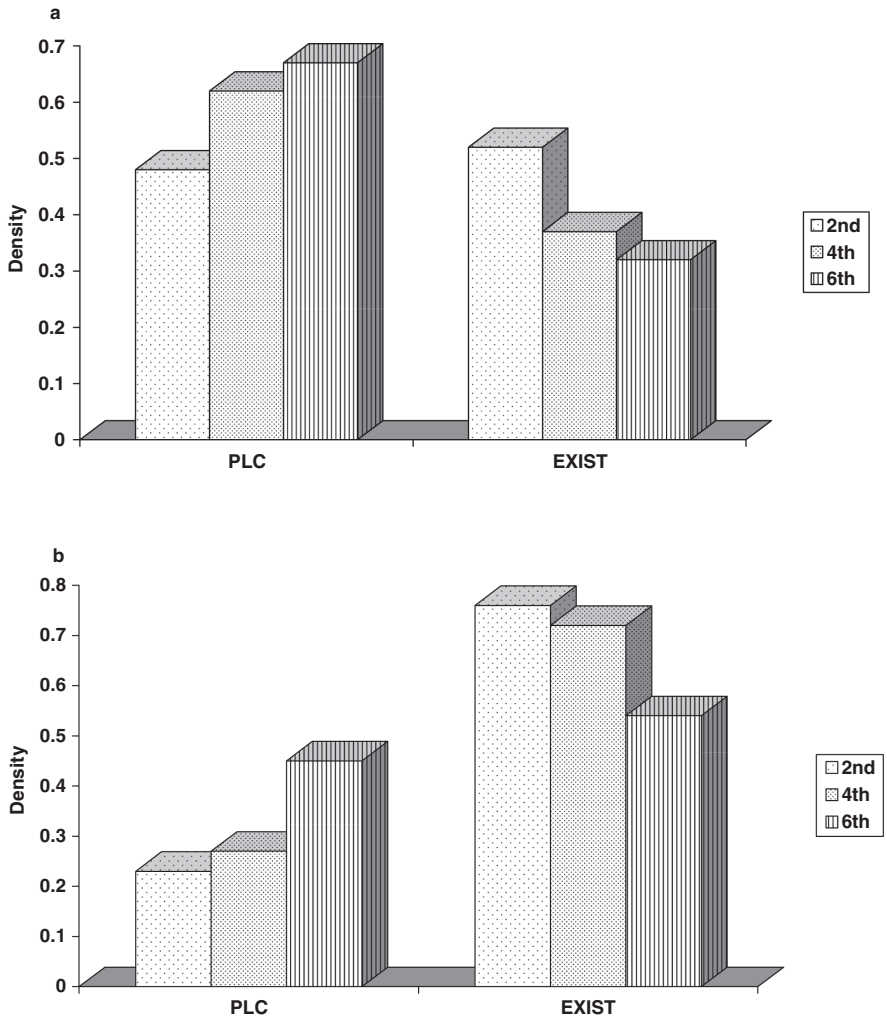


Fig. 2.8 Hopes and fears age differences: 2nd, 4th, and 6th grades. **a** Hopes. **b** Fears. PLC = Prospective life course, EXIST = Existential domains

The validity of these findings is supported by three other findings showing (1) that for 6th graders the *specificity* score of the education domain is positively related to GPA ($r = 0.45, p < 0.01$), (2) that the total number of hopes narratives is positively related to GPA ($r = 0.20, p < 0.05$), and that (3) nevertheless none of the other prospective life course domains (i.e., military service, work and career, marriage and family) nor the total density of prospective life course domains are related to GPA. Thus, the consistent effect of higher education future orientation on academic achievement found for culturally diverse adolescents (Chap. 7) can already be traced among 6th graders.

Future orientation and self esteem. Based on the basic premise that a sense of continuity is inherent to the meaning of self (Erikson, 1968; James, 1890; Markus & Nurius, 1986) and that as children grow up self-evaluation becomes the standard that directs behavior (Harter, 1999; Higgins, 1991), Gelberg examined the relation between a short version of the self-esteem scale (Coopersmith, 1967) and the density

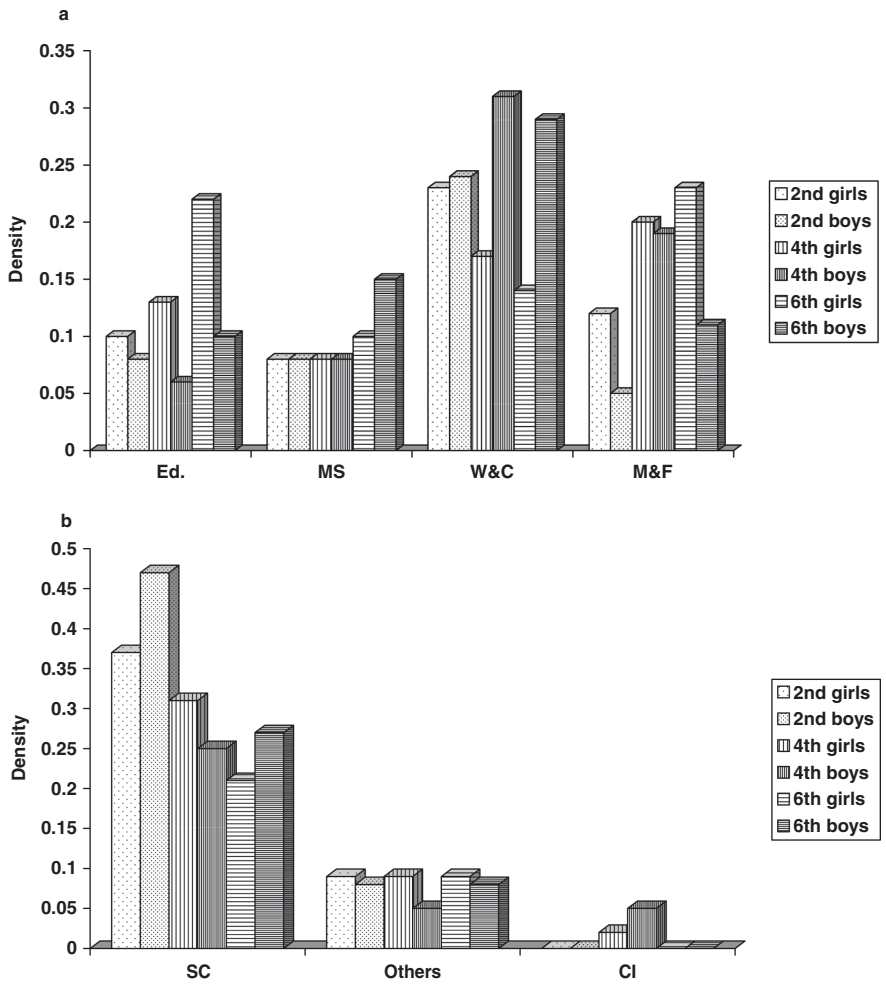


Fig. 2.9 Hopes and Fears Gender Differences: 2nd, 4th and 6th grades. **a** Hopes/prospective life course domains. Ed = Education, MS = Military service, W&C = Work and career, M&F = Marriage and family, SC = Self Concerns, CI = Collective Issues, density scores pertain to the domain specific/total number of narratives. **b** Hopes/existential domains. SC = Self concerns, CI = Collective issues. **c** Fears/prospective life course domains. **d** Fears/existential domains. SC = Self concerns, CI = Collective issues. Density scores pertain to the domain specific/total number of narratives

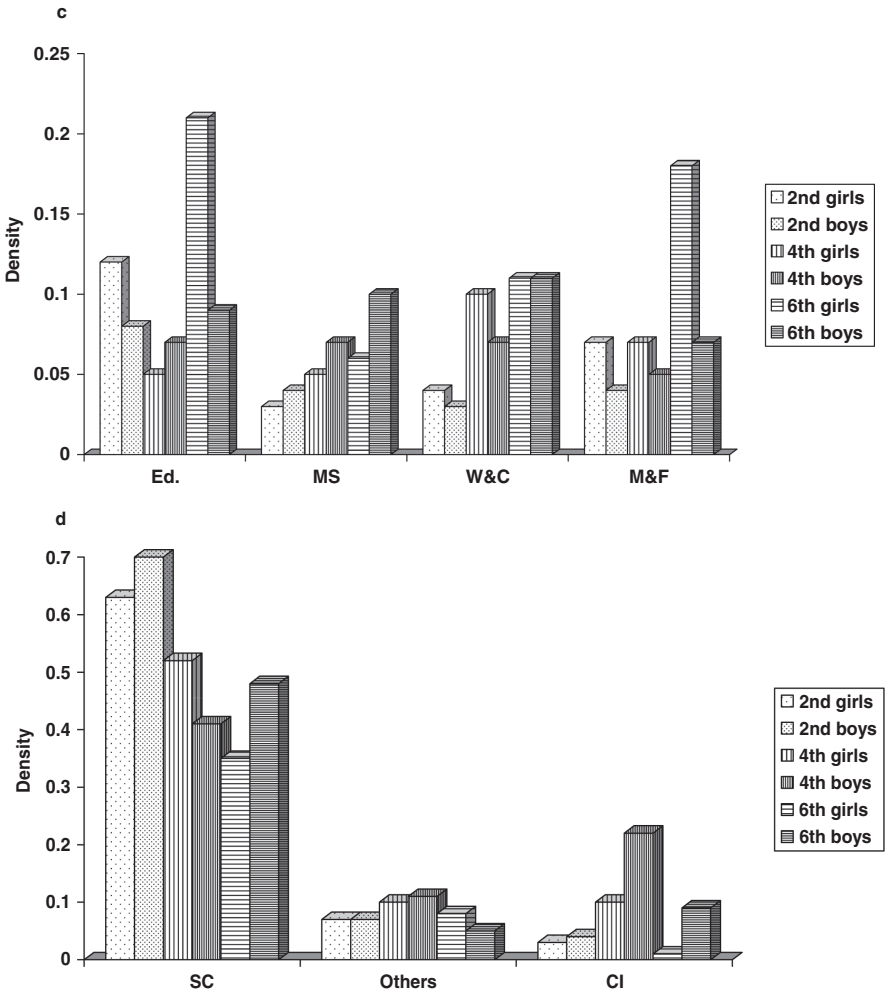


Fig. 2.9 (continued)

of each domain as well as the density of the two overarching categories: the prospective life course and the existential domains.

His hypothesis that the relation between self-esteem and future orientation will gradually build up is confirmed. While for 2nd graders self esteem and future orientation are not related, self-esteem is positively related to the density of the prospective life course overarching category for the 4th ($r = 0.24, p < 0.05$) and 6th graders ($r = 0.33, p < 0.01$) and negatively related to the existential category of both age groups ($r = -0.21$ and $-0.22, p < 0.05$ for 4th and 6th graders, respectively). For 6th graders, but not for the younger age groups, self-esteem is related also to the education ($r = 0.28, p < 0.05$) and self concerns ($r = -0.30, p < 0.01$) domains.

Summary: future orientation in middle childhood. Although 2nd graders are acquainted with the notion of the future and with the sequence of age-graded social roles, their narratives about the future differ from those constructed by 4th and 6th graders in being less realistic and hence less goal-oriented, behavior guiding and unrelated to academic ability (GPA) and self-esteem. This budding ability develops between 4th and 6th grades, so that when children reach 6th grade, investment in prospective life course is positively related to self esteem, and the school and education hopes – but not those pertaining to other domains – are positively related to academic achievement.

Summary: Future Orientation from Infancy to Middle Childhood

The accelerated cognitive and social-emotional development characterizing the period between infancy and middle childhood leads to different research questions and future orientation indicators suitable for each age group. Thus, infancy researchers focus on visual anticipatory behaviors and show that the first evidence of anticipatory behavior is identified as early as 3 months of age. Although its relevance to children's and adolescents' future orientation has not been empirically established, these researchers conjecture that, by engaging in visual anticipatory behavior, infants introduce themselves to the notion and meaning of “future” long before they can verbally demonstrate it.

Early childhood researchers focus on three future orientation issues: children's notions of time in general and of the future in particular as reflected in controlled experiments and naturalistic conversations, planning behavior, and future orientation socialization. In addition to studies of mothers' socialization strategies, the prevalence of future orientation themes in nursery, kindergarten, and school children's literature has also been demonstrated. In middle childhood, as children enter school the focus has been on their ability to extend the self into the future by generating hopes and fears for the future. This research, though limited in scope, shows that, whereas the hopes and fears of 2nd graders oscillate between fantasy and reality, they already show gender differences, that by 4th grade future orientation is reality based, and by 6th grade larger part of it is devoted to the prospective life course and directly related to self esteem. Moreover, the school and education domain, but not other domains, is associated with academic achievement, thus indicating that as children reach early adolescence they perceive the instrumentality of academic achievement for attaining educational goals.

Future Orientation

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