

**Narrative Identity and Well-Being from Middle  
Childhood to Late Adolescence:  
A Developmental, Cross-Cultural Perspective**

Yan Chen

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### **Abstract**

A mature sense of identity is associated with greater well-being in adults, and identity development is the central task in adolescence (Erikson, 1968). McAdams' (1985, 1996) life story theory proposes that identity can be represented on three levels: personality traits, characteristic adaptations, and the life story. The first goal of the present thesis was to investigate the development of narrative identity (as indicated in life story coherence) and factors that may facilitate this development, such as parent-child joint reminiscing, from middle childhood to late adolescence (8- to 21-year-olds). A second goal was to investigate associations between life story coherence and individuals' well-being in this age range. Given that culture influences people's recollection of autobiographical memories and their self-concept, a third goal of the present thesis was to examine whether culture also influences the construction of the life story and the associations between culture, the life story, personality traits, and individuals' well-being.

In Study 1A, I investigated the development of the life story in middle childhood and early adolescence (8- to 12-year-olds), by examining children's narrations of the life story. The life story task required participants to narrate their lives in several chapters. The structure of the life story was coded in terms of chapter chronology, the number of first time experiences, and the number of chapters based on life-time periods. Children also narrated two life-changing events, and the coherence of these event narratives was coded in terms of the level of meaning that they provided in the narratives. As expected, age-related increases were found in the structure of the life story, such that children in early adolescence narrated more life-time period chapters than did those in the middle childhood group. Children's meaning-making skills did not increase with age; however, across the age groups (e.g., middle childhood vs. early

adolescence), girls scored higher on meaning-making than did boys. Neither the structure of the life story nor meaning-making scores were linked to children's well-being, suggesting that the life story has not been incorporated into children's sense of self at this age range.

In Study 1B, I examined the relationship between emotion talk in mother-child past event conversations and children's ability to produce coherent life narratives and their well-being in middle childhood and early adolescence (a subset of children from Study 1A). Emotion talk was coded as the amount of emotions and evaluations attributed to the child by either the mother or the child. Significant correlations were found between children's meaning-making scores and the amount of mother-child emotion talk; however, these correlations were moderated by age and gender, such that emotion talk was positively correlated with 8- to 10-year old boys' meaning-making skills but not with older boys or girls across the age groups. Mother-child emotion talk was also linked to the level of self-esteem for girls, but not for boys; again, age moderated this association, such that mothers' references to children's negative emotions were negatively correlated with girls' self-esteem in middle childhood, but this link was positive for girls in early adolescence.

In Study 2, I examined the development of the life story from early to late adolescence (12- to 21-year-olds) and compared the development of narrative coherence and its relation to adolescents' well-being between New Zealand European (NZE) and New Zealand Chinese (NZC) adolescents. Life story coherence was measured in terms of the overall coherence of life story chapters and the coherence of single events (i.e., low- and turning-point events). Well-being was measured by the

Satisfaction with Life Scale (Diener, Emmons, Larson, & Griffin, 1985) and the Reynolds Adolescent Depression Scale (Reynolds, 2002).

As predicted, the coherence of both life chapters and single events increased with age, and there were no gender- and very few culture-related differences in measures of narrative coherence. Life story coherence was related to well-being; however, this association was moderated by adolescents' age. Higher levels of narrative coherence were significantly correlated with lower levels of well-being in early adolescence, whereas such correlations were positive in late adolescence. In addition to age, culture also moderated the relation between narrative coherence and well-being, such that narrative coherence became associated with well-being (as measured by life satisfaction) in a younger age in NZC adolescents compared to NZE adolescents. Furthermore, there were culture-related differences when comparing narrative coherence and personality traits in terms how these were associated with well-being. After controlling for the effect of personality traits on well-being, narrative coherence still explained unique variance in both life satisfaction and depression; the advantage of narrative coherence over personality traits was stronger among NZC adolescents than to NZE adolescents.

Studies 1A and 1B suggest that the ability to create a life story narrative begins to develop between middle childhood and early adolescence. Mother-child joint reminiscing is one factor that not only affects this development but also is associated with children's well-being in this age range. The findings from Study 2 on the development of life story narratives are consistent with the notion that different aspects of narrative coherence contributing to a coherent life story do not fully develop until mid to late adolescence. The connections between narrative coherence and individuals'

well-being emerged as early as early adolescence. Contrary to prior research showing positive associations between narrative coherence and individuals' well-being in adults, the present thesis suggests that higher levels of narrative coherence could be negatively related to adolescents' well-being when such links first emerge in early adolescence.

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## **Chapter 1**

### **Autobiographical Memory, Narrative, and Self in Early Childhood**

Adults often have difficulty recalling events from infancy to early childhood. Most people cannot recall any personal events prior to 3 years of age. This phenomenon is referred to as childhood or infantile amnesia, and was first identified by Freud (1905/1953) and later refined by Pillemer and White (1989). However, this does not mean that young children do not have memories at all prior to age three. Using the deferred imitation paradigm, studies have demonstrated that infants as young as 6 months showed some nonverbal memories in terms of producing target actions that were shown previously (Barr, Dowden, & Hayne, 1996). There is also an age-related increase in the duration of their retention; Barr et al. found that 6-month-olds could tolerate a 24-hour delay under certain conditions (i.e. repeated exposures) and 9 month-old infants were able to reproduce the target actions in the correct order after a 24-hour delay without any reminders (Herbert, Gross, & Hayne, 2006).

Children begin to talk as early as 12 months, after which they begin to engage in conversations about the past at around 18 months of age (Sachs, 1983). By the time they reach 3 to 3.5 years of age, most children can produce reasonably coherent narratives about past events, indicating the existence of long term but by no means fully developed autobiographical memory (Fivush, Haden, & Adam, 1995). Why do these memories fail to persist into adulthood and become part of one's autobiographical memory? What are the factors contributing to the offset of childhood amnesia, or alternatively, the onset of autobiographical memory?

## *The Sociocultural Origins of Autobiographical Memory*

### Cognitive theories of the emergence of autobiographical memory

Since autobiographical memory contains information about what happened to the self, cognitive skills contributing to self-understanding have been proposed to be critical for its emergence. Howe and Courage (1993; 1997) argued that a cognitive self is the catalyst for the onset of autobiographical memory. According to Howe and Courage, cognitive achievements such as passing the mirror recognition task and being able to correctly use personal pronouns such as 'I', 'me', and 'you', are precursors to the emergence of autobiographical memory. These skills act as the basis upon which children organize memories as experiences relevant to the self. These authors claimed an early onset of autobiographical memory; children as young as 18- to 24-months old are capable of storing autobiographical memories, even if such memories might be expressed nonverbally.

Perner and Ruffman (1995) proposed that it is not until children develop auto-noetic awareness that they start to remember events as personally experienced. Auto-noetic awareness refers to the understanding between knowledge and experience. It is essential for mental time travel, which is one of the defining properties of Tulving's (1985; 2002) definition of episodic memory. According to Tulving, episodic memory develops between the ages of 3 and 5. It is around this period that children begin to consciously re-experience an event during recall. In other words, children can now claim that they remember certain events because they remember experiencing such events previously. Without auto-noetic awareness, events that children experienced prior to this age cannot be encoded episodically, so that memories associated with these events are not truly autobiographical.

Both theories merit recognition for their specific explanations for the emergence of autobiographical memory. However, neither account is conclusive because the definitions provided for the onset of autobiographical memory are either too early or too late; according to the existing empirical data, the average age of adults' earliest memory is around 3 to 4 years of age (e.g., Dudycha & Dudycha, 1933; Pillemer & White, 1989). Other authors have proposed social interaction theories, arguing that social interactions and language skills also play an important role in the emergence of autobiographical memory (Nelson, 1993; Pillemer & White, 1989).

#### Social interaction theories of the development of autobiographical memory

Pillemer and White (1989) suggested that children begin to remember events as soon as they start using language to describe them. This claim is supported by the continuous increase in children's ability to verbally describe past events between 3 and 5 years of age, which coincides with the average age of adults' earliest memories. According to Pillemer and White, understanding the original event and being able to express it verbally determines whether or not such an event would become accessible later on. If during early childhood, the information of an event was encoded differently from normal expectations according to a mature point of view, such a disparity between encoding and general understanding of the same event may lead to failures in retrieval.

Pillemer, Picariello, and Pruett (1994) studied preschoolers' long-term memories of a salient event, in which children were interviewed twice about an emergency school evacuation. The first interview occurred 2 weeks after the evacuation and the second interview was conducted 7 years later. At the first interview, there were age-related differences in the content of children's memories. Older children ( $M = 4.5$  years) showed better understanding of the event than did young children ( $M = 3.5$

years); older children also produced more coherent narratives to describe the event. At the second interview 7 years later, only those who understood and narrated the original event at the first interview showed signs of long-term memory. This is evidence that establishing temporal and causal links within an event, together with the adequate language skills to express it coherently, forms the platform for storage of the memory in the long-term memory system.

Nelson (1993) proposed a social interaction theory of the development of autobiographical memory, which emphasized that the organization and structure of autobiographical memory is transmitted from adults to children through socialization, such as conversations about past events. Nelson argued that the primary function of autobiographical memory is social sharing, which is made possible by language. By engaging in conversations about the past, children are learning that the canonical way to organize their memories is to put them into narrative form. Past event conversations could also serve as a reinstatement for autobiographical memories: a concept often used in infant memory studies. Reinstatement is the idea that a learned response could be retrieved if part of the original learning context is presented again, and that the initial learned response would have otherwise been forgotten without such re-exposure (Rovee-Collier & Hayne, 1987).

Indeed, studies have shown the important role that language plays in memory encoding and retrieval. Bauer and Wewerka (1995) studied 13- to 20-month old children's verbal and nonverbal recall of specific events after various lengths of delay. Children's productive vocabulary was recorded at the initial exposure as a measure of their language skills at the time of encoding. They found that language skills at the time of encoding were positively correlated with both verbal and nonverbal recall, regardless



of the length of delay. Whereas language contributed little variance in children's nonverbal recall once the effects of age, length of delay, and immediate recall performance had been included in the regression model, language uniquely predicted children's verbal recall even after these effects had been considered.

Furthermore, Simcock and Hayne (2002) demonstrated that 2- to 3-year old children's ability to verbally describe a novel event depends on their productive vocabulary at encoding. In this study, children never used a later acquired word (e.g., the word was not part of the child's vocabulary at the time of encoding) in subsequent verbal recall of the event after a delay of either 6-months or 1-year. However, children showed nonverbal recall of information that was not part of their verbal system at the time of encoding. In contrast, Morris and Baker-Ward (2007) challenged the view that language is essential for translating preverbal memories into verbal recall, by showing that a small percentage of 2-year-olds were able to use newly acquired words to describe preverbal experiences. Nevertheless, a considerable number of children from this study failed to do so, indicating that language and other contextual reminders still play an important role in memory acquisition. Although verbal recall in early childhood may not be integrated into one's autobiographical memory, the above studies lend support to Nelson's (1993) social interaction theory by demonstrating that language is a basic tool young children use to structure their autobiographical memory during the early stages of development.

#### The social cultural developmental theory

According to Vygotsky's (1978) sociocultural theory, social interaction plays a fundamental role in cognitive development, whereby adults demonstrate the structure and function of cognitive skills; children then internalize these skills and become

independent users of such cognitive skills. Similarly, autobiographical memory is also constructed within a socio-cultural context, in which children learn and later internalize skills to organize their past experiences in the appropriate narrative forms with the help of adults' scaffolding. In fact, research has identified adult-guided conversations about the past as an integral medium in which adults' scaffolding takes place.

During these conversations, adults (in many cases the parents) highlight aspects of the past that are interesting and worth memorising. They also provide children with the appropriate narrative structure to represent the past. By engaging in such conversations, children internalize the structure and content of narratives in order to establish their own representations of their personal past (Fivush & Fromhoff, 1988; Fivush & Reese, 1992). In addition, these parent-guided conversations also help children to better understand and express their emotions, which in turn facilitates the development of a subjective perspective of one's past (Fivush, 1993, 2001). The functions of parent-guided reminiscing about past events will be discussed in more detail later in this chapter. I now turn to an explanation of the social cultural developmental theory on the development of autobiographical memory (Nelson & Fivush, 2004).

In line with Vygotsky's (1978) sociocultural theory of cognitive development, Nelson and Fivush's (2004) social cultural developmental theory integrates multiple factors that underlie the developmental trajectory of autobiographical memory, emphasising the effects of social interactions on children's developing autobiographical memory. Nelson and Fivush argued that autobiographical memory gradually emerges during the preschool years, and there is no clear boundary separating the absence and

presence of such memory. Language plays a crucial role in the development of autobiographical memory; however, language on its own is not sufficient to foster the development of autobiographical memory. Cognitive skills such as self-awareness, theory of mind, and conventional time knowledge, as well as social factors such as attachment security and parent-guided reminiscing, all facilitate children's ability to organize their memories in a culturally appropriate way. Furthermore, there are culture-, gender-, and age-related differences in the way people construct their autobiographical memories across the life span.

### ***Parent-guided Reminiscing, Autobiographical Memory, and Children's Developing Sense of Self***

#### **Maternal reminiscing style and autobiographical memory**

As mentioned earlier, social interactions, such as parent-guided conversations about past events, play a critical role in fostering children's memory development. There is evidence showing individual differences in the way parents talk to their children about past events, and these differences lead to variations in the quantity and quality of children's recall about past events (Fivush & Fromhoff, 1988; Haden, Haine, & Fivush, 1997; Reese, Haden, & Fivush, 1993; Sales, Fivush, & Peterson, 2003). In particular, mothers differ in levels of elaboration. Mothers who are highly elaborative tend to give embellished narratives of past events by asking more open-ended questions; they also tend to follow children's contribution with new pieces of information. Accurate representations of the events are more likely to be transferred from highly elaborative mothers to children than from less elaborative mothers, but only if their children had a strong sense of self (Reese & Newcombe, 2007). Further, children of highly elaborative mothers come to tell their personal past in more detailed

and coherent ways compared to children of less elaborative mothers (see Fivush, Reese, & Haden, 2006 for a review).

Haden et al. (1997) studied the link between specific features of an elaborative reminiscing style, as indicated by parental provision of evaluations and orientations during joint reminiscing, and children's narrative structure longitudinally. In this study, family conversations were recorded between children (seven girls and eight boys) and mothers and also between children and fathers about past events; once when children were 40 months old, and again when they were 70 months old. These family conversations were coded for the types of narrative structure, especially references to the orientations of narratives such as provision of temporal and spatial information about the event, as well as narrative evaluations such as internal state language, intensifiers, and affect modifiers. Children were then interviewed by an experimenter regarding other events that were not part of the family conversations, but were nominated by the parents as something important and unique in their children's lives. In the interviewer-child conversation, the experimenter only asked open-ended questions to initiate the conversation and offered nondirective prompts to facilitate children's free recall of the event.

The results showed some age-related changes in parents' and children's use of narrative structural elements during reminiscing. Overall, both mothers and fathers increased their use of structural elements over time; children's use of narrative structure also increased with time. There were no differences in parents' provision of structural elements between their conversations with girls and boys. However, girls provided more narrative structural information than did boys, especially in their use of evaluative devices such as internal state information and affect modifiers. A series of hierarchical

regressions also showed that parental scaffolding in the earlier conversations uniquely predicted children's narrative skills later on. Specifically, mothers' provision of orientation information at 40 months uniquely predicted children's use of orientation structure at 70 months when they talked with experimenters. In addition, both mothers' and children's contribution of evaluative information at 40 months uniquely predicted children's use of evaluations at 70 months. In contrast, fathers' provision of orientation or evaluative information did not predict children's use of such devices in their narratives. This study demonstrates that the use of structural elements in children's personal narratives is transmitted from their parents through joint reminiscing. Further, early demonstrations by parents, in terms of how to use language to describe personal memories, uniquely contribute to children's developing narrative skills, confirming the predictions made by the socio-cultural developmental theory of autobiographical memory.

Not only is maternal reminiscing style important for children's recall of their personal past, the content of parent-guided conversations also plays a crucial role in facilitating children's event recall. Information regarding the *what*, *when*, and *where* aspects of the past is essential for establishing accurate representations of past experiences. On the other hand, information relevant to the interpretations of the past, such as external evaluations and internal state language, assigns personal meanings to these experiences. Figuring out the personal significance of past events may help children to realize that people have different perspectives on the same events, and it is these different interpretations that make experiences unique to an individual. However, children do not directly incorporate adults' interpretations into their recall. Instead, they establish their own account of the past by adding their own interpretations to the basic narrative structures that they learned from joint reminiscing with adults. In other words,

it is through evaluations and internal state language that children establish their own internal representations about what happened to them in the past (Nelson & Fivush, 2004). Given the effects of parent-guided past event conversations on children's event recall, it is important to ask whether such effects extend to children's self-concept and consequently their ability to integrate past experiences into their life history. Furthermore, is it the integration of past events into one's life history which in turn helps children to maintain a continuous sense of self over time? I will return to these questions later in this chapter.

In research based on the same sample as Haden et al. (1997), Adams and colleagues studied how parents adopt different reminiscing styles when talking to preschool girls compared to when talking to preschool boys, with a particular emphasis on emotional reminiscing (Adams, Kuebli, Boyle, & Fivush, 1995). Talk about emotions can be viewed as a type of elaborative reminiscing. Emotion terms, such as emotion states (e.g., happy, sad, angry), emotional behaviours (e.g., cry, laugh), and external evaluations (e.g., favourite, fun) were coded for their valence (either positive or negative) and reference (either attributed to the child or to others).

In general, parents increased their use of emotion words over time; they also provided a greater number and variety of emotion words when talking to girls than to boys. However, mothers and fathers did not differ from each other in terms of their provision of emotion words during conversations. Meanwhile, the emotional content of children's narratives also increased over time. Specifically, girls mentioned more unique emotion words than did boys, but there were no differences in the total number of emotion words featured in the narratives between girls and boys. Furthermore, mothers and fathers tended to include more negative internal state language and more

negative external evaluations when talking to their daughters compared to talking to their sons. As children became more competent in using emotions and evaluations to describe their past experiences, parents also changed the focus of their narratives accordingly. Parents of both genders incorporated a greater number of emotional references to others as children grew older. This shift of focus may help children to realize that people might have different memories about the same event, which consolidates their ability to distinguish themselves from others and enhances the idea that it is their own interpretations of their experiences that shape who they are as a person. There is also evidence to suggest that mothers can be trained to use the elaborative, emotion-rich conversation style when interacting with children (aged 3.5 to 5 years), which in turn enhances children's recall during conversations with their mothers and their emotion knowledge (Van Bergen, Salmon, Dadds, & Allen, 2009). Findings as such point to the potential causal link between mothers' elaborative reminiscing style and increases in children's recall of autobiographical memory.

#### The development of self-concept

Another major developmental milestone that emerges during early childhood is the understanding of self. William James (1890/1950) made the distinction between two kinds of experiences that one can have about the self: self as the 'subjective I' and self as the 'objective me'. The I-self refers to self-awareness, such that the self is experienced as an independent entity, which exists continuously over time and is embedded within personal memories across one's life. The me-self refers to self-understanding, which includes different characteristics that one uses to describe various aspects of the self, and these are updated frequently to accommodate the surrounding social context. For example, one way to experience the I-self is by knowing that when I

wake up in the morning, I am still the same person as I was yesterday (James, 1890/1950). The me-self is expressed via different self-descriptions, such as one's ethnic identity, personality traits, temperament and so on, and it is also the most common type of self that has been researched. Obviously, expressing the various types of 'me' requires language, and studies on the verbally expressed self often do not measure the 'I-self' (potentially a nonverbal representation), which is believed to be established prior to the emergence of 'me-self' (Harter, 1983; Watson, 1990). The question then arises: How do nonverbal infants develop a sense of self, and consequently make the leap from experiencing 'I' as the subjective self to expressing 'me' as the objective self?

The central task of self development during infancy is to establish self awareness, so that an infant can distinguish between his/her self and others'. Starting from 4 months, infants start to show a sense of agency by recognizing moving mirror images as a representation of their own body movements (Lewis & Brooks-Gunn, 1979). Later in infancy, self-recognition is often investigated in the classic mirror recognition paradigm. In this type of experiment, a dot of paint is secretly placed on a child's face, and the child's attempt to wipe off the paint when looking in a mirror is taken as evidence of recognizing the physical appearance of the self, which emerges between 15 and 20 months (Lewis & Brooks-Gunn, 1979). While interacting with caregivers, infants gradually come to understand the target of adults' references, either themselves or others. Such an understanding fosters the ability of perspective taking, even if infants are not fully capable of expressing their desires verbally. One way of showing an understanding of the unique self is through the use of internal state language, which includes descriptions about personal emotions and desires that are attributed to specific people. There is evidence to suggest that maternal use of internal



state language at 15 months uniquely predicts infants' use of internal state language and emotion understanding at 24 months (Taumoepeau & Ruffman, 2006).

Many theorists claim that the understanding of self develops in a hierarchy, such that the self is first perceived in physical terms (e.g., I have blue eyes) because young children do not have the cognitive ability to understand psychological terms (Harter, 1983). With age and cognitive development, children gradually begin to include psychological traits and internal states as part of their self descriptions (Broughton, 1978; Selman, 1980). In contrast, Damon and Hart (1988) proposed a multidimensional model of self development, which argues that different aspects of the self, such as physical, psychological, and social selves, develop concurrently. They claimed that no particular aspect of self would disappear and be substituted with another aspect along the developmental trajectory. Instead, within each dimension, knowledge of the self at the low and high ends of the dimension's spectrum would share the same underlying mechanism but be shown in different forms, with concrete self-knowledge incorporated into higher abstract self-understanding.

In contrast, social construction theories argue that the sense of self is derived from memory recollection, and that language makes it possible for people to experience the continuous self that exists in the past, present, and extends into the imagined future (Neisser, 1991, 1993; Nelson, 1993). Specifically, these theories introduce two dimensions of self: the social and the temporal self. Both are believed to arise from social interactions, especially through joint reminiscing about the past (Nelson, 2008). These parent-guided reminiscing conversations help children to locate the self in the past, which strengthens the connections between past and present self. In addition, discussing internal states of the self and others, as well as providing external

evaluations on the actual experiences, sets up the framework for the development of skills such as children's emotion understanding and behaviour regulation. These social cognitive skills further enhance the developing sense of a unique subjective perspective (Fivush & Nelson, 2006).

#### Joint reminiscing and a continuous sense of self

As mentioned earlier, the social cultural developmental theory of autobiographical memory argues that parent-guided conversations about past events are crucial for the development of an enduring sense of self over time: a process starting as early as the preschool years (Fivush, 1994, 2001). In particular, it is the emotional content of past experiences, such as internal states and external evaluations, which are closely linked to the emerging sense of self (Bird & Reese, 2006; Fivush, 1993; Welch-Ross, Fasig, & Farrar, 1999). By elaborating on the emotional content of the child's past experiences, parents are teaching their children the socially acceptable way to express and regulate their emotions, as well as the appropriate interpretations of these emotions. Once children understand why they feel certain emotions under particular circumstances, they then are able to match those feelings with the accurate descriptions. As a result, children begin to realize that how they see themselves as a person is closely linked with what they have experienced in the past, which, in turn, is a developmental precursor to the ability of having a consistent self view over time (Nelson & Fivush, 2004).

Although it has been proposed that our sense of self is derived from what we remember about our personal past, it remains a methodological challenge to document such a link among preschool children, who do not yet understand questions regarding their sense of psychological self, such as "What kind of person are you?" (Harter,

1999). Howe and Courage (1993; 1997) claimed that the beginning of adult-like autobiographical memory is marked by the appearance of conscious self-awareness, often demonstrated by children's success in the mirror recognition task in the second year of life. However, others have argued against this claim by suggesting that being able to recognize a mirror image as a representation of the self is not equivalent to having a psychological sense of self over time; rather, it is only evidence for recognizing the present self in a physical sense (Povinelli, 1995). Additionally, mothers' report of children's self-recognition skills (i.e., recognizing the self in pictures and mirrors) did not correlate with 4-year-olds recall of past events, suggesting that the link between self-recognition and autobiographical memory may not be as strong as what Howe and Courage had claimed (Welch-Ross, 2001).

To date, two studies have examined the link between parent-child joint reminiscing and children's developing sense of self. Welch-Ross et al. (1999) studied the relationship between the emotional content of parent-child conversations about past events and children's self-knowledge. In this study, mothers and their children, aged between 3.5 and 4.5 years old, discussed four emotionally laden events (i.e., visit to doctor or dentist, family outing, special occasion, separation from mother). These event conversations were coded for the presence of emotion terms (e.g., happy, sad, cry) and mental state terms (e.g., know, want, think). Each emotion term was also coded for its attribution, whether it was referring to the child's or other people's internal state or emotional behaviour.

Children's organization of self-knowledge was measured by Eder's (1990) Children's Self-View Questionnaire (CSVQ), which assesses children's self-concept by asking forced-choice, rather than open-ended questions. Not only does the CSVQ

measure children's self-concept based on traits, it also measures the consistency of their self-concept, by assessing whether they hold a consistent understanding of themselves across ten different dimensions. For example, there are several questions addressing children's self-perception in the achievement dimension, which differ with regard to the level of striving for higher achievements. A child is believed to hold a consistent self-concept if he or she endorses a higher proportion of statements regarding high achievement.

Welch-Ross et al. found that the proportion of emotion terms attributed to the child was a unique predictor of children's self-knowledge consistency, after controlling for children's language skills. In other words, children who were referred to with a great number of emotion words had higher CSVQ consistency scores than did those who were referred to with fewer emotion words in the parent-child conversation. In contrast, references to children's mental state terms did not predict their CSVQ consistency scores. In addition, the positive correlations between references to emotional states and children's self-knowledge were not restricted to a particular dimension of the CSVQ scale, suggesting a generalized pattern between emotion reminiscing and children's self-concept development. Given that this study was based on a sample of 32 parent-child dyads and that it was conducted concurrently, the results do not imply a causal relationship between emotion reminiscing and children's self-concept consistency. Furthermore, emotion talk only explained approximately 12% of the total variance in CSVQ score, requiring further investigation on additional factors that might contribute to children's self-concept development, including cultural variations in the content and style of mother-child reminiscing, family socioeconomic status and children's understanding of theory of mind.

Bird and Reese (2006) conducted two empirical studies to broaden Welch-Ross et al.'s (1999) findings, by investigating whether the association between parent-child conversation about past emotions and children's self-concept differed as a function of the valence of the emotion terms used. In their first study, 50 mother-child dyads discussed four one-time events with their children once when children were 51 months old, and again when children were 65 months old. The valence of those everyday events was primarily positive; three events were shared between the dyad and one event was unshared. Emotion talk included references to the internal emotion states of the child or another person, and references to the external evaluations of the child or another person. Internal emotion states and external evaluations were further coded for their valence, either positive or negative. Children's receptive and expressive language was assessed using the Peabody Picture Vocabulary Test III (PPVT-III; Dunn & Dunn, 1997).

Among all the narrative variables, only references to children's negative emotions were significantly correlated with children's CSVQ consistency scores; children who had lower CSVQ consistency scores were more likely to refer to their negative emotions. There were also gender differences in the number of references to children's negative emotions, as girls included more references to their negative emotions than did boys. In addition, the negative correlation between references to children's negative emotions and their self-concept consistency was significant for girls, but not for boys. Bird and Reese also calculated positive emotion ratios to capture the overall valence of the conversation, and a significant positive correlation was found between the proportion of children's references of their own positive emotions and children's self-concept consistency.

In their second study, 51 parents (50 mothers and one father) and their children, aged between 63 and 81 months, discussed four specific past events each associated with a particular emotion that children had experienced (e.g., angry, sad, scared, happy). In addition to coding for the valence of the emotion talk, Bird and Reese also coded the functions of those emotion conversations, by coding each internal emotion state and external evaluations as either an attribution or explanation. Furthermore, the negative emotion conversations were coded for the degree of resolutions. Children's self-concept consistency was again measured by Eder's (1990) CSVQ scale.

Overall, greater parental explanation of children's negative emotions was associated with higher self-concept consistency, whereas emotion attributions were not significantly correlated with the CSVQ consistency score. Furthermore, a greater number of explanations of sad and angry, but not fear, were associated with higher CSVQ consistency score, suggesting that the association between explaining negative emotions and children's self-concept consistency is not restricted to a particular emotion. In the positive conversation context, only children's reference to positive evaluations was significantly correlated with their CSVQ consistency score. In summary, Bird and Reese (2006) demonstrated a clear link between emotion reminiscing and the development of a consistent self-concept in preschool years. Their results also established the importance of explaining children's negative emotions in relation to their developing sense of self.

In conclusion, it has been established that social interactions, and parent-child conversations in particular, are crucial for the development of autobiographical memory, which is closely connected to our sense of self. Although there is evidence to suggest that maternal reminiscing style uniquely predicts children's self-concept in

early childhood, little is known about whether such an effect would also extend to the development of self-understanding in middle childhood. This is important given that middle childhood is a critical period leading to the emergence of identity in adolescence (Erikson, 1968). In the following chapter, I discuss the development of identity in adolescence and beyond, with a particular emphasis on a new approach to identity formation, termed as narrative identity.

## Chapter 2

### **The Development of Narrative Identity from Early to Late Adolescence**

Research has shown that having concrete representations of autobiographical memories eventually leads to an enduring sense of self, which is important for the construction of an identity, a central developmental task in adolescence (Erikson, 1968). Identity development has been studied under traditional paradigms such as the identity status model (Marcia, 1966), and recent research on narrative identity, which focuses on life narratives, is suggested to access the highest level of one's identity: the meaning of one's life (McAdams, 1985, 1995a, 1996).

Previously, it has been argued that coherent life stories are not possible until late adolescence or emerging adulthood (Habermas & Bluck, 2000). However, little is known about the mechanism underlying the development of life story narratives. In fact, only one study so far has investigated the coherence of full life narratives in a sample of 8- to 20-year-old German children (Habermas & de Silveira, 2008), and very little research has examined the relationship between autobiographical memory and the construction of life stories in middle childhood (e.g., Bohn & Berntsen, 2008). I now turn to discuss theories on the construction of identity in adolescence, focusing on the narrative approach to identity development. I then discuss the link between narrative identity and individual well-being followed by an overview of Study 1.

### ***The Emergence of Identity in Adolescence***

#### Traditional approaches to identity development

Erik Erikson (1968) first used the term 'ego identity' to describe an individual's desire for an enduring sense of self in adulthood. According to Erikson, identity is



formed during adolescence and is constructed through a psychosocial process, in which people interact with other members of the society and use the feedback from these social interactions to either confirm or negate their understanding of the self. “Identity includes one’s social roles and status, as well as one’s personal characteristics and feelings” (Hermans, 1996, p. 33). Unlike the traditional psychoanalytic approach to identity development, which focuses on the impact of biological forces on individuals; Erikson’s psychosocial theory emphasizes that people’s life history and the cultural context they live in are the driving forces behind identity construction. From a constructivist perspective, Erikson suggested that the emergence of personal identity is not an all-or-none phenomenon; instead, how people construct their identity in adolescence depends on the level of self-understanding they achieved by the end of childhood. I now describe Erikson’s psychosocial theory on human development, which consists of eight critical stages for human development across the lifespan. A particular focus is on the fifth stage as Erikson contended that the central task for this period is the construction of identity.

*Erikson’s psychosocial theory.* Erikson (1968) identified eight developmental stages in the human life cycle, which begins in infancy and ends with death. The core assumption here is that each stage is associated with a particular crisis, and people need to solve this crisis in order to proceed to the next stage. Solutions to the crises can be presented on a bipolar continuum, with the most and least favourite outcomes each occupying a pole. Realistically, it is not always possible to find the optimal solution for every single crisis. Instead, we try to find a balance between the two extremes as a means to fulfil the demands of each crisis and reach our maximum potential. According to Erikson, human development is a continuous process, such that each specific developmental stage is closely linked with both preceding and following stages. The

cognitive abilities individuals achieve in any given stage are rooted by the developmental outcome at the end of the previous stage, and these newly acquired abilities also serve as the seeds for cognitive growth in the next developmental stage.

Erikson referred to the opening stage of the human life cycle as the period of *trust versus mistrust*, which entails social interactions between infant and the caregiver during the first year of her or his life. This stage is seen as a way to establish an infant's understanding of self in relation to others: a prerequisite for experiencing the self as a continuous entity over time. The second stage covers the second and third years of one's life, when children face the challenge of *autonomy versus shame*. Erikson suggested that children achieve autonomy through their increasing control of body functions as well as their developing motor and linguistic skills. Early signs of language, such as using the pronoun 'I' to refer to themselves, reveal that children are now expressing desires and intentions that are attributed to the self.

The third stage, *initiative versus guilt*, occurs during the preschool years, which refers to children beginning to assign goals to behaviours while their motor and linguistic skills are still on the rise. Not only do goals orientate future behaviour, they also play an important role in encoding and storage of long-term memory. More importantly, knowing what happened to the self gives people a sense of who they are, and these memories form the basis for identity construction during adolescence (Conway & Pleydell-Pearce, 2000). The fourth stage covers the primary school years, and is named *industry versus inferiority*. During this period, children begin to experience the feelings of competency and self-worth; they also start to identify themselves with adults as examples of what their future self should look like. This

allows children to construct an ideal sense of self as a unique characteristic during and beyond adolescence.

Once people enter adolescence, the fifth stage of the identity development, their central task is to find a solution to the crisis of *identity versus role confusion*. Having acquired abilities such as trusting others, being independent, initiating appropriate actions, as well as striving for success, they are now able to integrate these abilities in order to answer the question of ‘who am I’. According to Erikson, adolescents’ increasing cognitive skills (e.g., the emergence of formal operations in terms of understanding of abstract concepts and future planning) and their advanced understanding of various cultural practices pave the way for identity exploration. In other words, formal operations allows adolescents to compare the present with the past, to contrast the imagined future with reality, and to understand that society’s expectations will regulate their behaviours within a particular cultural context. Both adolescents’ increasing cognitive skills and societal expectations urge them to consider what the ideal self is. Subsequently, these two forces orientate adolescents towards values that confirm the ideal self, and it is through this process that adolescents construct their identity.

The psychosocial theory claims that personal growth continues beyond adolescence. The sixth stage in the developmental cycle is terms as *generativity versus stagnation/care*, during which people develop intimacy towards significant others. Generativity, which is defined as the desire to be caring parents and to transfer good personal qualities to the next generation, becomes the major concern in the seventh stage. In the last stage of the developmental cycle, which is defined as *ego integrity versus despair*, people start to look back on their lives by either accepting or rejecting

the decisions they have made so far. In order to achieve a sense of full integrity, one must enjoy and appreciate the successes they have achieved and also endure and resolve the misfortunes they have encountered.

*Identity status model.* Even though Erikson identified adolescence as the period for a major upheaval in identity construction, he never empirically tested the validity of his claims; nor did he apply the psychosocial theory in cultures other than the American-European setting in which the theory originated. Marcia (1966) proposed an identity status model to empirically examine Erikson's sociocultural theory. In line with Erikson's suggestions that adolescents are seeking a balance between identity achievement and role diffusion, Marcia's theory also focuses on the combination of people's commitment to an occupation or ideology and the extent to which they are actively exploring other possible options.

According to the identity status model, there are four statuses associated with identity achievement, and each status indicates a different relationship between commitment and exploration. The least developed status is identity diffusion, indicating that a person has not yet committed to any ideology or explored the alternatives in the same domain. The most advanced status is achievement, which suggests that the person has committed to a certain ideology after going through extensive exploration in the related areas. Two statuses were placed in between role diffusion and identity achievement, each characterized by a lack of either commitment or exploration. Adolescents in the state of moratorium are going through active exploration but have not made any commitment, whereas those in the foreclosure state have committed to certain beliefs without much prior exploration.

Higher levels of identity achievement have been linked with better well-being outcomes, such that people with an achieved identity status have better subjective, psychological, and eudaimonic well-being; the latter refers to situations where satisfaction comes within the person for acting on his/her full potentials (Waterman, 2007). However, simply being committed to certain beliefs does not guarantee better well-being, because there is no significant evidence linking foreclosure and well-being (Hofer, Kärtner, Chasiotis, Busch, & Kiessling, 2007). This finding indicates that prior exploration of potential identities moderates the beneficial effects of identity commitment on well-being. In addition, people in the identity diffusion state show lower levels of self-esteem (Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993), lower life satisfaction (Waterman, 2007), and they also tend to be distant towards other people (Orlofsky, Marcia, & Lesser, 1973) than those with more developed identities.

Waterman's 'developmental hypothesis' of the identity status model was formed to investigate the developmental trend of identity statuses (Waterman, 1982). This theory made two assumptions regarding the nature of identity status progression: the first assumption is that people move away from role diffusion and towards achievement as they mature, and the second assumption clarifies the transitions between the different statuses that people go through as they progress. In particular, it was hypothesized that people in the diffusion status would move into either foreclosure or moratorium, and subsequently arrive at achievement status. Indeed, there is evidence supporting this progressive trend as we age, with studies showing that the prevalence of achievers is higher in older age groups (e.g., emerging adults) as compared to younger age groups (e.g., adolescents), whereas the inverse was found for the prevalence of diffusions (Kroger, 2007; Meeus, 1996). However, findings to support the second hypothesis are less consistent in terms of the exact pathways by which people make the

transition from diffusion to achievement. Furthermore, it is still unclear whether it is necessary for people to experience foreclosure and subsequently moratorium in order to reach achievement.

Meeus, Van De Schoot, Keijsers, Schwartz, and Branje (2010) conducted a 5-wave longitudinal study investigating identity formation among 12- to 20-year-old adolescents. Instead of using the Objective Measure of Ego Identity Status (OM-EIS) which captures the dynamics between commitment and exploration, the authors used the Utrecht-Management of Identity Commitment Scale (U-MICS), which proposes a 3-dimensional approach based on the interplay between commitment, in-depth exploration, and reconsideration of commitment (Crocetti, Rubini, Luyckx, & Meeus, 2008). The U-MICS included five identity statuses, four of which are identical to what Marcia suggested in the identity status model. The new status – searching moratorium – is defined as a combination of high commitment, high in-depth exploration, and high reconsideration of commitment. Searching moratorium status differs from the traditional moratorium in terms of the extent of commitment, as well as its impact on people's psychological functioning. Specifically, searching moratorium is associated with lower levels of depression, anxiety, and higher warmth towards others, whereas moratorium has been linked with poorer psychological outcomes.

At Wave 1, participants were divided into two cohorts: an early-to-middle adolescent group ( $M = 12.4$  years) and a middle-to-late adolescent group ( $M = 16.7$  years); there were five waves of assessments for each cohort. Meeus et al. showed a clear pattern for identity maturation in adolescence as shown in the increase of highly committed statuses (e.g., achievement and closure) and a decrease in the number of individuals still confused about their identity orientation (e.g., diffusion) and people

who are still actively searching for their identity (e.g., moratorium and searching moratorium).

In sum, their data support the perception of identity formation in a progressive framework; adolescents were moving out of statuses that are low in commitment or high in exploration into highly committed statuses. These authors also claimed that high commitment statuses are more likely to be the end-point of identity exploration, whereas searching moratorium or classic moratorium statuses are more likely to be transitional. Finally, the finding that only a quarter of adolescents at Wave 5 were classified as achievers indicates that not everyone reaches achievement status during adolescence, and that identity formation is a process that continues well beyond adolescence. Even though progressions were found with regard to identity status, 63% of adolescents did not shift to another status between Waves 1 and 5. This finding casts some doubt over the ability of traditional identity measures to capture the changes of one's identity as influenced by the surrounding social context: this drawback can be overcome by taking a narrative approach to the understanding of identity development.

#### A narrative approach to identity development

*McAdams' life story theory.* Another way to empirically examine Erikson's claim that adolescence is a critical period for identity construction comes from a narrative approach focusing on people's life stories. The life story theory of identity development was first proposed by Dan McAdams (1985; 1995a, 1996), and claims that identity is constructed through the telling of personal life stories that are situated within a socio-cultural context. In other words, a person's life story is an expression of his/her identity, reflecting the meaning of one's life. The life story theory differs from other traditional approaches to personality in terms of its emphasis on the influences of

socio-cultural factors in the making of a person. For example, personality theories such as the “Big Five Taxonomy” (McCrae & Costa, 1987) tend to view the construction of identity as a series of personality traits that are decontextualized and remain stable regardless of the existence of other psychosocial factors. This approach can be problematic in the sense that human beings are the products of social activities. Their behaviours therefore change according to different social expectations; people are constantly updating the content of the life story depending on their audiences and social surroundings. Furthermore, traits do not predict what events people will include in their life stories; a generally optimistic person might include some negative experiences as central to his/her life story. Therefore, knowing a person’s dispositional traits does not tell us about that person’s life experiences, and studying a person without considering his/her personal past and cultural background does not fully reflect that person’s whole identity.

Taking into account the interaction between self and social context, McAdams argued that personality is best described using a framework consisting of three independent levels. Level 1 consists of dispositional personality traits, such as the five basic personality traits (e.g., openness, conscientiousness, extraversion, agreeableness, and neuroticism). Level 2 includes personal concerns or characteristic adaptations, and consists of personal qualities such as personal strivings, motivations, domain-specific skills, as well as other constructs to capture aspects of identity not covered by those basic traits. Specifically, an individual’s personal concerns take different forms depending on developmental stages. For instance, generativity – the desire to care for the younger generation’s well-being – appears to be a salient feature for middle-aged adults, whereas developing intimate relationships is the predominant personal goal during early adulthood. In addition, social role is another contextual factor that



determines the nature of personality. An individual can be gentle and caring as a parent, whereas the same person can be strict and fierce in the work environment.

Level 3 of McAdams' model comprises the psychosocial construct of personal identity, in the form of narrated life stories that integrate knowledge about the self from the past, the present, and the anticipated future. Furthermore, identity is "an integrative configuration of self-in-the-adult-world" (McAdams, 2003, p. 188), and people experience the sense of a unique and enduring self by integrating different, and sometimes conflicting, aspects of the self both synchronically (i.e., selves situated within different social contexts) as well as diachronically (i.e., selves situated across various life periods).

*Life story interview.* As mentioned earlier, narrative identity can be examined through life story narratives, which integrate significant events from an individual's past, present, and the imagined future to express the meaning of an individual's life (McAdams, 1996, 2003). McAdams's *Life Story Interview* contains open-ended questions to guide the narration of one's life story. The interview contains several sections designating to different aspects of one's life, including life chapters (i.e., a brief overview of one's entire life), nuclear episodes (i.e., high point, low point, turning point memories), future life story, challenges in life, personal ideology, and life theme (McAdams, 1995b). Specific details are required in different sections. For the life chapters, participants are told to give a summary of their lives, in the form of story chapters. In addition, they are encouraged to give details about the specific memories, such as describing the emotions they felt and explaining why such an event is important with regard to who they are as a person.

The structure and content of the life story interviews can be analysed both quantitatively and qualitatively. For instance, life stories differ from each other in terms of story details and emotional intensity. Given that there are cultural, age and gender differences in the content and structure of people's autobiographical memory (Adams et al., 1995; Fivush, 1989; Fivush, 1993; Han, Leichtman, & Wang, 1998; Wang, 2001a), such differences may also be reflected in the life stories. Meanwhile, the coherence of the story indicates the maturity of one's narrative identity. Specifically, it is the interpretations and meaning of people's life stories that represent who they are as a person; information about what exactly happened plays a lesser role in this regard. A crucial step that people undertake when forming an identity is to establish links between memory and self. In other words, they must realize the various characteristics of the present self are shaped by what happened to the self previously. I now introduce specific aspects of narrative coherence that are crucial for the establishment of coherent, meaningful life stories, and also review a developmental framework for the construction of a narrative identity.

*Life story coherence.* In line with Erikson's psychosocial theory that identity only starts to develop once we reach adolescence, it has also been contended that it is only from late adolescence that we can successfully construct our life stories in a meaningful and coherent way (Habermas & Bluck, 2000). Habermas and Bluck (2000) proposed four types of global coherence: *temporal coherence*, *causal coherence*, *thematic coherence*, and *cultural concept of biography*. These four types of coherence are essential for a life story to be considered as an integral part of one's identity. It is expected that each type of coherence emerges at different stages of the life cycle depending on the level of cognitive maturation of the individual. Specifically, it is suggested temporal coherence develops first, followed by causal and thematic

coherence; with the cultural concept of biography emerging in early adolescence and continuing to develop through ongoing experiences with social norms and expectations.

Temporal coherence refers to the ability to organize discrete events in a chronological order that fits into the social norms for the expected order of these events. Narrative structures such as phrases indicating life phase, age, calendar date, and so forth are responsible for creating temporal coherence within a life story. By providing these structures, listeners are orientated to a particular time that the narrated event took place in one's life. Causal coherence refers to how the narrator uses episodes in the life story or autobiographical experiences to explain changes in his/her personality or belief system, establishing causal links between events and changes in the self. There are a number of ways to establish causal coherence in life story narratives, such as using phrases that imply causal links (e.g., *because*, *as a result*), or engaging in narrative practices (e.g., meaning-making) to explain how the self has changed as a result of certain events. Various narrative practices representing causal coherence are discussed in the later part of this chapter.

The third type of coherence is thematic coherence, which refers to the use of various thematically similar events to establish one or many overarching themes within the life story. Thematic coherence can be achieved by offering explicit or implicit links in the transition between narrating one event to another. The last type of coherence is cultural coherence, which refers to the extent to which people structure their life stories based on a particular culture's expectations on how a typical life should look. In other words, this type of coherence taps into people's tendency to narrate events that signify important landmarks or critical transitions in their lives.

Habermas and de Silveira (2008) empirically examined the claim that globally coherent life narratives develop in adolescence, and that different domains of coherence emerge on a developmental trajectory. In their study, children and young adults were divided into four age groups: 8-, 12-, 16-, and 20-year-olds, with an equal split of gender in each group. Participants told their life stories twice, with the second telling two weeks after the first time. Participants were first instructed to write down seven specific events that were important in their lives, and then they were given 15 minutes to tell their life stories, integrating these seven specific events. Additional information was collected with regard to participants' intelligence, number of negative experiences in their lives, and whether they had habits that were related to constructing an autobiography (e.g., keeping a diary or reading biographies). The results showed no correlations between these characteristics and participants' narrative coherence.

Separate scores for temporal, causal, and thematic coherence were given, based on separate rating scales of global coherence in each domain and the number of local coherence indicators. The length of the narratives increased with age with significant increases in the number of propositions found between 8- and 12-year-olds and between 12- and 16-year-olds. Additionally, there were age-related increases in all types of global coherence. For temporal global coherence, the ratings increased significantly between 8- and 12-year-olds and again between 16- and 20-year-olds. In terms of causal global coherence, measured by the Developmental Consequentiality (DC) scale, ratings increased linearly between all four age groups; significant increases were found between each older age group and the adjacent younger group. A similar pattern was also obtained for thematic global coherence, such that 20-year-olds scored significantly higher than 16-year-olds, who scored significantly higher than 12-year-

olds. However, there was no significant difference between 8- and 12-year-olds on the thematic coherence scale, as scores for both groups were at or near floor on the scale.

Age-related increases were also observed among many local indicators of causal and thematic coherence. For example, 12-year old children provided more causal links between events and personality than did 8-year-olds. In contrast, the total number of temporal indicators did not differ across age groups. However, it was revealed that the use of life phases and correct dates increased significantly with age, and these were almost absent in the youngest group. The results also suggest that each type of global coherence emerges at different developmental stages. Specifically, it was found that temporal coherence was most likely to emerge between 8 and 12 years of age, causal coherence emerges between 12 and 16 years of age, and thematic coherence emerges between 16 and 20 years of age. The emergence of cultural coherence was presented in a separate study, which I will address in the following section.

In summary, Habermas and de Silveira provided the very first empirical evidence to support arguments, put forward by McAdams (1985) and Habermas and Bluck (2000), that narrative identity first emerges in adolescence, as indicated by age-related increases in both global and local indicators of temporal, causal, and thematic coherence. Contrary to Habermas and Bluck's (2000) claim that coherent life stories are not possible until at least mid- adolescence, some 8-year old children in this study were able to provide reasonably coherent accounts of their life stories. However, 8-year-olds' narratives still lacked some crucial local indicators of coherence and scored lower on global coherence scales than did the narratives of older participants. Nevertheless, this finding opens up the debate on whether it is possible to capture the early signs of

coherent life narratives at a younger age. It also prompts further research to investigate developmental precursors for the emergence of narrative identity in adolescence.

*Cultural life scripts.* Another aspect important for life story coherence is cultural life scripts, which refers to a set of shared expectations for the order and timing of life events that a prototypical life should contain (Berntsen & Rubin, 2002; Rubin & Berntsen, 2003). A cultural life script is a cognitive structure that reflects cultural norms on transitional events found in a typical life course rather than representing individual lives. The existence of life scripts has been proposed as one of the explanations for the phenomenon known as the reminiscence bump, which refers to a dramatic increase of positive memories recalled from the second and third decades of life, coinciding with the emergence of identity (Bohn & Berntsen, 2011; Rubin, Wetzler, & Nebes, 1986). Cultural life scripts represent knowledge about what Habermas and Bluck (2000) defined as the cultural concept of biography, which is a crucial component of a coherent life story.

Berntsen and Rubin (2004) examined whether people would use life scripts to organize a prototypical life narrative by asking young adults to generate seven important events that an infant was most likely to encounter during the course of his/her life. For each event, participants also estimated its prevalence, importance, and valence, as well as when in a prototypical life it was most likely to happen. The results showed a high overlap among participants' lists of events. Most of the events represented transitions defined by cultural norms (e.g., starting school, marriage, having children) rather than biological landmarks (e.g., puberty, death). This is evidence to suggest that life scripts are cognitive structures shared within a given culture and are independent from individual life experiences. In fact, many of the nominated events had not yet

been part of participants' life experiences, and real-life prevalence of events was not correlated with the frequency of such events being nominated as life script events.

Furthermore, positive events that happened between the ages of 15 and 30 years were more likely to be part of one's cultural life scripts than events from other life periods. These positive life events were also more likely to be included in a prototypical life story, suggesting that people activate their internal representation of life scripts to organize life narratives. Berntsen and Rubin contended that, taken together, personal events that fit into cultural life scripts are more likely to be rehearsed and elaborated on, compared to those that do not; subsequently such rehearsal and elaboration also increases the chance for such events to be retrieved in the future and therefore become part of one's narrative identity.

As mentioned earlier, the cultural concept of biography is required for the construction of a coherent life story, which includes the conventional ways to begin and to end a life story, the biographical salience of personal events, as well as age norms for landmark events that are commonly shared within a society. The latter two components are also characteristics of cultural life scripts. Habermas (2007) extended the research on life scripts by studying the development of the knowledge about biographical salience and age norms from late childhood to early adulthood. This study was based on the same sample as Habermas and de Silveira (2008), in which participants were classified into four age groups: 8-, 12-, 16-, and 20-year-olds. In order to assess their understanding of biographical salience, a set of 40 events were presented to participants, who were instructed to decide whether each event should be included in a life narrative. Another set of 25 events were also presented to examine the acquisition of age norms,

such that participants were simply asked to give an estimated time as to when an event was most likely to happen.

The selection criteria for biographical salience and age norms were established with a sample of young and middle-aged adults. Both groups of participants gave similar responses, indicating that those events were indeed shared among people across adulthood. The results showed age-related decreases in the number of incorrectly identified biographically salient events; the estimated ages of events also deviated less from expected norms as participants grew older. Specifically, knowledge about biographical salience and age norms increased significantly between 8- and 12-year-olds. Sixteen-year-olds performed significantly better than 12-year-olds on estimating age norms. This study showed that a great leap in the acquisition of cultural concept of biography takes place between 8 and 12 years of age, and most of such knowledge is likely to be attained by age 16.

Furthermore, Bohn and Berntsen (2008) investigated the relationship between cultural life scripts and life story coherence from late childhood to adolescence. In this study, 140 Danish middle-class children aged between 10 and 14 years old wrote three narratives: a recent biographical event, a life story of their own, and a cultural life script. The recent biographical event was defined as an event that happened in the fall vacation that ended three weeks prior to the time of data collection. The life story was described as things that happened in the child's life from birth until the present time, such as the most important things that happened or things that had subsequently changed the child's life. For the cultural life script, participants were asked to write down ten important events that would occur in a newborn's entire lifespan, and they were also asked to estimate an age as to when the event was most likely to happen.



Children's life scripts were compared against a set of norms derived from an adult sample. Life script typicality was measured by a typicality score, which was the frequency of children's life script events that were also mentioned by adults. Life scripts were also given an idiosyncrasy score, which represented events that were mentioned by fewer than four adults. The biographical event narratives were coded for their global coherence (which captures the degrees of story orientation), chronological order, and narrative evaluation. Life story coherence was measured in the following dimensions: story beginning and ending, the number of life script events mentioned in the life story, and the global coherence of the story.

Age-related increases in story length and coherence were found in both life story narratives and single-event narratives. None of the children in the youngest age group ( $M = 9.5$  years) were able to provide globally coherent life stories, as measured by the ability to place several episodes in a chronological order with additional evaluations of the events. This finding contradicts work by Habermas and de Silveira (2008), in which children as young as 8 years old exhibited some rudimentary signs of coherence in their life stories. This discrepancy was possibly due to differences in how life narratives were collected. Bohn and Berntsen collected written accounts of life narratives, which require higher levels of cognitive maturity to establish coherence, compared to the oral narratives collected by Habermas and de Silveira. However, children in Bohn and Berntsen's study were able to produce coherent single-event narratives (as measured by the same scales used for their life stories).

In contrast, a small group of children in the oldest age group ( $M = 14.5$  years) were able to provide a detailed account of their lives with a series of related events based on a chronological order, with appropriate, informative beginnings and endings.

This finding lends further support for Habermas and Bluck's (2000) claim that a coherent life story does not fully develop until adolescence. With regard to the acquisition of life scripts, the results showed a steady increase in life script typicality with age. However, life script typicality did not reach adult level even in the oldest group, which is consistent with findings from Habermas (2007) that knowledge about biographical salience and age norms is not fully acquired until the age of 16.

Bohn and Berntsen also found gender differences in the length and coherence of life story narratives, such that girls were able to produce longer and more coherent life stories than were boys, consistent with gender differences found in the autobiographical memory literature (e.g., Haden et al., 1997). Most importantly, only children's life script typicality and their age were significant predictors of their life story coherence, and no significant correlations were found between life story coherence and single-event coherence. It seems, therefore, that the ability to tell a coherent narrative that is based on a single event develops separately from the ability to narrate a globally coherent life story. Instead, other cognitive factors, such as the knowledge about cultural life scripts, uniquely contribute to the development of global coherence in life stories.

*Narrative meaning-making.* As already reviewed, a coherent life story forms a representation of an individual's identity. Narrative meaning-making paves the way to causal coherence in life narratives. This is defined as the process by which people extract meanings from past experiences as an attempt to understand how they become who they are. In addition, gaining these meaningful insights could enable them to be used as references for future behaviours, thus enhancing self-understanding (Pillemer, 1992).

McLean and her colleagues (McLean, 2005; McLean & Breen, 2009; McLean, Breen, & Fournier, 2010; McLean & Pratt, 2006; McLean & Thorne, 2003) conducted a series of studies documenting the developmental trajectory of narrative meaning-making from middle childhood to emerging adulthood. They also investigated the relationship between meaning-making and individuals' well-being. Most of these studies focused on meanings extracted from self-defining memories, which refer to vivid, well-remembered, and highly important memories that are at least one year old and convey an important message of how people had become who they currently are (Singer & Moffitt, 1991-1992). Our autobiographical memories, which are the raw materials for us to choose from when narrating our life stories, include these self-defining memories. The specific lessons or insights that we gain from self-defining memories make these experiences unique to us, thus contributing to the construction of identity.

The degree of insights extracted from narratives can be measured on the meaning-making scale, which was first developed by McLean and Thorne (2003) and later refined by McLean and Pratt (2006). McLean and Thorne (2003) treated meaning-making as a categorical variable, such that meaning was classified as either a lesson learned or gaining insight. In the most recent version of the scale, McLean and Pratt (2006) defined meaning-making on a 4-point scale, ranging from no meaning to gaining insight. No meaning (0) refers to narratives in which the narrator did not describe whether his/her life had changed because of the event, and also included narratives in which there was no self-reflection. Lesson learned (1) was defined as having learned a certain behaviour, which would in turn direct the person's future actions (e.g., I realize I shouldn't punch people when I'm angry). Vague meaning (2) was given to a narrative in which changes in the self were mentioned but the explanations for those changes

were not sophisticated (e.g., I am a stronger person now). Gaining insight (3) was assigned to a narrative when the narrator underwent self-reflection and explicitly explained the changes in his/her life, while also generalizing the meaning of that change to other aspects of his/her life. This 4-point scale aims to be a linear measure, such that an increase in the score indicates a higher level of meaning.

Following Erikson's (1968) claim that forming an identity is the central task for adolescents, early studies on narrative meaning-making focused on how older adolescents extract meanings from self-defining memories according to the type and function of these memories. For instance, Thorne, McLean, and Lawrence (2004) studied narratives of self-defining memories written by college students aged between 18 and 23, in which they completed the Self-Defining Memory Questionnaire (adapted from Singer & Moffitt, 1991/1992) for each of the three memories. For each memory, participants were instructed to provide a narrative for the actual event (*event narrative*), as well as describing a time when this memory was shared with other people (*telling narrative*). The type of life event was classified as one of the following categories: relationships, mortality, achievement, and leisure. Meaning was qualified as either a lesson learned or as gaining insight, and separate codes were given to the event and telling narratives. In addition, the presence of tension (e.g., explicit report of discomfort, disagreement, or uneasiness) and listeners' responses (positive or negative) were also coded from the narratives.

With regard to event type, relationship was the most featured theme (44%), followed by mortality (24%), leisure (17%) and achievement (13%). This finding mirrored previous research, such as Thorne and McLean (2002), suggesting that establishing new relationships and re-arranging old relationships are the most salient

themes of adolescents' self-defining memories. Only about 25% of the narratives reported signs of meaning in the forms of lessons or insights, and they were most likely to be associated with mortality and relationship memories. The higher prevalence of meaning from mortality and relationship memories may have been partly caused by a greater amount of tension existing in these events. This is consistent with other research showing that greater integrations and explanations are required to make sense of negative experiences, and these narrative devices are associated with better well-being (Fivush, Brotman, Buckner, & Goodman, 2000; Reese, Bird, & Tripp, 2007).

Interestingly, having told the event to others did not increase the chance of gaining lessons or insights from self-defining memories. However, insights were more likely to be mentioned in the event narratives rather than the telling narratives, indicating participants have already integrated the meaning of the event into their mental representation of self. Listeners showed preferences for narratives containing insights over lessons learned, suggesting that they expected lessons would eventually become insights with in-depth self reflections and more resolution. In summary, this study showed that even in emerging adulthood, gaining meaningful reflections of past experiences is rare, indicating that narrative identity formation is an on-going process. Further, meaning was more likely to be present in narrations of negative memories, suggesting the importance of understanding and overcoming negative experiences with regard to the construction of narrative identity.

In recent years, attention shifted to establishing the framework underlying the developmental trajectory of meaning-making skills, as an attempt to document the early signs of a narrative identity. McLean and Breen (2009) collected written turning point narratives (i.e., an event that has changed a person's life significantly) from 171

adolescents (including 77 boys) aged between 14 to 18 years old. The functions of sharing these memories with others were also recorded; whether sharing was to get advice from others, to get closer to others, to explain the current self, or for entertainment purposes. Again, narratives were coded for the degree of meaning-making on McLean and Pratt's (2006) 4-point scale. Although this sample contained a range of ethnicities (White, Black, Asian and a mix of others), preliminary analyses did not show any significant effects of ethnicity or interactions between ethnicity and gender.

In terms of telling functions, the only gender differences were found for the relational function, such that girls' narratives were more likely to be used as a tool to maintain relationships with others than boys. Due to past research showing that girls tend to provide narratives with more details and to include more references to the emotional and psychological aspects of events (Haden et al., 1997), it was expected that girls would score higher on the meaning-making scale than would boys. However, McLean and Breen found no gender differences in the complexity of meaning that adolescents extracted from past experiences. Furthermore, an age-related increase was found for meaning-making, even after controlling for narrative length. Specifically, it was revealed that a major increase in meaning-making occurred between age 16 and 17 years, whereas meaning-making was relatively stable up to age 16. This finding suggests that it is during late adolescence that people begin actively seeking meaning or engaging in processes of self-reflection, coinciding with the age where the formation of identity is of paramount importance due to societal and developmental demands. Again, this is consistent with Habermas and Bluck's (2000) argument that a narrative identity emerges in mid to late adolescence.

*Two approaches of identity development.* As already reviewed, Erikson's psychosocial theory of identity development can be empirically examined by Marcia's (1966) identity status model and McAdams' (1996) life story theory. McLean and Pratt (2006) extended these ideas by investigating the links between identity status and meaning-making in adolescence. In their longitudinal study, four dimensions of identity statuses (achieved, moratorium, foreclosed, diffused) and an overall identity maturity index were measured at different time points (age 17, 19, 23). Adolescents' personality was accessed with regard to optimism and generativity. The level of meaning-making obtained from turning-point narratives was used as an indicator of narrative identity maturity at age 23.

It was predicted that higher levels of identity status (e.g., identity achievement) would correspond to higher levels of meaning-making. However, not all identity statuses taken from previous time points were correlated with meaning-making at the last time point. In fact, meaning-making was more closely connected to lower levels of identity statuses, such that foreclosure was associated with lower levels of meaning-making and a similar pattern was found between diffusion and meaning-making. On the other hand, scores on the identity maturity index, indicating an overall identity status, were significantly positively correlated with meaning-making at age 23. Such findings suggest that meaning-making reflects an overall mature identity, rather than a single dimension of identity status. Regression analyses also showed that the identity maturity index uniquely predicted meaning-making, when controlling for narrative length and gender. Therefore, this study offers evidence to suggest that the two approaches of identity development, namely the traditional personality measures and the narrative measures of identity, overlap with each other. Nevertheless, these two approaches are still distinctive pathways of identity construction, given that these two measures of

identity (i.e., meaning-making and personality traits) are only weakly correlated with each other ( $r$  values ranged from  $-.22$  to  $.12$ ).

In conclusion, empirical studies have supported McAdams' claim that the highest level of a person's identity can be measured through analysing the content and structure of his or her life story. There is also evidence that narrating fully coherent life stories is a skill that develops during mid- to late adolescence (Habermas & Bluck, 2000): this ability coincides with a critical period for the formation of personal identity (Erikson, 1968). However, evidence also suggests that 8-year old children were capable of producing reasonably coherent life narratives (Habermas & de Silveira, 2008). These apparently paradoxical findings set up the first objective of the current thesis – to explore the construction of life narratives from middle childhood to late adolescence. Furthermore, although different types of narrative coherence emerge at different developmental stages, little is known about how such skills develop. Therefore, a second objective of the current thesis is to identify some developmental precursors that contribute to the ability to produce coherent, meaningful life narratives.

### ***Narrative Identity and Well-Being***

#### **Hedonic and eudaimonic well-being**

Well-being is often referred to as people's optimal experiences of psychological functioning and physical health (Ryan & Deci, 2001). Two distinctive, but overlapping, approaches have been identified in the literature, namely the hedonic and eudaimonic views of well-being. Hedonic well-being, which emphasizes subjective well-being, refers to feelings of happiness and pleasure, such as high levels of positive affect, high levels of life satisfaction and low levels of negative affect (Diener & Lucas, 1999). Eudaimonic well-being, which emphasizes psychological well-being, refers to people's



desires to fulfil their potential in life and can be achieved by having a life that is in accordance with life goals (Ryan & Deci, 2001; Waterman, 1993). External factors such as monetary and edible resources can increase hedonic well-being. In contrast, the pursuit of eudaimonic well-being is generally internally motivated and adds to the feelings of hedonic well-being in terms of how well one's life goals are integrated into the perception of current life. Specifically, people's attempts to look for the meaning of life, the realization of personal growth, and the achievement of psychological maturity all contribute to eudaimonic well-being (Bauer, McAdams, & Pals, 2008; Ryan & Deci, 2001; Ryff & Singer, 2008).

By definition, the hedonic and eudaimonic views of well-being are distinctive from each other in terms of the way people's feelings toward life and themselves are represented, but there is evidence to suggest that these two approaches also overlap with each other. For instance, Compton, Smith, Cornish, and Qualls (1996) identified two factors from an array of well-being measures, with one focusing on subjective well-being (i.e. hedonic) and the other focusing on personal growth (i.e. eudaimonic). Interestingly, these two factors were moderately correlated with each other. It was further revealed that people tend to combine happiness with the meaning of life when asked about what constitutes as a good life (King & Napa, 1998). Therefore, well-being should be considered as multidimensional, and different measures are required if researchers intend to investigate different aspects of well-being (Ryan & Deci, 2001).

#### Life story coherence and well-being

Being able to tell our experiences in a narrative form is one of the many cognitive skills that are refined with age. Putting our experiences into words helps us to better understand and derive meaning from these experiences. There is evidence to

suggest that expressive writing, which refers to writing and telling stories about traumatic experiences repeatedly over a short period of time, helps people better understand their thoughts and feelings, which in turn enhances their physical and mental well-being (Pennebaker & Seagal, 1999). In an expressive writing experiment, participants are required to write on a specific topic (normally relating to distress and other negative feelings), over a consecutive number of days (e.g., four days) for about 15 minutes each day. Compared to participants who engaged in the same amount of writing on neutral topics, participants in the expressive writing condition later experienced a greater number of positive outcomes, such as less distress, better physical health and even better academic or professional results (Pennebaker, 1993; Pennebaker & Francis, 1996; Pennebaker, Kiecolt-Glaser, & Glaser, 1988).

Why does the expressive writing method produce so many positive outcomes? One of the plausible explanations is that putting experiences in a story form changes the way that people understand trauma; effectively such a writing task acts as a coping strategy. Specifically, re-experiencing traumatic events, in terms of producing coherent narratives about the emotions experienced when the event occurred, may help people to re-evaluate the trauma and to be open and accepting of the negative events in their lives. It also gives people the chance to engage in self-reflection as a way to assign meaning to their past. Indeed, research has shown that people who benefit the most from an expressive writing task are those who disclose a greater number of positive emotions and cognitive words to describe their mental processes. These individuals also include a moderate number of negative words in their narratives, indicating that they are not simply avoiding the negative feelings. In fact, writing intensively about negative emotions helps them to better understand and resolve the negative feelings, which consequently leads to better well-being (Pennebaker & Seagal, 1999).

In addition, Gergen and Gergen (1988) used the term self narrative to describe stories that people tell about critical events in their lives; these critical events are the building blocks for the construction of life story narratives. As already discussed, an integrated narrative of one's life reflects the highest level of one's identity, which is linked with individual well-being. As Erikson contended, "An optimal sense of identity, on the other hand, is experienced merely as a sense of psychosocial well-being" (Erikson, 1968, p. 165). Furthermore, the eudaimonic view of well-being argues that well-being is experienced through searching for the meaning of life and by living a life that fulfils one's maximum potential (Ryan & Deci, 2001); both of which can be reflected in the themes and goals of life story narratives. Since an optimal sense of identity is characterised by a coherent life story (McAdams, 1995a, 1996), one would expect that the quality of a life story, as indicated by story coherence, as well as the process in which coherence is being created, would be related to well-being.

#### Life story coherence and well-being in adulthood

Baerger and McAdams (1999) developed a narrative coherence scale to examine the hypothesis that a coherent life story is associated with individuals' well-being. Fifty adults aged between 35 and 65 completed the Life Story Interview (McAdams, 1996), during which they were instructed to tell a life story and a series of eight critical life events (e.g., a peak experience, a nadir experience, a turning experience, an early memory, a childhood scene, an adolescent scene, an adult scene, and one other experience). In this study, only the eight critical events were coded for the degree of coherence, which was measured on four dimensions: orientation, structure, affect, and integration, each being coded on a 7-point Likert scale with a higher score indicating better coherence. Well-being was measured on the following

dimensions: life satisfaction – measured by the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larson, & Griffin, 1985), depression – measured by the Center for Epidemiological Studies Depression Scale (CES-D; Lewinsohn, Seeley, Roberts, & Allen, 1997), and general happiness – measured by the Happiness Scale (Baerger & McAdams, 1999).

Narrative orientation refers to how well the story was situated in a specific temporal, social, and personal context. Narrative structure refers to the extent to which the story was told with the appropriate episodic elements, such as a proper beginning and ending, and whether or not these elements were logically connected with each other. The affect scale focused on the extent to which the narrator evaluated the event, such as using emotion words and evaluations to convey the meaning of the event. Finally, the integration scale addressed the extent to which the specific autobiographical experience fitted in as part of the integrated life story. In other words, this scale reflected how well this event was related to an overarching theme of the life story. Although Baerger and McAdams did not formally classify narrative coherence into the various types of coherence proposed by Habermas and Bluck (2000), they did tap into some dimensions of Habermas and Bluck's scheme. Specifically, the orientation and structure subscales mapped onto aspects of temporal coherence, and the integration subscale corresponded to causal and thematic coherence. The sum of the scores on these four subscales was calculated for each event, representing event coherence (e.g., peak event coherence, nadir event coherence); the sum of the coherence scores of the eight critical events was also obtained as an indicator for overall coherence.

Intercorrelations were conducted on the coherence scores between the four subscales for all event narratives, and the correlations were moderately high (ranging from .29 to .56), suggesting an internal consistency between the different types of coherence. The most strongly correlated scales were affect and integration, and the least strongly correlated scales were orientation and integration. In addition, there were no main effects of age or gender on any of the coherence subscale scores. In terms of the relationship between life story coherence and well-being, it was found that both happiness and life satisfaction were positively correlated with the overall coherence score, whereas the level of depression was negatively correlated with the overall coherence score. Similar correlations were also found between event coherence scores (e.g., peak, nadir and turning point) and well-being, with the exception found in the turning point narrative, where coherence was negatively correlated with life satisfaction. Further, the strength of the correlations differed between the different subscales; the affect subscale correlated with all three well-being measures, followed by the integration scale which was correlated with two measures, and the orientation scale which was only moderately correlated with life satisfaction.

Age was linked to self-reported well-being, such that older participants reported higher levels of happiness and life satisfaction and lower levels of depression than did younger participants. Education level was also positively correlated with life satisfaction and with overall and peak experience coherence scores. Furthermore, multiple regression analyses showed that depression was a significant negative predictor for narrative coherence, and higher education levels predicted higher coherence scores. Neither the other well-being measures, nor age and gender uniquely predicted coherence. In summary, this was the first empirical study to demonstrate the link between life story coherence and well-being and to demonstrate that life story

coherence could be reliably measured with a multi-dimensional coherence scale. In this study, however, life story coherence was defined as the sum of several single-event coherence scores, which is different from a coherence score that is based on an entire life story, and thus assessed how well integrated the story is. This brings up another objective of the current thesis, which is to develop a coding scheme that captures coherence at the level of a whole-life story. Another aim of the current thesis is to further investigate the relationship between life story coherence and individual well-being during adolescence and also between different cultures.

McAdams and colleagues (Bauer & McAdams, 2004; Bauer, et al., 2008; McAdams, Reynolds, Lewis, Patten, & Bowman, 2001) also conducted studies to investigate the link between the structure of life story narratives and well-being, with a particular interest in the impact of the *redemption sequence*. Redemption refers to the gaining of positive outcomes from negative life experiences. The emphasis here is not about a change of people's immediate reaction to the negative experience, as negative affect may still linger after the initial event. Instead, positive self-revelations and sense of personal growth from such a negative experience are characteristics of a redemption sequence. In contrast, a *contamination sequence* is identified when an experience that had begun positively ended with negative consequences. McAdams et al. (2001) compared the differences in the relationship between these two types of narrative structures (e.g., redemption and contamination) and well-being among emerging and midlife adults.

In this study, oral and written descriptions of important life experiences were collected from midlife adults (35- to 65-year old) and college students (18- to 24-year old) respectively, as part of the life story interview. Midlife adults were classified into

two groups according to their scores on generativity, which refers to the tendency to impose a positive impact on the next generation. Overall scores of redemption and contamination across all events were used in subsequent correlations. For the midlife sample, individuals' well-being was measured in the following dimensions: life satisfaction (SWLS; Diener et al., 1985), self-esteem (RSE; Rosenberg, 1965), depression (CES-D; Lewinsohn, et al., 1987), and sense of coherence (SOC; Antonovsky, 1987), which measures the extent to which a person thinks the challenges faced in life are manageable and meaningful. For the emerging adulthood sample, well-being was measured by the SWLS and Ryff's (1989) measure of psychological well-being on a various dimensions.

Regardless of age group, significant positive correlations were found between redemptive sequences and the various well-being measures employed in the study, whereas negative correlations were found between contamination and well-being. In addition, no gender or cultural differences were found for the frequencies of redemptive sequences among the midlife sample, which consisted of participants from different ethnic backgrounds (e.g., European American and African American), with an equal number of both genders.

Furthermore, overall emotional tone was also coded in the emerging adults' narratives to compare the strength of correlations between redemption and well-being, and between emotional tone and well-being. The overall emotional tone was defined as the degree to which the narrative had a happy ending, and it was coded on a 5-point scale, ranging from a score of 1 indicating an extremely negative ending, to a score of 5, indicating a very positive ending. As expected, overall emotional tone was also positively correlated with well-being, but regression analyses further suggested this was

a weaker predictor of well-being than redemption sequences. When redemption and emotional tone were both entered into a regression model to predict life satisfaction, only presence of a redemptive sequence, but not emotional tone, uniquely explained variance in life satisfaction. However, this is not to suggest that emotional tone does not play a role in relation to well-being. In the autobiographical literature, emotion reminiscing in mother-child conversations has been linked with preschoolers' self-esteem (Reese et al., 2007). Therefore, it is possible that emotional tone precedes redemptive sequences in terms of predicting well-being among pre- and early adolescents. Young children are capable of describing various emotions and evaluations in a narrative, but are still limited in integrating these affective terms into a meaningful and coherent story.

#### Life story coherence and well-being in adolescence

Very few studies have investigated the relation between narrative identity and well-being in middle childhood and early adolescence, and research to date has so far yielded mixed findings. Some studies found no significant correlations between these two variables depending on which aspect of narrative identity was being studied, whereas others have found negative correlations between narrative identity maturity and individuals' well-being. Not only is adolescence a critical period for identity development, it is also an important developmental stage for experiencing well-being. With the increasing demands of psychosocial development, along with biological changes to the body, life can be quite chaotic for adolescents. Thus, this developmental stage is associated with decreases in well-being. For instance, depression increases and self-esteem tends to decrease during adolescence for both males and females. However, gender moderates the effect of age on well-being, such that females tend to report



higher levels of depression and lower levels of self-esteem than do males (Block & Robins, 1993; Petersen, Sarigiani, & Kennedy, 1991; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). It is beyond the scope of the current thesis to discuss in detail why such gender differences occur, but it has been proposed that different socialization goals assigned to each gender as well as differences in perceiving body changes contribute to gender differences in well-being (Petersen, 1988; Petersen, et al., 1991). Together, these findings highlight the importance of investigating the relations between narrative identity and well-being from middle childhood to adolescence: a period when identity starts to blossom whereas individual's well-being is at the lowest level in the lifespan.

One study that investigated the dynamics between narrative identity and well-being during adolescence was conducted by McLean and Breen (2009). They measured the development of narrative identity in their 14 – 18 year old sample using McLean and Pratt's (2006) meaning-making scale. Apart from meaning-making, the emotional tone of the narratives was also coded based on two aspects: overall positive emotion tone and redemptive sequence. The overall positive emotional tone was coded on a 3-point scale, on which the intensity of positive emotions increased as the scale went up; redemptive sequences were defined as in previous research (e.g. McAdams, et al., 2001), and referred to the transitions in the narrative where negative events turned into positive endings. Adolescents' well-being was measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

A series of regression analyses were conducted to see if gender, age, and the narrative variables differed from each other in terms of their ability to predict well-being. Age was not a significant predictor of well-being in any of the models, whereas

gender consistently predicted well-being, such that girls reported lower levels of self-esteem than did boys. With regard to the narrative variables, meaning-making was not a significant predictor of well-being in any of the analyses, nor were there any interactions between gender and meaning-making. Positive emotion tone was a significant predictor of well-being when it was entered alone. However, this predictor was not significant when redemption was entered into the model. In contrast, redemption remained a significant predictor of well-being even when emotional tone was also included in the regression model. Further, there was a significant interaction between redemption and gender. Redemptive sequences did not predict well-being for girls, whereas for boys, the presence of redemptive sequences predicted higher levels of self-esteem.

Even though McLean and Breen (2009) did not find significant correlations between meaning-making and adolescents' levels of self-esteem, it is still possible that meaning-making might be related to well-being in a different age group, or to different aspects of well-being besides self-esteem (i.e., hedonic vs. eudaimonic well-being). It is also possible that gender moderates the relationship between meaning-making and well-being, such that meaning-making is linked to well-being for one gender, but not for the other. Indeed, McLean et al. (2010) found a main effect of meaning-making in predicting well-being, also measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965) among 11- to 18-year old boys. This main effect was further qualified by an interaction between age and meaning-making, such that meaning-making was negatively correlated with well-being for early adolescent boys, but this negative association was not present in late adolescence.

### Narrative coherence, personality, and well-being

As already reviewed, McAdams' life story theory proposes a 3-level model to describe identity, and research has shown that personal characteristics situated on level 1 (i.e., dispositional traits) and level 3 (i.e., life story narratives) from this model independently predict maturity and subjective well-being (Bauer & McAdams, 2010; Bauer, McAdams, & Sakaeda, 2005; Hayes & Joseph, 2003).

With regard to the predictive power of personality for well-being, research has shown that some aspects of the Big-5 personality traits are more relevant to subjective well-being than are the others. For instance, neuroticism and conscientiousness have been shown to be the best trait predictors of scores on the Satisfaction with Life Scale (Hayne & Joseph, 2003). In other research, conscientiousness was the only trait that significantly predicted increases in subjective well-being three years after an initial well-being assessment (Bauer & McAdams, 2010).

In addition, research has shown that both trait personality and life narratives predict subjective well-being. For instance, in Bauer et al. (2005), a group of young and older adults wrote narratives about life's low, turning, and high points. It was shown that narratives emphasizing cognitive or conceptual growth to foster a deeper understanding of the self (integrative memories), as well as narratives focusing on personal growth in the domains of having meaningful relationships with others and personal contributions to society (intrinsic memories), both predicted subjective well-being. However, both types of memories showed stronger correlations with eudaimonic well-being, as measured by Ryff and Singer's construct of personal well-being (PWB) (Ryff & Singer, 1998), than with hedonic well-being, as measured by the satisfaction with life scale (SWLS; Diener et al., 1985). Such findings are in line with the

expressive writing paradigm, which proposes that people experience better well-being after writing as a result of cognitive processes that help to explain and resolve negative emotions (Pennebaker & Seagal, 1999). It also demonstrated that including growth goals as part of a life story elaborates the meaning of life, and thus contributes to eudaimonic well-being.

Consistent with prior research, Bauer et al. also showed that personality traits predicted well-being, such that extraversion predicted positive well-being, whereas neuroticism predicted negative well-being. Furthermore, integrative memories predicted more variance in well-being over and beyond dispositional traits, indicating that the life narrative as a contextualized measure of personal identity is indeed capturing a more advanced level of identity than are personality traits. In summary, these studies lend support to McAdams' claim that traits and life narratives are related but distinctive aspects of people's self-concept, and that narrative identity is indeed uniquely linked to subjective well-being.

Taken together, the above studies demonstrated that narrative structures associated with a mature identity, such as redemptive sequences and levels of meaning, are strong predictors of well-being among adults and older adolescents. However, these elements could be negatively related to well-being when such a relationship first emerges in early adolescence, at least for adolescent boys. Thus, further studies are needed to examine these relationships among younger adolescents and as a function of gender. Although research originating from different approaches to identity development (e.g. identity status and narrative identity) has revealed similar results, both approaches suggest a positive relationship between identity maturity and well-

being. Further studies are required to examine if such relations are the same in different cultural contexts.

### *Study 1 Overview*

Self-defining autobiographical memories serve as the foundation for narrative identity. From a social constructivist perspective, the emergence of autobiographical memory is closely linked with parent-child reminiscing, and the way in which parents talk about emotions with their infant children is associated with early signs of self-understanding. Starting from early adolescence, various facets of self-understanding begin to transform into one's identity, which is ultimately reflected in people's life stories. Middle childhood and early adolescence offers an opportunity to investigate how parents scaffold children's identity development before it fully emerges in mid to late adolescence. With respect to the relationship between narrative identity and well-being, much of the prior research has been conducted with the adult population, which precludes the chances to document the developmental trajectory of these dynamic processes.

In short, Study 1 aims to replicate and extend Habermas and de Silveira's (2008) finding that it is possible for children to narrate coherent life stories in middle childhood and early adolescence, albeit with less narrative complexity than adults. Study 1 also investigates the crucial elements in terms of story structure and content that are presented in these stories. Another aim of Study 1 is to extend past research on the impact of parent-child conversations on children's self-concept into middle childhood and early adolescence. Specifically, does emotional reminiscing facilitate children's narrative identity, as indicated by their abilities to draw meaning from critical life events? A final aim is to examine whether early childhood emotional

reminiscing is related to children's well-being by investigating the correlations between emotion talk from parent-child conversations and children's self-esteem. Therefore, the following hypotheses were proposed for Study 1.

1. It was predicted that some indicators of life story coherence would appear in narratives of children in middle childhood and early adolescence. It was also predicted that there would be age-related increases in the structure and content of children's life stories.

2. It was hypothesized that children's meaning-making skills would increase with age. Given the mixed results to date on gender differences in meaning-making, no specific hypotheses were made regarding gender differences in the current study.

3. It was expected that parent-child emotional reminiscing would be positively correlated with children's meaning-making skills, and that emotional reminiscing would also be positively associated with well-being for children in middle childhood and early adolescence.

4. Given McLean and colleagues' finding (e.g., McLean & Breen, 2009; McLean et al., 2010), it was expected that meaning-making would be negatively, or not significantly, correlated with well-being amongst younger children. To explore this hypothesis, a sample of children aged between 8 and 12 years old were recruited, who were younger than the ones from McLean and colleagues' previous studies.

### Chapter 3

#### Study 1: The Development of Narrative Identity in Middle Childhood and Early Adolescence

##### Method

##### *Participants*

One hundred and twenty four mother-child dyads participated in the present study, with 69 girls and 56 boys. Children were recruited from several local primary and intermediate public schools in Dunedin, New Zealand. Participants' average age across the whole sample was 10.55 years, with a mean age of 10.60 years for girls ( $SD = 1.46$ ) and 10.50 years for boys ( $SD = 1.40$ ). Family demographic information and maternal education background were collected for all participants except one. Of the remaining 123 children, 122 spoke English as their first language at home; one child spoke both English and Spanish as the primary languages of the home. One hundred and six children were of European New Zealand descent, two were of Māori descent, two were of British descent, one was of Asian descent, and 12 were of mixed descent. In terms of maternal education background, 32 mothers reported having post-graduate degrees, 26 mothers with undergraduate degrees, 22 mothers with polytechnic diplomas, 38 mothers with secondary school certificates and four mothers completed their education at the intermediate school level. Family socio-economic status was also recorded and scored on the Elley-Irving Socio-Economic 2001 Index (Elley & Irving, 2003), which rates parental employment on a scale from six (unskilled labour; e.g., shearing shed worker) to one (highly skilled labour requiring university qualifications; e.g., lawyer). The average SES of the sample was 2.5. Written parental and child

consents were obtained before the interview, and each family received a small gift at the end of the interview session.

### *Measures*

#### Language ability

Form B of the Peabody Picture Vocabulary Test (PPVT), Fourth Edition (Dunn & Dunn, 2007) was used to assess the language ability of our participants. The PPVT is an oral assessment of receptive language and has been shown to be highly correlated with language ability and verbal IQ (Smith, Smith, & Dobbs, 1991). Children were shown a set of four pictures and asked to indicate which picture best described the word that the experimenter had just told them. There was no time limit for the PPVT, and the test terminated when there were over eight or more errors in a set of 12 words. Raw data were standardized correcting for children's age in years and months.

#### Self-esteem

The Global Self-Worth scale from Harter's (1985) Self-Perception Profile for Children was used to measure children's global judgment of self competence. The scale had six items, each consisting of four statements, and children were required to choose one statement that best described them. A score between one and four was allocated to each statement, and the highest overall score was 24. The Self-Perception Profile for Children is suitable for children in third through to sixth grades (8 to 11 years old), with moderate to high levels of test-retest reliability, ranging from .78 to .84 across different samples from the United States.



## *Procedure*

### Family conversation

Each mother-child dyad recorded a conversation at home before attending the interview session at the laboratory. During the conversation, they discussed three separate family holidays or special events, one each from the following time periods; up to six months ago, over four years ago, and an event planned for the next year. Family holidays were selected because they typically contain a mixture of positive and negative occurrences to discuss. Events from distant time periods were selected as part of another study (Friedman, Reese, & Dai, 2011). The conversations were then transcribed verbatim, and any information relating to the participants' identity was deleted from the transcripts.

### Laboratory interview

Children and their mothers visited our lab for the one-off interview session, where they were greeted by two interviewers. After signing the consent forms, the parent went to a separate room with one interviewer, while the child stayed in the main laboratory with another interviewer. The child and parent interviews were conducted simultaneously. The whole session took on average of one and a half hours to complete. The child interviews were recorded on a digital voice recorder and later transcribed; only data pertinent to the current study is reported here.

Once the interviewer had established rapport with the child, the Emerging Life Story Interview (ELSI, Reese, Chen, Jack, & Hayne, 2010, adapted from McAdams, 1996, see Appendix A for details of the protocol) procedure was implemented to elicit the child's life story. In the ELSI, children were instructed to tell a story of their life. If

their life was like a story in a book, what would be the chapters? The interview always started with the chapter that the child was currently in. Then she or he could choose how to narrate the rest of the chapters; either by working backwards to the chapter that came before the current one until reaching the earliest chapter, or starting from the earliest chapter, and then moving forwards until reaching the current chapter. Once the child had nominated a chapter, she or he was asked to describe the important events that had happened in that chapter. They were also asked to offer a title for the chapter. There was no minimum requirement on the number of chapters, but the maximum number of chapters was kept at 10. The interviewer wrote down the structure of the life story while the interview was audio-taped, including the name and the content of each chapter. Once the child had finished narrating the chapters, the interviewer recapped the whole life story starting from the earliest chapter, so that the child would have a chance to correct or add new information to the life story.

After the chapter task was completed, children were then asked to nominate two events that changed their lives in some way or changed what they were like as a person. Children were instructed that these events should be important to them and clearly remembered. The events could happen during any time of a child's life except in the current chapter of their lives. After children had come up with an event, they were required to indicate where they would place the event in the life story; this could be either in one of the earlier chapters or in between chapters. Then children were encouraged to recall the event in as much detail as possible. The interviewer responded by nodding or replying with some non-directive prompts, such as '*Uh huh*', '*What else?*' Once the child had no further information to offer, the interviewer asked her (or him) a few specific questions in the following order:

*“When the event happened, where were you? who else was there?” “When the event happened, how old were you?” “How did you feel?” “How did others feel?”*

Finally, children were asked to explain how the event had changed their lives, or why the event was important to them. The same procedure was carried out for the second life changing event the children nominated. At the end of the interview, children filled out the Global Self-Worth Scale from Harter’s (1985) Self Perception Profile and the interviewer tested their language competence using the PPVT.

### ***Coding***

All family conversations and life-changing event interviews were transcribed verbatim. Gender and other identifying information (such as the name of the child or siblings) were removed from the transcripts. The chapter tasks were not transcribed; the associated coding was conducted based on information the interviewer wrote down on the summary sheets during the interviews.

### **Family conversations**

Any statements or questions used to request or provide emotional information were identified as either *emotion terms* or *external evaluations*. In line with past research (e.g., Adams et al., 1995; Bird & Reese, 2006; Fivush, 1993; Welch-Ross, et al., 1999), emotion terms are defined as references to the internal emotional state of the child or another person, including personal feelings (e.g., happy, sad, scared), desires (e.g., want, prefer) and emotional behaviours (e.g., smile, happy, cry). External evaluations are defined as external judgements on people, objects or events (e.g., “*it was fun at the party*”). Emotion terms and evaluations were also coded for whether they were attributed to the child or to others. The amount of emotions and evaluations were counted separately for parents’ and children’s utterances. In addition, the function

of emotional talk was coded as either expressions (“*I smiled when I saw the puppy*”) or explanations (“*I cried because it hurt*”). However, explanations were extremely rare in these conversations, ranging in frequency from none per event for children’s explanations of their negative evaluations to 0.37 per event for children’s explanations of their own positive emotions. The total numbers of emotions and evaluations were computed across the three events.

Two coders independently rated 25% of the total transcripts and achieved an average agreement of 90%. Then they each coded half of the remaining transcripts and any disagreements were resolved by discussion.

### Life story chapters

The theme of each chapter was coded as either *Lifetime Period* or *Event Specific*. Lifetime period chapters contained several events that occurred over time. These events also needed to be connected with each other in order to form an overarching theme. In contrast, event specific chapters contained discrete events that did not converge to an overall theme and, quite often, there was only one event for each chapter. According to the self-memory system (SMS; Conway, 2005; Conway & Pleydell-Pearce, 2000), autobiographical memories are hierarchically structured. Specifically, episodic memories are at the bottom of the hierarchy, and are the basic elements which form the next level of the system: general event knowledge. The various aspects of general event knowledge can be grouped together to represent a person’s *working self* during any given lifetime periods. Ultimately, the *working self* is expressed through the life story, which contains one or more overarching themes and is supported by memories from different lifetime periods. Therefore, life period chapters are considered to be more developmentally advanced than event specific chapters.

We then coded chapter specificity to capture whether each chapter contained one or more specific memories. As mentioned, specific episodic memories are the building blocks of general event knowledge, which subsequently develops into an abstract form of self-knowledge, namely individual's life story. As a result, age-related changes were expected for the structure of life stories, such that younger children would initially organize their chapters based on specific events and older children would be more likely to use general event knowledge to represent life story chapters.

In addition, we included some local indicators to tap into the basic structure of the life story. These included items such as whether children mentioned any first time experiences, whether the life story began with birth, and whether the chapters followed a chronological order. Chapter chronology was coded on a 3-point scale: a score of 0 was given when none of the chapters was organized in a temporal order; a score of 1 was given when some of the chapters were temporally ordered; and the highest score of 2 was given when all chapters in chronological order. First time experiences and beginning the life story with birth were both coded as dichotomies, such that a score of 1 was given for their presence and a score of zero was given for their absence. Two coders coded 25% of the transcripts for reliability estimates. Higher levels of reliability were achieved for the dichotomous variables (agreement over 90%); Cohen's kappa for chapter chronology was .73.

#### Life-changing events

The coding scheme was adapted from previous schemes designed for coding self-defining memories in late adolescence and early adulthood (McLean & Pratt, 2006; McLean & Thorne, 2003). We first coded event type using the following categories: *Relationships*, *Achievement*, *Accident/Injury*, *Leisure*, and *Religious Activity*. These

categories were mutually exclusive such that each event could only be coded as one type. Then we coded whether each event involved conflict and whether the overall valence of the event was classified as positive, negative, or neutral.

Finally, we coded children's meaning-making skills reflected by the degree of meaning they drew from the event. Meaning-making referred to what the narrator understood and learned from previous experiences. Meaning-making was coded on a 4-point scale ranging from *No meaning* to *Gaining insight* depending on the level of self-reflection that was undertaken. *No meaning* (0) referred to narratives in which no self-reflection or change in the person's life was mentioned. *Lesson learned* (1) referred to narratives in which the narrator learned a specific behaviour or action from the event but did not engage in self-reflection. *Vague meaning* (2) was given to narratives in which the narrator specifically stated some internal changes to the self, without explaining in detail how this change had occurred or offering elaborations on how this change would impact his/her life in the future. *Gaining insights* (3) was given to narratives where there was clear evidence of in-depth self-reflection. The narrator also explained why and how the internal change occurred by making causal connections between past experiences and the present self. In addition, this type of meaning could be generalized to form part of the narrator's life philosophy. Two coders coded 31 participants' transcripts for reliability estimates. The intraclass correlation (absolute agreement) was .81 for meaning-making, and Cohen's Kappa for the type of events was .86. The coders also reached 83% of agreement on the presence of conflict. Examples of each level of meaning-making are presented in Table 3.1.

Table 3.1  
Narrative Examples of Meaning-Making

| Score                       | Example  |
|-----------------------------|--|
| 0-point<br>(No meaning)     | <ul style="list-style-type: none"> <li>• <i>Before I got my dog, I used to go on bike rides every Sunday but now I can't because I've got walks with Rascal.</i></li> </ul>  |
| 1-point<br>(Lesson learned) | <ul style="list-style-type: none"> <li>• <i>It taught me never to tell lies, coz especially you'll get caught.</i></li> </ul>  |
| 2- point<br>(Vague)         | <ul style="list-style-type: none"> <li>• <i>It taught me like people change and they are not always what they seem, they can be two sided.</i></li> </ul>  |
| 3- point<br>(Insight)       | <ul style="list-style-type: none"> <li>• <i>I've always wanted to come first and I've always tried my hardest to get there and for once I did it, it made me feel so happy. It kind of made me think that I can do this, I can go further and I can try better and try to do the best that I can, give it 100%, not 99.</i></li> </ul> |

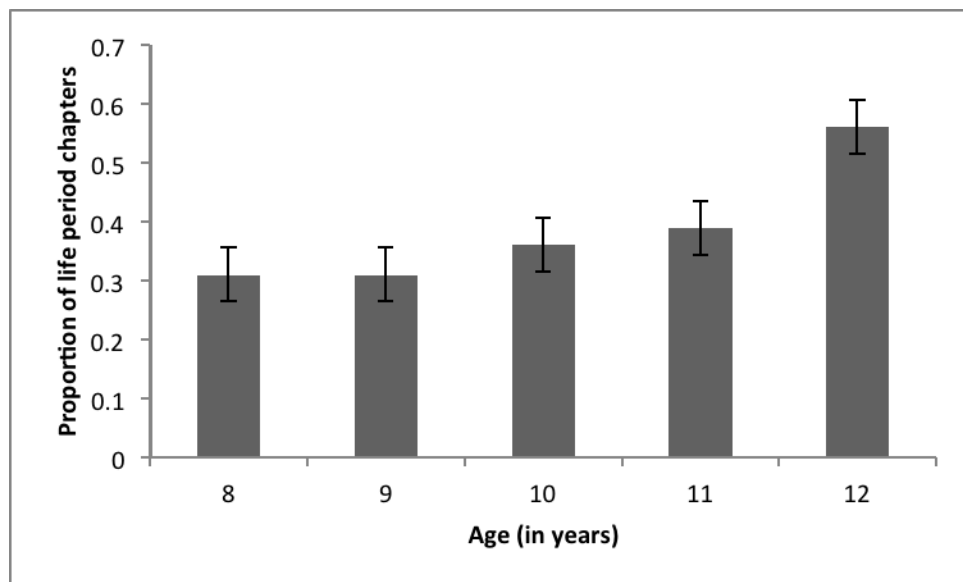
## Results

Results from Study 1 are presented in two parts. Study 1A presents findings pertaining to the Emerging Life Story Interview for the entire sample ( $N = 124$ ). Study 1B addresses the relationship between parent-child emotional talk and children's narrative identity development (i.e., life story structure and meaning-making skills) based on a subsample of 60 randomly selected parent-child dyads, consisting of six boys and six girls from each chronological age group.

### *Preliminary Analyses*

Univariate analysis of variance (ANOVA) showed a marginal main effect of age on the proportion of life period chapters,  $F(4, 119) = 2.10$ ,  $p = .09$ . Fisher's least significance difference test (LSD) showed that children in the 8-, 9-, and 10-year old groups reported significantly smaller proportions of life period chapters than those in

the 12-year old group, whereas there were no significant differences between children in the 11-year old group and any other groups. See Figure 3.1 for the proportions of life period chapters reported by children from five chronological age groups: 8-, 9-, 10-, 11- and 12-years old.



*Figure 3.1.* Proportions of life period chapters across age groups.

Based on the advances in lifetime periods between ages 10 and 12, and because there is evidence suggesting that it is not until adolescence that one is capable of producing a coherent life story (Habermas & Bluck, 2000), children in Study 1 were divided into two age groups. The middle childhood group included children aged between 8 and 10 years old and the early adolescent group included children aged between 11 and 12 years old. This categorical variable (middle childhood vs. early adolescence) was used as the independent variable for age instead of participants' chronological ages.

Children's receptive language skills, as measured by the PPVT, did not differ as a function of age group or gender. However, there was a significant interaction between



age group and gender,  $F(1, 117) = 5.15, p < .05$ , partial  $\eta^2 = .04$ . Children's PPVT scores did not differ between boys ( $M = 108.03, SD = 11.69$ ) and girls ( $M = 111.60, SD = 11.72$ ) in the middle childhood group. In contrast, boys scored slightly higher ( $M = 114.85, SD = 12.81$ ) than did girls ( $M = 107.85, SD = 13.82$ ) in the early adolescent group; however, this difference was only marginally significant,  $t(45) = 1.77, p = .08$ . Importantly, children's PPVT scores did not significantly correlate with any of the chapter variables in either age group. Therefore, PPVT scores were not further considered in the following main analyses.

### ***Study 1A: The Development of Life Stories***

#### Preliminary Analyses

##### *Life stories*

Each participant had separate scores for the numbers of chapters, lifetime period chapters, event specific chapters, and chapters with specific memories. Raw scores were then converted into proportions because they are better indicators for story structure compared to frequencies, (these proportions are shown on Table 3.2). Table 3.3 shows the proportions of participants whose life stories possessed one or more local indicators of chapter structure.

Table 3.2  
*Number and Types of Life Story Chapters in Middle Childhood and Early Adolescence*

|                                    | Middle Childhood<br>( <i>N</i> = 76) |      | Early Adolescence<br>( <i>N</i> = 48) |      |
|------------------------------------|--------------------------------------|------|---------------------------------------|------|
| Variable                           | Mean                                 | SD   | Mean                                  | SD   |
| Total Number of Chapters           | 5.68                                 | 2.33 | 6.00                                  | 2.20 |
| Prop. of LP Chapters <sup>a</sup>  | .33                                  | .34  | .48                                   | .38  |
| Prop. of ES Chapters <sup>b</sup>  | .67                                  | .34  | .52                                   | .38  |
| Prop. of SPE Chapters <sup>c</sup> | .82                                  | .24  | .76                                   | .21  |

*Note.* <sup>a</sup> Proportion of life period chapters.  
<sup>b</sup> Proportion of event specific chapters.  
<sup>c</sup> Proportion of chapters with specific event memories.

Table 3.3  
*Proportions of Local Indicators of Chapter Structure (Percentage within Each Age Group)*

|                   | Middle Childhood | Early Adolescence |
|-------------------|------------------|-------------------|
| Beginnings        |                  |                   |
| 0 - After birth   | 77.6             | 79.2              |
| 1 - At birth      | 22.4             | 20.8              |
| First Experiences |                  |                   |
| 0 - Absent        | 35.5             | 18.8              |
| 1 - Present       | 64.5             | 81.2              |
| Chronology        |                  |                   |
| 0 - None          | 9.2              | 4.2               |
| 1 - Partial       | 65.8             | 60.5              |
| 2 - All           | 25.0             | 35.3              |

#### *Life changing events*

Only the maximum scores for the two life-changing events for each participant were included in the analyses. If both events received the same score, then the first narrated event was selected. The three most common event types were *leisure*, *relationships* and *achievement*, which together represented almost 90% of all events (see Table 3.4 for examples of each event type).

Table 3.4  
*Examples of Life-Changing Events*

| Event Type         | Example   |
|--------------------|---|
| Relationships      | <ul style="list-style-type: none"> <li>• <i>Parents broke up; When the family dog died</i></li> </ul>       |
| Achievement        | <ul style="list-style-type: none"> <li>• <i>First started tap dancing; Mum's graduation</i></li> </ul>      |
| Accident/Injury    | <ul style="list-style-type: none"> <li>• <i>Fell off the garage door; Broke my leg</i></li> </ul>           |
| Leisure            | <ul style="list-style-type: none"> <li>• <i>Fifth birthday party; Family holiday in Auckland</i></li> </ul> |
| Religious Activity | <ul style="list-style-type: none"> <li>• <i>First communion; Confirmation and reconciliation</i></li> </ul> |

Independent-samples t-tests showed no significant differences in meaning-making scores between these three most common event types ( $ps > .05$ ), nor did the scores vary as a function of event valence,  $F(2, 120) = .17, p > .05$ . In addition, only 10 participants selected events involving conflicts, which did not give us enough power to test the hypothesis that events containing conflict are associated with higher levels of meaning. As a result, event type and conflict were not considered further in subsequent analyses. A summary of the distribution of meaning-making scores for different types of events is shown in Table 3.5.

Table 3.5  
*Distribution of Meaning-Making Scores across Event Type*

|            | Relationships | A & I | Achievement | Leisure | RA |
|------------|---------------|-------|-------------|---------|----|
| No meaning | 15            | 0     | 12          | 6       | 1  |
| Lesson     | 3             | 6     | 1           | 3       | 0  |
| Vague      | 22            | 5     | 11          | 20      | 1  |
| Insight    | 5             | 1     | 3           | 6       | 0  |

*Note: A & I – Accident and injury, RA – Religious activity*

### Main Analyses

#### *Life story chapters*

Analyses of variance (ANOVAs) were conducted to test the effects of age and gender on the structure of life story chapters. Lifetime period and event specific chapters were coded with a mutually exclusive scheme, and consequently, these codes yielded the same results although findings were in opposite directions. In the interests of brevity, I will only report the results for lifetime period chapters; it can be assumed that the inverse finding was present for event specific chapters.

The results showed a main effect of age on the proportion of lifetime period (LP) chapters, such that children in the middle childhood group had smaller proportions of LP chapters in their life stories than did those in the early adolescence group,  $F(1,120) = 4.99$ ,  $p = .03$ , partial  $\eta^2 = .04$ . There was also a main effect of gender, with girls reporting higher proportions of lifetime period chapters ( $M = .46$ ,  $SD = .35$ ) than boys ( $M = .30$ ,  $SD = .36$ ),  $F(1,120) = 4.53$ ,  $p = .04$ , partial  $\eta^2 = .04$ . There were no significant age or gender differences in the proportion of chapters with specific

memories, nor were there any interactions between gender and age on the different components of life story chapters.

There were no age-related differences in story beginnings,  $t(122) = .20$ , *ns*; more than 75% of the children started their stories sometime after birth regardless of their ages. The extent to which the chapters were organized chronologically did not differ between the age groups either,  $t(122) = -1.49$ , *ns*. However, the percentage of children who mentioned first time experiences was higher among young adolescents ( $M = .81$ ,  $SD = .39$ ) than for the middle childhood group ( $M = .64$ ,  $SD = .48$ ),  $t(122) = -2.02$ ,  $p < .05$ . No gender differences were found for any of the above life chapter variables.

#### *Life-changing events*

A 2 (age group) x 2 (gender) analysis of variance (ANOVA) was conducted to test developmental and gender differences on meaning-making, with age group and gender being the between-subject factors. No age-related differences were found between children in the middle childhood group ( $M = 1.41$ ,  $SD = 1.03$ ) and those in the early adolescent group ( $M = 1.53$ ,  $SD = 1.04$ ),  $F(1, 117) = .20$ ,  $p > .05$ . However, girls scored significantly higher in meaning-making ( $M = 1.75$ ,  $SD = 1.00$ ) than did boys ( $M = 1.09$ ,  $SD = .98$ ) regardless of age group,  $F(1, 117) = 11.85$ ,  $p = .001$ , partial  $\eta^2 = .09$ . There was no significant interaction between gender and age.

To test whether the structure of the life story was related to the levels of meaning that children drew from life-changing events, ANOVAs were conducted using meaning-making as the dependent variable and various chapter variables as the independent variables. Overall, the levels of meaning did not differ as a function of chapter structure. However, gender interacted with chapter chronology on meaning-

making,  $F(2, 115) = 5.46, p < .05$ , partial  $\eta^2 = .09$ . For girls, their meaning-making scores differed as a function of chapter chronology,  $F(2, 64) = 5.61, p < .05$ , partial  $\eta^2 = .15$ , such that girls who scored higher for chapter chronology were more likely to have higher meaning-making scores than those with lower chapter chronology scores. In contrast, boys' meaning-making scores did not differ as a function of their chapter chronology scores,  $F(2, 51) = .87, ns$ .

#### *Narrative identity and well-being*

Pearson's correlations were conducted to test whether children's developing narrative identity, as measured by the structure of life stories and the levels of meaning drawn from life-changing events, was related to their well-being. Children's self-esteem was not significantly correlated with any of the chapter narratives, nor was it correlated with children's meaning-making skills in either age group or in the overall sample ( $r_s = -.13$  to  $.23, ns$ ).

#### Summary

In summary, age-related increases were found for some indicators of life story structure, such as the proportion of life period chapters and the inclusion of first time experiences. However, elements indicating life story coherence (i.e., story begins from birth and follows a chronological order) rarely featured in children's life stories for either the middle childhood or early adolescent group. With regard to life-changing events, the complexity of narrative meaning-making did not increase with age across in the current sample of 8- to 12-year old children. In contrast, gender differences were obtained for the degree of meaning-making, with girls scoring higher than boys regardless of age. Girls' but not boys' meaning-making was correlated with their chapter coherence. For both age groups and genders, however, neither the structure of

children's life stories nor their meaning-making skills were significantly correlated with their well-being in terms of their self-esteem.

### ***Study 1B: Parent-Child Joint Reminiscing and the Development of Narrative Identity***

#### **Preliminary Analyses**

Logarithmic transformations were applied to all conversational variables because they were all positively skewed, and the transformed variables were used in the following correlational analyses. Untransformed data were used for analyses of variance (ANOVAs) as these are typically more robust to skewness (Tabachnick & Fidell, 2000).

Pearson's correlations were conducted between parental conversational variables and children's conversational variables. As shown in Table 3.6, parental references to children's positive and negative emotions were weakly to moderately correlated with children's references to their own emotions.

Table 3.6

*Person's Correlations between Children's and Parents' Conversational Variables*

|                            | <i>Children's utterances</i> |           |           |           |
|----------------------------|------------------------------|-----------|-----------|-----------|
|                            | <i>1.</i>                    | <i>2.</i> | <i>3.</i> | <i>4.</i> |
| <i>Parents' utterances</i> |                              |           |           |           |
| 1. Positive emotions       | .44**                        | .29*      | .28*      | .01       |
| 2. Negative emotions       | .04                          | .33*      | -.02      | -.08      |
| 3. Positive evaluations    | .38**                        | .20       | .48**     | .09       |
| 4. Negative evaluations    | .08                          | -.01      | .11       | -.09      |

\*\*  $p < .01$  \*  $p < .05$



Pearson's correlations were also conducted between children's receptive language ability (PPVT), length of parents' and children's narratives and our main variables of interests for the entire subsample ( $N = 60$ ), as well as separately for each age group (middle childhood vs. early adolescence). As mentioned earlier, for the entire sample, PPVT was not correlated with any of the narrative variables, nor was it correlated with meaning-making or self-esteem ( $r_s = 0$  to  $.24$ ,  $ns$ ). In addition, neither the length of parents' nor children's narratives (measured by number of words in the narratives), were correlated with meaning-making or children's self-esteem ( $r_s = -.04$  to  $.06$ ,  $ns$ ). However, both parents' and children's conversation lengths were significantly correlated with the frequencies of the narrative variables ( $r_s = .26$  to  $.58$ ,  $p_s < .05$ ), but not with the positive emotion/evaluation ratios ( $r_s = -.03$  to  $.11$ ,  $ns$ ). Therefore, speakers' conversational length was partialled out when correlating the frequencies of variables (for both emotions and evaluations) with self-esteem and with meaning-making. Similar results were obtained for both age groups, although for the middle childhood group the PPVT was significantly correlated with both parents' and children's references to children's positive emotions ( $r = .35$ ,  $p < .05$ ;  $r = .38$ ,  $p < .05$ ). Therefore, PPVT scores were partialled out when correlating mothers' and children's references to children's positive emotions with meaning-making and with self-esteem scores.

### Descriptive Statistics

In accordance with previous research, frequencies rather than proportions of emotion narrative variables were recorded (e.g., Bauer, Stark, Lukowski, Rademacher, Abbema, & Ackil, 2005; Bird & Reese, 2006; Bohanek & Fivush, 2010). It has been argued that it is the sheer amount of emotion talk rather than the proportion of emotion

talk that is associated with children's use of emotional state language, their self-concept, and well-being. In total, there were eight narrative variables for parents and children included in the main analyses: the frequencies of each speaker's references to the child's positive and negative emotions, and external positive and negative evaluations of the child. See Table 3.7 for descriptive statistics for all narrative variables that were attributed to the child in utterances from both parent and child.

Table 3.7  
*Descriptive Statistics of Narrative Variables Attributed to the Child*

| Narrative Variable           | <i>M (SD)</i> |        |       |        |
|------------------------------|---------------|--------|-------|--------|
|                              | Boys          |        | Girls |        |
| <i>Children's Utterances</i> |               |        |       |        |
| Positive emotions            | 2.57          | (4.21) | 3.53  | (3.93) |
| Negative emotions            | .87           | (1.20) | 1.70  | (2.05) |
| Positive evaluations         | .40           | (.86)  | .67   | (1.15) |
| Negative evaluations         | .13           | (.43)  | .13   | (.35)  |
| <i>Parents' Utterances</i>   |               |        |       |        |
| Positive emotions            | 2.73          | (3.53) | 3.63  | (3.36) |
| Negative emotions            | .57           | (1.14) | .93   | (1.47) |
| Positive evaluations         | 1.40          | (2.37) | 1.17  | (1.95) |
| Negative evaluations         | .07           | (.37)  | .10   | (.31)  |

In addition, positive emotion ratios (Bird & Reese, 2006; Fivush & Vasudeva, 2002) were also calculated for references to children's positive emotions and evaluations by dividing the number of positive emotion references (or evaluations) by the total number of emotion references (or evaluations), separately for parents and

children's utterances. Past research has found that children who contributed a greater proportion of positive emotions during the parent-child conversation at 65 months had a more consistent self-concept (Bird & Reese, 2006). Therefore, a ratio of zero indicates only negative emotions (or evaluations) were discussed, a ratio of .5 indicates an equal number of positive and negative emotions (or evaluations) were discussed, and a ratio of one indicates only positive emotions (or evaluations) were discussed. However, these narrative ratios were not calculated for some participants because the associated narrative variables were absent in the conversations (e.g. some children did not refer to their own emotions during the conversation). See Table 3.8 for the descriptive statistics of these positive ratios.

Table 3.8

*Means and Standard Deviations for Positive Narrative Ratios Attributed to the Child*

| Narrative Variable                    | <i>M (SD)</i> |       |       |       |
|---------------------------------------|---------------|-------|-------|-------|
|                                       | Boys          |       | Girls |       |
| <i>Children's Utterances</i>          |               |       |       |       |
| Positive emotions ( <i>N</i> = 48)    | .67           | (.37) | .66   | (.33) |
| Positive evaluations ( <i>N</i> = 21) | .71           | (.45) | .77   | (.39) |
| <i>Parents' Utterances</i>            |               |       |       |       |
| Positive emotions ( <i>N</i> = 48)    | .81           | (.32) | .81   | (.28) |
| Positive evaluations ( <i>N</i> = 30) | .99           | (.05) | .88   | (.29) |

The average scores of children's self-esteem and receptive language skills (i.e., PPVT) are presented in Table 3.9, and similar to the entire sample, ANOVAs showed no age- or gender-related differences in either variable.

Table 3.9  
*Means and Standard Deviations of Self-Esteem and the PPVT Scores*

|                   |       | Self-Esteem |           | PPVT        |           |
|-------------------|-------|-------------|-----------|-------------|-----------|
|                   |       | <i>Mean</i> | <i>SD</i> | <i>Mean</i> | <i>SD</i> |
| 8 – 10 years old  | Boys  | 20.3        | 2.6       | 107.7       | 11.5      |
| ( <i>N</i> = 36)  | Girls | 19.8        | 2.5       | 113.4       | 11.0      |
| 11 – 12 years old | Boys  | 20.3        | 2.1       | 115.9       | 14.2      |
| ( <i>N</i> = 24)  | Girls | 19.9        | 3.7       | 103.6       | 12.1      |

### Main Analyses

Analyses of variance (ANOVAs) were conducted for narrative variables, self-esteem, and meaning-making as a function of gender and age. There were no main effects of age group for any of the narrative variables ( $ps > .05$ ). A main effect of gender was found for the frequency of the children's references to their negative emotions,  $F(1, 56) = 4.07$ ,  $p < .05$  partial  $\eta^2 = .07$ . Girls reported more of their own negative emotions than did boys. No significant gender differences were found for the remaining narrative variables. In terms of meaning-making, no significant differences were found between age groups, consistent with the findings based on the entire sample. However, girls ( $M = 1.69$ ,  $SD = 1.00$ ) scored significantly higher than did boys ( $M = .93$ ,  $SD = 1.02$ ) on meaning-making,  $F(1, 53) = 6.79$ ,  $p < .05$ , partial  $\eta^2 = .11$ , also consistent with the larger sample. No interactions between age group and gender were found for any of the measured variables.

### *Emotional reminiscing and well-being*

Partial correlations were conducted between emotion narrative variables and children's well-being, controlling for speakers' word count. Separate correlation coefficients were conducted for the two age groups in order to capture any age-related changes in the associations between these variables. Overall, children's self-esteem was not significantly correlated with any of the emotion narrative variables ( $r_s = -.03$  to  $.21$ ,  $ns$ ). However, a significant negative correlation was found between parents' references to children's negative emotions and self-esteem for children in the middle childhood group ( $pr(31) = -.47$ ,  $p = .006$ ); children with higher self-esteem had parents who referred less often to children's negative emotions. In contrast, for the early adolescent group, self-esteem was positively correlated with parental references to children's negative emotions ( $pr(20) = .42$ ,  $p = .05$ ); children with higher self-esteem had parents who referred more often to children's negative emotions. The opposite direction of these correlations was, however, largely due to the fact that, regardless of age group, parental references to children's negative emotions were not correlated with self-esteem for boys, ( $pr(14) = -.28$  and  $pr(8) = .18$ ,  $ps > .05$ ). For girls, however, self-esteem was negatively correlated with parental references to children's negative emotions in the middle childhood group ( $pr(14) = -.58$ ,  $p < .05$ ) and positively correlated with parental references to negative emotions in the early adolescent group ( $pr(9) = .61$ ,  $p = .05$ ). In addition, a Fisher's z-test confirmed that the negative correlation found for girls in the middle childhood group was significantly different from the positive correlation found for girls in the early adolescent group,  $z = -2.7$ ,  $p < .05$ . Although these correlations were significantly different from zero and from each other, such findings should be treated as exploratory due to the small number of children in each group.

In addition, self-esteem was significantly correlated with the proportion of children's positive emotions referred to by the parent ( $r(31) = .42, p = .02$ ) for the middle childhood group, but no significant correlation was found for the early adolescent group ( $r_s = -.10$  to  $-.45, ns$ ). Furthermore, for girls in the middle childhood group, self-esteem was significantly correlated with the proportion of their positive emotions referred to by their parents ( $r(18) = .66, p = .003$ ) and also with the proportion of self-referenced positive emotions ( $r(15) = .61, p = .015$ ). Therefore, girls in middle childhood who referred to, and were referred to with, a greater proportion of positive emotions experienced higher self-esteem. In contrast, no significant correlations were found for boys in the middle childhood group, nor were there any significant correlations between positive emotion talk and self-esteem in the young adolescent group, regardless of gender.

#### *Emotional reminiscing and meaning-making*

For the overall sample, meaning-making was significantly correlated with parental expressions of children's positive evaluations ( $pr(54) = .35, p < .05$ ). In addition, meaning-making was significantly correlated with the proportion of positive emotions referring to the child in the entire conversation ( $r(60) = .34, p = .008$ ), and also with the proportion of positive evaluations of the child in the entire conversation ( $r(60) = .37, p = .004$ ). Thus, children demonstrated higher levels of meaning-making if their parents referred to them with a greater number of positive emotions and evaluations during the conversation.

Across the age groups, meaning-making was also significantly correlated with children's positive evaluations of themselves ( $pr(54) = .34, p < .05$ ) and with parents' positive evaluations of their children ( $pr(54) = .35, p < .05$ ). Therefore, the more

parents evaluated their children's positive traits or the more children talked about their positive traits, the higher children scored in the meaning-making task.

In the middle childhood age group, the level of meaning-making was significantly correlated with children's positive evaluations for themselves, when controlling for word count ( $pr(31) = .32, p < .05$ ), and approached significance with children's references to their own positive emotions, when controlling for both word count and PPVT ( $pr(30) = .31, p = .09$ ). In addition, the significant correlations between narrative variables and meaning-making were only found for boys but not for girls in this age group. For boys, meaning-making was significantly correlated with boys' positive evaluations of themselves ( $pr(14) = .69, p < .05$ ), and negatively correlated with boys' references to negative emotions ( $pr(14) = -.58, p < .05$ ). A Fisher's z-test showed that these correlations were significantly different from each other,  $z = 3.54, p < .001$ . In contrast, no significant correlations were found between any of the parent-child conversation variables and meaning-making for the early adolescent group, regardless of gender.

## Discussion

The current study took a narrative approach to examine the emergence of identity and the possible developmental precursors for the construction of a narrative identity in middle childhood and early adolescence. Specifically, Study 1A investigated the construction of a narrative identity by examining the developmental trend in the structure and content of life story narratives, as well as children's ability to draw meaning from life-changing events, evidenced in their meaning-making skills. Study 1B examined the relationship between parent-child joint reminiscing and children's meaning-making skills, and how this connects to children's well-being. With age,

children got better at organizing their life stories in a canonical way, but their meaning-making skills remained stable, possibly indicating that they have not yet internalized a life story as part of their narrative identity. On the other hand, girls reported higher levels of meaning than did boys across the age groups, suggesting that the rudimentary signs of a narrative identity may emerge earlier for girls than for boys. The emotional content of parent-child joint reminiscing was significantly correlated with both meaning-making and children's self-esteem, although different patterns emerged depending on children's age and gender. The present study thus adds to the growing field of narrative identity research, especially with regard to the mechanism underlying when and how life stories become an integral part of one's identity.

### ***The Development of Narrative Identity***

#### **Life story chapters**

In Study 1A, the structure of a life story was coded based on the following indicators: the number of chapters, the number of chapters with specific memories and the proportion of life period chapters. Among these factors, the only age-related increase was found for the proportion of life period chapters. Specifically, children in the early adolescent group (11 to 12 years old) were more likely to organize life stories using chapters that covered extended periods of their lives than were those in the middle childhood group (8 to 10 years old). According to the self-memory system (Conway & Pleydell-Pearce, 2000), using life period chapters to organize a person's life indicates advanced cognitive skills and mature memory representations, as opposed to the use of event specific chapters. A life period chapter requires the integration of different episodic memories to achieve an overarching theme; in this case, all these memories represent a specific aspect of the working self during a given period of one's



life. Dividing one's life into different life periods also represents one's knowledge about the culture's concept of biography; the associated age-related increase found in the current study is consistent with Habermas' (2007) finding that biographical knowledge rapidly increases between the ages of 8 and 12.

Bohn and Berntsen (2008) found that Danish fifth-sixth graders (average age of 12 years old) were more likely to begin the life story at birth, with details about birth date and place name, compared to third graders (average age of 9 years old). They also found that older children's life stories were more likely to follow a chronological order than that of younger children. No such age-related increases were found in the present sample. In fact, almost three quarters of children began the life story sometime after birth, regardless of age. It is likely that differences in task instructions caused this discrepancy. In Bohn and Berntsen (2008), children were specifically instructed to think about important events since they were born to be included in their life stories, whereas in the current study no specific instructions were given as to when the life story should begin. In addition, the life-story chapter task required children to begin the narration in the present chapter and many of them narrated backward to the earliest chapter. Given that only from 8 years of age do children begin to organize temporally distant events in an accurate chronological order (Friedman, 1992), having to work backward may have added extra cognitive demands on their ability to tell a life story: a skill that is yet to be developed and fine-tuned.

However, in the current study, children in the early adolescent group included more references to first time experiences than did children in the middle childhood group. This indicates that it is in early adolescence that children begin to realize the importance of first time experiences as milestones in life, and this in turn suggests that

children begin to develop knowledge about cultural life scripts in early adolescence. Cultural life scripts consist of transitional events in one's life, which are often biased toward positive events and are associated with the reminiscence bump: an important memory phenomenon associated with the development of identity (Berntsen & Rubin, 2004; Rubin, et al., 1986; Thomsen & Berntsen, 2008). Although not all first-time experiences reported by children in the current study belonged to the conventional cultural life scripts, they still had significance in the child's life and consequently contributed to the construction of a coherent life story.

### Narrative meaning-making

Contrary to the prediction that meaning-making scores would increase with age, no such increases were found in the current study. Although past research has shown age-related increases in the degree of meaning-making using the same coding scheme (e.g., McLean & Breen, 2009; McLean et al., 2010), these findings were with participants who were older than the ones in the current study. Meaning-making is believed to capture a degree of causal coherence in the life narrative, as indicated by the use of self-reflection as a means of explaining how the self is influenced previous events. Indeed, the lack of age-related increase in this skill between ages 8 to 12 is consistent with the argument that the cognitive ability to establish causal coherence within a life story does not emerge until adolescence (Habermas & Bluck, 2000). Habermas and de Silveira (2008), for example, found no age-related increases in the prevalence of lessons learned and life maxims from 8 to 20 years. Life maxims are similar to McLean and Pratt's (2006) definition of vague meaning in the scale adopted here. Taken together, I argue that although the ability to construct life stories with canonical narrative devices emerges in early adolescence, children in this age range still

find it difficult to integrate the past into their current self-understanding in order to produce causally coherent narratives of their lives.

Moreover, the types of events children considered as life-changing could also hinder the sophistication of meaning they drew from these events. Past research has shown that higher levels of meaning were more likely to be drawn from events involving tension and conflict (Thorne et al., 2004), whereas in the current study, children rarely mentioned conflict. Further, evidence suggests that conflict was more likely to appear in relationships and mortality events, as negative events create problems that need to be solved, and one way to achieve resolution is through self-reflection indicated by meaning-making scores (Thorne et al., 2004). In the current study, leisure, relationships, and achievement were featured as the major theme for almost 90% of the life-changing events. Given that most leisure and achievement events are more likely to be positive, these events pose fewer demands on meaning-making. Together with the low frequency of conflict, the type of events narrated may have further contributed to the finding that meaning-making did not increase with age.

Despite not detecting any age-related increases in the degree of meaning-making, gender differences did appear, such that girls reported higher levels of meaning than did boys, regardless of age. This finding is consistent with gender differences found in the content of autobiographical memories, revealing gender-specific narrative processes. It has been shown that preschool girls tend to focus on and recall more of the emotional and evaluative aspects of events than do boys (Haden et al., 1997). Female adolescents also tend to include more cognitive processing words in their personal narratives than do male adolescents, suggesting self reflection is processed more in-depth by females than by males (Bohanek & Fivush, 2010). Emotional and evaluative

information strengthens the link between memory and the self by providing a subjective perspective to individuals' mental representations of the past. Emotion references also help people to better understand why certain events are important in their lives and subsequently drive them to actively seek the meanings behind these life events (Fivush, 2001).

According to McAdams' (1996) life story theory of identity, narratives based on the entire lifespan, as well as critical life events (i.e. low point, turning point, and high point events), all contribute to the construction of a narrative identity. In the current study, there were no links between most of the indicators of life story structure and meaning, apart from chapter chronology scores. In fact, gender moderated the relationship between chapter chronology and meaning-making, such that girls who had higher chapter chronology scores also had higher meaning-making scores, whereas meaning-making was not related to chapter chronology for boys. Although it has been argued that the ability to produce a coherent life story and the ability to produce a coherent single event narrative may take different developmental pathways in early to mid adolescence (Bohn & Berntsen, 2008), this relationship may still emerge during adulthood; a critical time when people start to integrate the sense of self into coherent life narratives. Further studies with older adolescents are required to clarify the relationship between life story coherence and critical life event coherence.

### ***Narrative Identity and Well-Being***

Although it has been established that a mature narrative identity, evidenced in the degree of life story coherence, relates to better well-being for adults (Baerger & McAdams, 1999), conflicting results have been reported in studies conducted with adolescents. On one hand, McLean and Breen (2009) found no link between meaning-

making and self-esteem in a sample of middle to late adolescents. On the other hand, McLean et al. (2010) found that age moderated the relationship between meaning-making and well-being in a group of adolescent boys. Specifically, they found that higher meaning-making predicted lower self-esteem among early adolescents, but this negative association disappeared by late adolescence. In the current study, there were no significant correlations between narrative variables and children's perception of global self-worth. This absence is not surprising given that it is not until late adolescence that people start to tell coherent life stories to reflect their identity (Habermas & Bluck, 2000). Taken together, I argue that it is only possible to connect narrative identity to well-being when a person understands how to create a coherent, meaningful account of his/her life by establishing temporal, causal, thematic and cultural coherence in the narrative.

### ***Parent-Child Joint Reminiscing, Well-Being, and Meaning-Making***

#### **Emotional reminiscing and well-being**

In the current study, parental references of children's negative emotions were significantly correlated with children's self-esteem; however, the nature of this relationship differed as a function of children's gender and age. In the middle childhood group, girls reported higher levels of self-esteem if their parents referred to fewer negative emotions to them. In contrast, parental references to children's negative emotions were related to higher levels of self-esteem for early adolescent girls. In addition, parental references to children's emotions and evaluations did not relate to boys' self-esteem for either age group. Further, self-esteem was positively correlated with the proportion of parental references to children's positive emotions for girls in the

middle childhood group, but not for boys in the same age group. Emotional reminiscing did not correlate with well-being for children in the early adolescence group either.

The positive link found between the overall positive tone of the conversation (i.e. fewer negative emotion words or higher proportion of positive emotions) and children's self-esteem is consistent with past research, showing that when discussing past events, parents' acknowledgement of positive aspects of the events predicted higher self-esteem in 5- to 6-year old children (Reese, et al., 2007). This finding also extends the relationship between emotional reminiscing and children's well-being into middle childhood and early adolescence, at least for girls. Parents create a positive perception of the past by focusing on the positive emotions their daughters experienced, which in turn may help girls to develop a positive view of their lives and consequently to feel optimistic about themselves. The finding that adolescent girls reported higher levels of self-esteem if they were referred to with a higher number of negative emotions could be counterintuitive at first glance. Given the correlational nature of the current study, it could be due to that fact that parents whose daughters have higher levels of self-esteem may feel more comfortable discussing the negative emotions experienced by their adolescents, knowing that the children would be able to understand and perhaps resolve the negative feelings. In future research, longitudinal studies from middle childhood to early adolescence may help clarify the timing and direction of these effects.

Contrary to previous research, which found a link between emotional reminiscing and self-esteem among preschool boys (e.g. Reese et al., 2007), the current study did not reveal any significant correlations between the emotional content of parent-child conversations and self-esteem for boys aged between 8 and 12. One

possible explanation is that gender is a prominent feature of child's self-concept in middle childhood, which promotes gender-specific behaviours (Maccoby, 1988). It could be that gender has been foregrounded in self-development and thus gender differences in socializing processes and narrative patterns are likely to appear in this age range (Fivush & Buckner, 2003). Given that disclosing emotions appears to be a socialization process strongly associated with females, boys in the current study may be well aware of this notion and thus attenuate the impact of emotional reminiscing in their perception of self-worth. In sum, the current study suggests that gender and age are both important moderators of the emotion talk to well-being connection.

#### Emotional reminiscing and meaning-making

In order to draw meaning from life experiences, individuals need to understand the influences of the personal past on the current self. Meaning-making offers a way to establish causal coherence in life story narratives, which ultimately represent a person's identity. As an indicator of developing narrative coherence, significant correlations were found between children's meaning-making skills and joint emotional reminiscing. Specifically, children scored higher for meaning-making if they were referred to with a higher number of positive emotions and evaluations. This finding extends into middle childhood and adolescence past research showing that maternal use of internal state language uniquely predicted preschoolers' self-knowledge and self-concept consistency (e.g. Bird & Reese, 2006; Welch-Ross et al., 1999).

The finding that gender and age are linked to different patterns in the relationship between emotional reminiscing and meaning-making is worth mentioning. Meaning-making was related to children's references to their own emotions and evaluations for the middle childhood group, but not for the early adolescent group.

Specifically, it was only for boys in the middle childhood group that meaning-making was positively correlated with their positive evaluations of the self and negatively correlated with their references to negative emotions. Therefore, at least in middle childhood, it is children's own use of emotions and evaluations, but not parental (or at least maternal) scaffolding of how to accurately disclose emotions and evaluations that is linked to meaning-making skills. Furthermore, discussing the emotional and evaluative aspects of the past may facilitate boys' meaning-making skills than that of girls, as girls in the current study already had more advanced meaning-making skills in comparison to boys. This is consistent with the claim that emotional reminiscing contributes to the development of subjective perspectives of the past, which are integrated into one's sense of self (Fivush, 2001).

### ***Limitations and Future Directions***

As this was a cross-sectional study based on correlational analyses, the relationship between emotional reminiscing and children's meaning-making skills could be, and most likely is, bidirectional. In other words, it is entirely possible that children with advanced meaning-making skills also provide more emotions and evaluations in joint discussions with their parent about past events. Meanwhile, it has been suggested that explaining and resolving negative emotions of negative experiences is particularly important for children's well-being (Reese et al., 2007). However, due to the main topic chosen for parent-child conversations (i.e., family holidays), there may have been a limited chance to discuss the negative aspects of a child's past. Therefore, longitudinal experimental studies in which previous experiences associated with a specific valence of emotion (i.e. positive vs. negative) are discussed should be conducted to examine whether the construction of a narrative identity is causally linked



to emotional reminiscing. If so, it is important to know whether any such observed relationships differ according to the type and valence of events that are being discussed.

A second limitation is that most of the conversations in the current study occurred between mothers and children, which precludes an examination of the link between paternal reminiscing style and children's developing sense of self. This extension is crucial given that emotional reminiscing between father-child dyads has been linked to lower well-being for early adolescent boys (Bohanek & Fivush, 2010). In addition, past event conversations in the context of the entire family may provide even richer information about children's past, which provides the basis for identity development. Furthermore, research has shown that mothers differ from fathers in terms of their reminiscing styles (Haden et al., 1997). Parents also differ from each other in terms of the types of conversation they have with children and their relation to children's behavioural and emotional adjustments (Bohanek, Fivush, Zaman, Lepore, Merchant, & Duke, 2009). Specifically, mothers' contributions in conversations with the entire family (i.e., family dinner-time conversations) are stronger predictors of children's behavioural adjustments compared to fathers, whereas talking to fathers about everyday events is positively associated with children's well-being. Therefore, future studies should investigate the link between joint reminiscing and children's identity development beyond mother-child conversations by including conversations between fathers and children and conversations shared between multiple family members.

A third limitation is that children's self-esteem was measured after the Emerging Life Story Interview (ELSI). Although the relationship between narrative processing and well-being is likely to be bi-directional, it is possible that telling the life

story may have either increased or decreased children's self-esteem. Even though the primary focus of Studies 1A and 1B was to investigate the developmental trajectory of life story narratives, it would be a good idea for future studies to counterbalance the order between telling the life story and measuring well-being to reduce this potential confound.

Although the present results suggest that narrative identity does not predict well-being in early adolescence, they do not mean that the coherence of life story narratives is not crucial for adolescents' well-being. Further studies, conducted with older adolescents, are called for to examine when such a relationship emerges in the lifespan. Furthermore, as most of the families were of European background, the current study does not allow direct comparisons in the content and developmental patterns of life story narratives across cultures. Since culture plays an important role in people's cognitive processes and self-concept (Markus & Kitayama, 1991), it is crucial to conduct cross-cultural studies to find out whether culture moderates the content of life stories and its connection to well-being. Lastly, future studies should include additional measures of narrative coherence (i.e. cultural and thematic coherence) to capture the developmental trend of narrative identity more broadly.

### ***Conclusions***

Starting from early adolescence, children begin to organize life stories with canonical narrative structures, such as the use of life period chapters and organizing life chapters into a chronological order. The ability to draw meaning from life events is still developing at this stage; however, girls are more advanced in this skill than are boys. Emotional reminiscing with mothers is correlated with girls' self-esteem, but not the self-esteem of boys; emotional reminiscing with mothers also correlates with children's

meaning-making skills, especially for boys in middle childhood. Given that the current study is cross-sectional and based on an ethnically homogeneous sample, longitudinal investigations based on different cultural backgrounds are required to better understand the association between culture, life story narratives, and self-perception.

## **Chapter 4**

### **Culture, Autobiographical Memory, and the Construction of Self**

Autobiographical memories are constructed within a sociocultural context (Nelson & Fivush, 2004). Social interactions, especially the way in which parents discuss past events with children, have a unique impact on how children establish their own mental representations of the past. Parent-guided conversations also influence the way in which children organize these representations into coherent narratives, which are fundamental for one's sense of self (Conway, 2005; Fivush & Fromhoff, 1988; Reese & Fivush, 1993). Despite a convincing number of empirical studies pointing to the close link between autobiographical memory and self, investigations embedded within a cross-cultural context are still called for, given that most of the existing literature is based on people from Western cultures, such as Northern America and Europe. In this chapter, I first review research on cross-cultural differences in the content and function of autobiographical memory, with a particular focus on differences in maternal reminiscing style and its relation to children's recollection about past events and their sense of self. I then elaborate on the associations between culture, autobiographical memory and the development of self. Finally, I explain the theoretical framework of and introduce the hypotheses for Study 2, which investigates cross-cultural variation in the construction of life story narratives from early to late adolescence. Study 2 also addresses the relation between narrative identity and psychological well-being, and whether this association differs as a function of culture.

## ***Culture and Autobiographical Memory***

### **Cultural variation in the onset of autobiographical memory**

As already reviewed, most people do not recall personal events that happened within the boundary of childhood amnesia. The age of earliest memory that people can recall is, on average, 3.5 years old (Pillemer & White, 1989). However, this research has been conducted mainly on culturally homogeneous samples, such as people of European American descent. There is increasing evidence from cross-cultural studies suggesting cultural variation in the offset of childhood amnesia or, alternatively, the onset of autobiographical memory.

Mullen (1994) investigated the recollection of first memories among college students in the United States and found that European Americans reported earlier first memories than did Asians. However, the Asian sample in this study consisted of people from several ethnic backgrounds who also grew up in the United States. This makes it difficult to argue that a particular culture was the driving force behind the differences in the age of earliest memories, given that the students were under the influence of both Eastern and Western cultures. In addition, all Asian participants were bilingual and did not have English as a first language. Past research has shown that bilingual people recalled more memories if the language they used during retrieval was congruent with the language that they used to encode them (Marian & Neisser, 2000). This congruency effect also extends to the date of earliest memory. It has been shown that people who were fluent in both Spanish and English recalled earlier first memories if they recalled them in their native language (i.e., Spanish), compared to recalling in English (Otoya, 1987).

To rule out the possibility that Asian Americans recalled later first memories due to language difficulties or a mismatch between the languages used for encoding and retrieval, Mullen further compared the European American sample with a group of Korean college students. Again, participants filled out identical questionnaires as those used for the European American sample, but in their native language. The average age of earliest memories reported by the Korean sample ( $M = 55.5$  months) was significantly later than that of the European American sample ( $M = 38.8$  months); it was also later than the average age of earliest memories reported by the Asian American sample ( $M = 43.6$  months).

MacDonald, Uesiliana, and Hayne (2000) extended Mullen's (1994) findings in populations beyond the United States. In this study, university students from three cultural backgrounds (New Zealand European, New Zealand Māori and New Zealand Asian) described and dated their earliest memories. New Zealand Māori adults reported the earliest first memories, followed by New Zealand Europeans; Asians reported the latest first memories. In a second study, MacDonald et al. recruited only Chinese-English bilinguals and the majority of these participants wrote about their first memories in their native language (i.e., Chinese). Results from the Chinese sample were almost identical to that of the first study in which bilingual students recalled earliest memories in English; a finding which ruled out language difficulties as one of the factors contributing to cross-cultural differences in the age of earliest memories.

In MacDonald et al.'s sample, cultural differences in the age of earliest memories were largely due to Asian females reporting the latest earliest memories, with no significant differences between Asian males and the rest of the sample. This contradicts Mullen's (1994) finding that females had slightly earlier memories than did

males, suggesting that subtle differences still exist even between cultures that share common values and practices, such as a collectivist orientation. MacDonald et al. also found that there were no cultural differences in the amount of information that people recalled for their earliest memories, nor were there any cultural differences in the emotional content of their recollections. However, females recalled more information than did males, which is in keeping with gender differences regarding the content of parent-child conversations – a crucial medium in which people learn to construct and represent memories in narrative forms. Together with Mullen (1994), MacDonald et al. argued that the differences in how a culture values personal remembering may contribute to the cultural variation in people's memory construction, and also that the way adults discuss past events with children could be an important platform to transmit these cultural values to the younger generation.

#### The culturally specific belief system and its relation to cognitive processing

Different social norms direct human behaviour. These norms also define socially appropriate practices within a particular cultural context. It is generally agreed that different belief systems exist in different cultures and these consequently lead to differences in people's cognitive processing, including the way people view themselves in relation to others. For instance, individualistic cultures encourage individuals to pursue their personal goals over and above the needs of others. In contrast, collective cultures often emphasize social hierarchy, and people from these countries are often more driven to achieve collective rather than individual goals in order to maintain social harmony (Triandis, 1989). Further, Markus and Kitayama (1991) argued that such cultural differences also influence the content of people's self-construal, which is believed to be the driving force behind the differences found in people's cognitive,

emotional and motivational processes. Specifically, people from individualistic (e.g. Western) cultures tend to have an independent self-construal, which directs them to establish the self as unique and different from others. In contrast, people from collectivistic (e.g. Eastern) cultures are more likely to exhibit an interdependent self-construal, which emphasizes the importance of being connected with the surrounding social context and behaving in a similar manner to others.

The culturally specific belief system also contributes to the differences found in people's recollections of personal past. Research has shown that various socialization processes defined by cultural norms predict different outcomes for people's autobiographical memory development. For example, Mullen and Yi (1995) recorded naturally occurring conversations between European American and Korean mother-child dyads to examine stylistic and content differences in their daily conversations. They found that conversations about the past occurred almost three times as often among European American mother-child dyads than Korean dyads, and that European American children were more likely to be the focal characters during the conversations in comparison to Korean children. In terms of conversation content, European American mothers were more likely to refer to thoughts and feelings of both their children and of others. This type of content helps children to distinguish their own thoughts from the thoughts of others, therefore facilitating the development of a subjective perspective (e.g., Taumoepeau & Ruffman, 2008). In contrast, Korean mothers were more likely to talk to their children about social norms and establish guidelines for what was expected by society with regard to children's proper behaviour. Such information aims to enhance social harmony by ensuring that children are behaving appropriately and are not deviating too much from social norms.



Given the cultural differences in the content of parent-child conversations, it has been suggested that the socialization function of parent-child reminiscing differs between cultures, which in turn contributes to cross-cultural differences in the amount and function of past event conversations that people engage in. For example, Miller, Wiley, Fung, and Liang (1997) studied cultural differences in the socialization function of parent-child talk by analyzing the content of personal storytelling between American and Chinese families. They found that Chinese adults were more likely to spontaneously bring up children's past transgressions; and that Chinese adults tended to use such information to convey moral lessons or to direct children's future behaviour. In contrast, American families considered personal storytelling as the medium for strengthening social bonds or entertainment. In terms of story endings, Chinese families were more likely to direct the endings toward a specific attribute of the child than were American families, such that the Chinese parents explicitly established a link between children's past behaviour and their current self.

Furthermore, research has also demonstrated a link between parents' beliefs about the function of memory sharing and their reminiscing style. Past research has proposed three major functions of autobiographical memory, namely the social, directive and self functions (Bluck, Alea, Habermas, & Rubin, 2005). The expression of these functions has also been observed in past event conversations, and mothers' beliefs about the function of past event conversations were associated with their reminiscing style.

For instance, Kulkofsky, Wang, and Koh (2009) found that both American and Chinese mothers considered that talking to children about past events served the purposes of maintaining relationships, teaching behaviour regulation and helping

children define themselves. Again, cross-cultural differences were found for the socialization function; American mothers were more likely to report social and directive functions for joint reminiscing than Chinese mothers. The finding that American mothers were more likely than Chinese mothers to use shared reminiscing for teaching and problem solving (i.e. the directive function) contradicts past research showing that Asian mothers were more likely to associate shared reminiscing with the directive function (Miller et al., 1995; Mullen & Yi, 1995). The fact that Kulkofsky et al. collected mothers' reports of reminiscing function whereas previous research identified such information from the content of actual mother-child conversations may have caused this discrepancy. Furthermore, this discrepancy is likely due to the fact that American mothers may prefer to teach/problem solve in a relaxed, easygoing atmosphere that increases children's motivation in learning (e.g., talking about past events). In contrast, Chinese mothers may consider teaching as a serious matter and prefer a formal social setting where they insert more control over what and how their children are learning (Huntsinger, Jose, Larson, Balsink Krieg, & Shaligram, 2000).

More importantly, mothers' beliefs in the function of reminiscing predicted their reminiscing style, independently of culture. In other words, mothers who considered past event conversations as a means for social sharing and teaching were likely to adopt an elaborative style during reminiscing, in contrast to a repetitive style. Although Kulkofsky et al. did not find any direct link between mothers' beliefs about memory sharing and children's event recall, the impact of mothers' beliefs on children's memory development might be mediated by another factor, such as maternal reminiscing style (Fivush et al., 2006; Wang & Fivush, 2005). I will further elaborate on this argument later in the chapter.

Although evidence suggests that cultural differences in socialization function and conversation style lead to differences in memory retention, little is known about the underlying mechanism that would explain the impact of culture on various cognitive processes associated with memory retention. In other words, if different socialization processes exert their impacts on memory retention post encoding (e.g., parent-child conversations enhance children's memory representation), is it also the case that cultural differences exist in terms of how people perceive and encode personal experiences?

Wang (2009) compared the encoding and forgetting rates of both personal and fictional events between Asian and American college students. The encoding of personal events was investigated using a diary study, which required participants to list all the specific, one-time events that they experienced during the day for seven consecutive days. She found that Asian participants listed fewer episodes in their diaries than did American participants, and that females of both cultures reported more episodes than did males. In addition, similar forgetting rates were obtained between the two groups when participants were asked to recall the events from their diaries after one and two weeks of delay, suggesting that cultural differences in memory density (i.e., the number of events participants recalled from their diaries) were due to different encoding processes, but not due to variations in memory storage. To rule out the possibility that different socialization processes that people experienced between event encoding and retrieval may have contributed to the cultural differences in the number of events being recalled, a second study was conducted in which participants read and immediately recalled a fictional story. Consistent with the diary study, European Americans recalled more episodes than did Asians even when information was not relevant to the self.

Furthermore, Wang demonstrated that Asians tended to perceive a written text (the same fictional story as mentioned above) with less segmentation than did American participants. This is consistent with the claim that Asians are more likely to adopt a holistic approach with regard to cognitive processing, whereas European Americans are more likely to adopt an analytical approach, focusing on the salient features of the events (Nisbett & Miyamoto, 2005). In other words, in comparison to European Americans, Asians are more likely to attend to the similarities between the focal event and the relevant peripheral information, therefore perceiving the available information as a whole. It is, however, possible that a mismatch between language at encoding and retrieval might have hindered bilingual Asian participants' ability to recall personal memories. Given that all Asian participants were competent English speakers, having lived in the United States, on average, since they were six years old, and that most of the events were encoded in an English-speaking context, this seems unlikely. Wang argued that specific encoding and retrieving strategies employed by different cultures are likely to contribute to the differences in memory retention between Western and Eastern cultures, and this argument potentially explains the findings in some studies showing later first memories in Asian samples.

#### Cultural variation in memory content and self-construal

*Adults' earliest memories.* Although MacDonald et al. (2000) did not find any cultural variation in the volume of adults' recall of their earliest memories, there is increasing evidence to suggest that memory volume does vary by culture. For instance, Wang (2001a) compared American and Chinese college students' recall of earliest memories in their native languages (i.e., English and Chinese respectively). Cultural differences were found for memory specificity, content, and emotion intensity. In

particular, American students were more likely to recall specific events, as opposed to general, routine based events that were more likely to appear in Chinese participants' recollections. American participants were also more likely to mention events in which they were the central character, along with their own thoughts and feelings. In contrast, Chinese students were more inclined to mention events that focused on their friends and family; they were also more likely to mention others during recall compared to the Americans. In terms of emotional intensity, American participants were more likely to provide emotions spontaneously than did the Chinese students; they were also more likely to rate their memories as emotional rather than neutral, whereas emotion intensity (e.g., from very pleasant, neutral, to very unpleasant) were evenly distributed in the recall of Chinese participants.

*Children's autobiographical recall.* In line with the adult literature which shows cross-cultural differences in people's recollection of the past in terms of the volume, specificity, emotional intensity, and personal-social orientation (Wang, 2001a; Wang & Conway, 2004), a similar pattern of results has also been found with regard to the content and narrative cohesion of children's event recall. For example, when asked to retell a previously read story, Han, Leichtman, and Wang (1998) found that American preschoolers provided longer narratives than Korean and Chinese preschoolers. Compared with Korean and Chinese children, American children's narratives also contained more references to internal states and evaluations, as well as more mentions of the self relative to others. In terms of narrative cohesion, American and Chinese preschoolers provided more temporal information than did Korean preschoolers, and American preschools' narratives contained more descriptive information than those of both Chinese and Korean preschoolers. However, there were no differences between

cultures in the accuracy of children's recall, indicating that the richness of one's memory does not necessarily increase memory accuracy.

Wang and Leitchman (2000) asked American and Chinese children to recall autobiographical memories in which specific emotions were experienced, Chinese children provided more references to other people's feelings and thoughts than to their own internal states. Chinese children's memories were more likely to be socially orientated, whereas memories of American children were more likely to focus on aspects that are relevant to their personal experiences. Given the consistent findings with regard to cross-cultural differences in both adults' and children's recollection of autobiographical memory, it is likely that different socialization processes in early childhood contribute to these differences in children's memory recall. Children gradually internalize culturally-specific memory constructs, and together with ongoing cultural socialization practices, these social aspects and influences of culture further increase cultural variation in adults' autobiographical memories.

*Self-construal.* In Wang's (2001a) study, participants' self-descriptions were measured by the Twenty Statements Test (TST; Kuhn & McPartland, 1954). The TST is a reliable test used to examine self-construal across cultures by asking participants to complete sentences beginning with 'I am'. Participants' self-construal was reflected in their self-organization and self-evaluation scores. Self-organization categorised participants' personal characteristics as private, collective or public, and self-evaluations were coded as positive, negative, or neutral. American participants had higher private self-organization scores, whereas Chinese participants provided more collective self-descriptions. In addition, American participants provided more positive self-descriptions than did Chinese participants. Partial correlations, in which the effects

of culture, gender and birth-order were controlled for, showed a positive correlation between private self-organization scores and memory specificity. In other words, participants who provided more private, as opposed to collective self-descriptions, were more likely to have specific, one-point-in-time first memories. In addition, the age of earliest memories was positively correlated with the other-self ratio, such that participants who mentioned more about others than themselves tended to have a later first memory. Therefore, this study provides evidence for cross-cultural differences in the organization and content of people's recall of earliest memories. It also lends empirical support to theories positing a close link between the construction of autobiographical memory and the development and maintenance of self-concept (Fivush, 1994; Pillemer, 1998).

Given the consistent findings on cultural differences in the content and organization of both children's and adults' autobiographical memory, attempts have been made to explain these differences. From a sociocultural constructivist perspective, maternal reminiscing style has a large impact on children's cognitive and social development (Nelson & Fivush, 2004; Vygotsky, 1978), and this association is also affected by different cultural beliefs. I now review research showing cross-cultural differences in maternal reminiscing style and how these differences subsequently influence children's autobiographical memory and self-concept.

### ***Culture and the Construction of Self***

#### **Maternal reminiscing style and children's self-concept**

The way that culture influences self-construction as a cognitive process can be reflected in maternal reminiscing style, which in turn facilitates the development of children's autobiographical memory, as well as their sense of self (Fivush et al., 2006).

As mentioned earlier, European-American mothers who adopt an elaborative reminiscing style have children who recall their personal experiences with more details, and their autobiographical narratives also include more references to their own thoughts and feelings (Bergen, Salmon, Dadds, & Allen, 2009; Haden, Ornstein, Rudek, & Cameron, 2009; Harley & Reese, 1999; Reese, et al., 1993). In addition, children of highly elaborative mothers also have a better understanding of emotions and more advanced knowledge about the self in terms of having a consistent view of the self (Bird & Reese, 2006; Laible, 2004; Welch-Ross, et al., 1999). In contrast, Asian mothers are more likely to adopt a less elaborative reminiscing style, such that they tend to repeat the same question until children provide a satisfactory answer. Asian mothers are also less likely to follow up their children's answers with new information compared to European American mothers. As a result, in comparison to children from European-American countries, Asian children tend to provide less detailed narratives about the past; they also tend to include fewer emotions and evaluations in their memory recollections (Chae, Kulkofsky, & Wang, 2006; Fivush & Wang, 2005; Minami & McCabe, 1995; Mullen & Yi, 1995; Wang, 2001b, 2006).

Western cultures place great emphasis on remembering specific episodes of personal past as a critical channel to establish individual's sense of self, whereas Eastern cultures are in favour of using memory to define the self as similar to others, with less emphasis placed on the unique attributes for the self. Against this backdrop, further cross-cultural research has been conducted to investigate whether there is cultural variation in the link between maternal reminiscing style and children's sense of self. Indeed, elaborative maternal reminiscing style is associated with children's autobiographical memory recall, regardless of culture (Wang, 2006). However, this finding does not imply a causal link between maternal elaboration and children's



memory recall. Given that autobiographical memory is connected to the sense of self, and cross-cultural differences in maternal reminiscing style predict variations in children's memory recall, it is possible that culture also moderates the link between maternal reminiscing and children's sense of self.

Wang (2004) examined the content of European American and Chinese children's self-constructs and the link between their autobiographical memory and self-description. American children's autobiographical narratives tended to be lengthier and more emotionally laden than those of Chinese children. American children were also more likely to provide self-descriptions focusing on their personal attributes and inner traits, whereas Chinese children's self-descriptions were more likely to represent their social roles or group membership. In addition, American children were more likely to provide positive evaluations about themselves that were abstract and context-free, whereas Chinese children tended to provide neutral or modest self evaluations about their behaviours within a specific context. Although children's language skills were not directly measured, both age and the number of self-descriptions provided were partialled out when correlating self-description with memory recall. Regardless of culture, children who described themselves in terms of personal attributes or internal traits also provided lengthier, more detailed childhood memories. Therefore, it appears that the link between memory and self emerges during the preschool years and that culturally specific self-constructs are also present very early in the lifespan.

In other cross-cultural research, Wang, Doan, and Song (2010) investigated the link between internal state language during mother-child conversations and children's self knowledge in terms of trait and evaluative self-representations. In this study, European American and Chinese American mother-child dyads discussed one positive

and one negative event that the child (aged 3) had experienced. Similar to a previous study (i.e., Bird & Reese, 2006), internal state language included references to children's emotions, thoughts, desires and subjective evaluations; the functions of internal state talk were further coded as attributions, explanations and confirmations. To elicit children's self-knowledge, an open-ended task, asking them to tell a story about themselves, was used.

Again, cross-cultural differences were found for the amount of internal state language, such that American mothers and their children included more references to children's internal states than did their Chinese counterparts, even after controlling for children's age and language skills. American mothers were also more likely to provide explanations for their children's internal states than Chinese mothers. Meanwhile, American children were more likely to provide trait and evaluative self-descriptions than Chinese children. Further analyses showed that mothers' and children's uses of internal state language uniquely predicted children's use of traits and self-evaluation. Consistent with Bird and Reese's (2006) finding that maternal explanations of children's negative emotions uniquely predicted children's self concept consistency, Wang et al. also found that, regardless of culture, both mothers' and children's use of explanations of internal state language during the negative event conversation uniquely predicted children's provision of self-evaluation. Furthermore, it was suggested that mother-child discussions about children's internal states mediated the relation between culture and children's self-descriptions. Together with other research demonstrating the link between memory and self-concept (e.g., Wang, 2004), Wang et al. (2010) proposed that mother-child reminiscing is an important medium in which children establish culturally-specific models of self-constructs, and these models, in turn influence the

encoding, storage and retrieval of children's autobiographical memories and ultimately their identity construction through the narration of life stories.

### Cultural similarities in memory and the self

Despite findings that there are cross-cultural differences in the recall of autobiographical memory, there is also evidence, especially from priming studies, showing similarities in people's autobiographical memory between independent and interdependent cultures (e.g., Ross, Xun, & Wilson, 2002; Wang, 2008).

As previously mentioned, the reminiscence bump refers to a disproportional increase in people's recalls of personal memories during the period from 15 to 30 years of age, compared to other life periods (Rubin, et al., 1986). It has been suggested that this increase in memories coincides with a critical period of identity formation, which is based on the recollection and reflection of the personal past (Erikson, 1968). Having these highly accessible memories from this age span also allows individuals to mentally travel back in time in order to maintain a stable sense of self across the lifespan (Conway & Pleydell-Pearce, 2000; Rubin, Rahhal, & Poon, 1998). Independent cultures promote a sense of uniqueness as a prominent feature of one's characteristics, and people from these cultures often recall earlier, more detailed memories than those from interdependent cultures. Would it therefore be true that the reminiscence bump for independent cultures is earlier than that of interdependent cultures?

Conway, Wang, Hanyu, and Haque (2005) compared the date and content of adults' autobiographical memories across their lifespan from both independent (England and United States) and interdependent cultures (Japan, China, and Bangladesh). Again, cross-cultural differences were found for memory specificity, emotional intensity, and personal-social orientation. In contrast, there were no cultural

differences with regard to the timing of the reminiscence bump. In other words, memories that fell within the boundary of the bump (i.e. between 15 and 30 years of age) were more accessible than memories from other life periods (e.g. between 30 and 50 years of age), regardless of culture. Therefore, the function of autobiographical memory that is relevant to the development of self could be a universal phenomenon despite the cultural variation in the onset and content of autobiographical memory.

With an increasing trend toward globalization, immigrant populations offer a unique opportunity for cross-cultural research to gain insight into the associations between culture, self-concept, and cognition. As they are exposed to influence of both home and adopted cultures, immigrants may develop belief systems corresponding to each culture, which may, in turn, lead to different manifestations of self-construal. In addition, specific cultural norms and values are deeply embedded within language, which gives rise to the possibility that culturally-specific psychological processes can be triggered by speaking in the associated language. Indeed, research has shown that cultural priming, in terms of activating a specific language, shifts people's values, personality, and cognition in a direction consistent with the primed cultural system (Chen & Bond, 2010; Oyserman & Lee, 2008). Given the close link between language, self-concept, and autobiographical memory, it seems possible that activating the language of a particular culture would lead to changes in memory content and self-concept, corresponding to the primed culture.

Indeed, there is evidence showing that memory content can be changed as a result of cultural priming. In Wang (2008), Asian American participants were primed to focus either on their American self or on their Asian self before recalling two important life events. Culturally-specific self was manipulated in a sentence completion task, in

which participants were asked to complete five sentences about individualistic self-constructs as being an American or Asian, and another five sentences pertaining to collective self-constructs for either culture. Although cultural priming did not produce differences in the length of the memories between groups, it did manipulate memory focus, degree of individual autonomy, and the amount of social interaction in the memories in directions parallel to previous cross-cultural studies (e.g., Han et al., 1998; Wang, 2001a, 2004). Specifically, participants who were primed to focus on their American self were more likely to produce personally orientated memories describing their own opinions, feelings, and predilections. In contrast, when the Asian self was made salient, participants were more likely to produce socially-orientated memories; they also included more references to social interaction, as well as to the thoughts and feelings of others. Although all participants were bilingual and had lived in the United States since they were young (on average 3.8 years old), this study did not rule out the possibility that the linguistic environment in which the original events occurred might also influence subsequent memory recall. In other words, if an event was encoded a language other than English and the participant was asked to recall it in English, this mismatch could potentially interfere with memory retention by changing the style and content of recall.

Not only is it possible to shift the focus and content of one's memory parallel to a primed culture, there is also evidence that specific aspects of a bicultural individuals' self-concept can be made salient by priming a specific culture by the use of language. For instance, Ross et al. (2002) recruited Chinese-born and Canadian-born undergraduate participants of either European or Chinese descent to investigate the impact of using language as a prime on their self-descriptions and self-esteem. Participants' self-descriptions were collected from an open-ended questionnaire in

which they were asked to describe what they were like as a person, and their self-esteem was measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Different cultural belief systems were activated by randomly assigning Chinese-born participants to answer the questionnaires in either Chinese or English.

Chinese-born participants who wrote in Chinese provided self-descriptions that were similar to those found among other Asians, such as more references to collective than private self; their self-statements also tended to be emotionally neutral, with a similar number of positive and negative descriptions. In contrast, Chinese-born participants who wrote in English were more likely to report self-descriptions that were similar to their Canadian-born counterparts of both ethnicities, such as including more private self-statements and showing the tendency to include positive descriptions of the self. Both Chinese-born groups were similar to each other in terms of their age and the time they had spent in Canada, and only the language they use to report their self-descriptions made them distinct from each other. Therefore, the differences in self-descriptions between the Chinese-born writing in English group and the Chinese-born writing in Chinese group were likely due to the different language they used, which activated the corresponding cultural norms on self processing.

Interestingly, there were no significant differences between Canadian-born Chinese and Canadian-born Europeans in their self-descriptions, when both used English to complete the task. Together with the similarity found in the content of self-descriptions between the Chinese-born writing in English group and the Canadian-born Chinese group, Ross et al. argued that Asian and European identities are stored in separate cognitive systems, and that language triggers the activation of a culturally specific belief system. Furthermore, participants who answered in Chinese reported the

lowest levels of self-esteem, whereas there were virtually no differences between the remaining groups, even though past research has shown the tendency for Europeans to report higher self-esteem in comparison to Asians (Heine, Lehman, Markus, & Kitayama, 1999). This study further highlights the idea that the activation of specific cultural belief systems moderates the impact of culture on people's self-concept and self-regard.

Similarly, Wang, Shao, and Li (2010) examined the relation between language and cultural self among bilingual Hong Kong Chinese adolescents aged between 8 and 14 years old. They found that when interviewed in Chinese, adolescents were more likely to endorse Chinese cultural values, in comparison to those who were interviewed in English. Interestingly, adolescents who were interviewed in Chinese also had lower autonomous-self scores and provided autobiographical memories that were more likely to focus on others and social interactions. On the other hand, participants who were interviewed in English were more likely to display the sense of autonomous self, and their memories were more likely to be lengthier and focused on the self. Taken together, studies on bilingual participants demonstrate that language mediates the relation between culture and self, which in turn shapes the content and structure of people's memory. In addition, people's sense of self is built on their recollection of the past. Both culturally specific memory orientation and content further increase the cross-cultural differences in peoples' self-perception, which may subsequently lead to even more cross-cultural differences in people's recall of their personal past.

### ***Narrative Identity, Self, and Culture – Study 2 Overview***

In Chapter 2, I reviewed research arguing that life narratives provide a new approach to investigating the construction of personal identity (e.g. McAdams, 1996;

McAdams & Pals, 2006). As McAdams (1996) contended, “It is mainly through the psychosocial construction of life stories that modern adults create identity” (p.295). Unlike traditional measures of identity, which categorize people on the basis of similar self-constructs, life narratives access the most individual specific level of identity: the meanings people draw from life events by integrating their past, present and the anticipated future.

Meanwhile, adolescence is a critical period for the construction of identity (Erikson, 1968), and it has been suggested that it is not until late adolescence that coherent life stories are established (Habermas & Bluck, 2000). In addition, research has also shown that adults benefit from having coherent, meaningful life stories, as indicated by having greater satisfaction with life and lower levels of depression and anxiety (Baerger & McAdams, 1999). However, it is less clear how life story coherence is related to well-being among adolescents, when they are still in the process of learning how to tell a story of their lives. Very few studies to date have investigated life story and well-being in adolescence, and the results are far from conclusive. For instance, the meaning that participants extracted from significant life events was negatively associated with well-being in a sample of young adolescent boys (McLean et al., 2010), whereas others have found no relationship between life narratives and well-being in adolescents between 12 and 18 years of age (McLean & Breen, 2009). Therefore, one objective for Study 2 is to map out the developmental trajectory of life story narratives from early to late adolescence. A second objective is to determine the age at which life story narratives become associated with well-being, and whether this link is positive or negative at its inception.



Unlike memory research, which has been extending its scope with cross-cultural investigations in the content and function of autobiographical memory, very little research has been conducted to address cultural variations in the construction of the life story or in its connection with well-being. Past research has shown large cultural variations in the accessibility, content, and function of autobiographical memory between independent and interdependent cultures (Han et al., 1998; MacDonald et al., 2000; Mullen, 1994; Wang, 2001a; Wang, Hutt, Kulkofsky, McDermott, & Wei, 2006), which in turn cause cultural differences in people's self-construal (Markus & Kitayama, 1991; Wang, 2001a). Therefore, additional objectives of Study 2 are to investigate whether there are cultural differences in the development of life story construction and if culture moderates the relationship between narrative identity and subjective well-being.

Study 2 is a cross-cultural investigation, comparing New Zealand European (NZE) adolescents with New Zealand Chinese (NZC) adolescents. I investigate the development of narrative identity and the associations between narrative identity and well-being from early to late adolescence. Narrative identity is measured by the coherence and meaning of narratives for life stories and specific life events. The following hypotheses are proposed:

1. Regardless of culture, age-related increases were predicted for the coherence of life story narratives in the current sample, consisting of 12- to 21-year old adolescents. Age-related changes in life story structure are also expected (e.g., the number of life period chapters). Several scales will be used to measure the degree of narrative coherence, in that higher scores

indicate mature narrative identity. It was expected that scores on these scales will all improve with age.

2. In Study 1, girls scored significantly higher on the meaning-making scale than did boys across age groups. There is also evidence of gender differences in the onset and content of adults' autobiographical memories (MacDonald, et al., 2000; Wang, 2001a). I expected to find gender differences in the construction of life story narratives in adolescence. Specifically, I predict that female adolescents will score higher on the coherence scales, including meaning-making, than will male adolescents.
  
3. It was also hypothesized that narrative identity would be associated with well-being by late adolescence. In line with McLean and colleagues (e.g., McLean & Breen, 2009; McLean et al., 2010), it was also predicted that narrative identity may not relate to well-being in early adolescence, and this link would be negative when it is first observed. The moderation effect of culture on the relationship between narrative identity and well-being is exploratory. On one hand, Western cultures place greater emphasis on personal remembering such that people from these cultures have earlier, richer and self-focused autobiographical memories. This gives rise to the possibility that the link between narrative identity and well-being might emerge earlier for NZE adolescents compared to NZC adolescents. On the other hand, Eastern cultures promote the use of memory sharing as a way to teach moral lessons and encourage culturally appropriate behaviours, which may help people to better understand how their past experiences influence the person they eventually become. Therefore, it might also possible that the link between narrative identity and well-being would emerge earlier for

NZC adolescents, as culturally-specific socialization processes and parenting style may facilitate them in internalizing the meaning of personal past upon their self-understanding at a younger age compared to NZE adolescents.

4. Traditional personality measures (e.g., the Big Five Inventory) have been criticized for not considering the impact of contextual factors on people's self-concept (McAdams, 1996). Given the recent finding that narrative identity explains variance in well-being above and beyond trait personality (Bauer et al., 2005), it was predicted that narrative identity could be a unique predictor of adolescents' well-being, in addition to trait personality. I would also explore whether a narrative approach is a better measure of identity for people who hold context-dependent, collective self-concepts, in comparison to the predictability of personality traits.

## Chapter 5

### Study 2: A Cross-Cultural Investigation of the Development of Narrative Identity and Its Relation to Well-being in Adolescence

#### Method

##### *Participants*

One hundred and eighty four adolescents (100 females, 84 males) aged between 12- and 21-years old ( $M = 16.92$  years,  $SD = 2.52$ ) took part in the current study. Participants above the age of 18 were recruited from the Health Sciences and Psychology Department at the University of Otago, and through an employment agency (Student Job Search) at the University of Otago, Dunedin. The remainder of the participants were recruited from secondary schools in Dunedin, Auckland, and Hastings. All participants identified themselves as either European New Zealanders (NZE,  $N = 91$ ) or, as first- or second-generation immigrants with Chinese ancestry (NZC,  $N = 93$ ). One adolescent was excluded from the NZE group because she was an exchange student from a European country. Another five adolescents were excluded from the NZC group due to their recent arrival to New Zealand and because they chose to be interviewed in Chinese, unlike all the other adolescents who chose to be interviewed in English. The Chinese-speaking adolescents comprised too small a number for any meaningful comparisons with the rest of the NZC sample. Therefore, the final sample consisted of 90 NZE and 88 NZC adolescents. Participants also reported their country of birth and, if they were born elsewhere, the number of years they had lived in New Zealand. Seventy-six NZE and 37 NZC adolescents were born in New Zealand, and 80% of adolescents who were born overseas (8 NZE and 41 NZC) had spent more than five years living in New Zealand.

Participants were informed with a brief overview of the purpose of the current study. They were also made aware of the nature of information that would be collected in the study. All participants gave their consent before being interviewed, and parental consent was also obtained for those who were younger than 16 years old at the time of the interview. Information on parental education levels was collected for 71 NZE and 36 NZC adolescents<sup>1</sup>. For parents of NZE adolescents, five mothers (7%) and three fathers (5%) completed intermediate school, 43 mothers (63%) and 40 fathers (63%) completed high school or received a polytechnic qualification or trade certificate, and 20 mothers (30%) and 21 fathers (32%) completed tertiary or postgraduate education. For parents of NZC adolescents, 11 mothers (31%) and 10 fathers (28%) completed high school or received a polytechnic qualification or trade certificate, and 25 mothers (69%) and 26 fathers (72%) completed tertiary or postgraduate education. Participants were given \$20 to compensate them for their time, and a \$10 petrol voucher was sent to their parents once they returned the questionnaire package. All interviews were recorded on a digital voice recorder and later transcribed verbatim. There was no time limit imposed on the participants, nor was there any requirement for them to give answers to all questions. The length of the interview session varied across individuals, ranging from 30 minutes up to 1.5 hours.

### ***Measures***

Participants' psychological well-being was assessed across different domains. These scales were chosen based on their validity for our target age group (early to late adolescence) and across cultures (European and Chinese).

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<sup>1</sup> The low response rate for family information was due to the fact that it was collected as part of the parental questionnaire pack, which was optional for parents to return. The response rate did not differ by the age of participant.

### Depression

The Reynolds Adolescent Depression Scale – 2<sup>nd</sup> Edition (RADs-2; Reynolds, 2002) was used to examine participants' levels of depression. The RADs-2 consists of 30 items and provides an indication of the severity of depressive symptoms in adolescents, but it is not designed as a formal DSM-IV diagnosis for Major Depressive Symptom. A 4-point scale is assigned to each item, and participants were asked to choose the answer best described their feelings. The answers on the scale were *Almost never* (0), *Hardly ever* (1), *Sometimes* (2), and *Most of the time* (3). A total score of the scale was produced for each participant by summing scores for each item. Items on the RADs-2 were written to be understood by adolescents with approximately grade 2 reading competency, and it has been demonstrated to have acceptable validity and reliability when tested among New Zealand adolescents across different ethnic groups (Walker, Merry, Watson, Robinson, Crengle, & Schaaf, 2005). Raw scores can be standardized by adjusting for age and gender.

### Life satisfaction

Life satisfaction was measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985), which consists of five items tapping into the overall quality of life. Each item is answered with a 7-point scale, indicating the extent to which participants agree with the statement such as, "The conditions in my life are ideal," and "I am satisfied with my life." The SWLS has been demonstrated as a reliable measure of overall life satisfaction (Pavot, Diener, Colvin, & Sandvik, 1991), exhibiting high internal consistency and discriminant validity (Diener et al., 1985).

### Ethnic identity

The Multigroup Ethnic Identity Measure Revised (MEIM-R; Phinney & Ong, 2007) was used to measure adolescents' ethnic identity development. The MEIM-R consists of two subscales (exploration and commitment), and each includes three items. Participants were first presented with an open-ended question eliciting the ethnic group they most identified with. They then answered the subsequent questions based on this ethnic identity. Each item was answered on a 7-point scale, ranging from strongly disagree (0) to strongly agree (6). The average score across the six items can be used as an indicator for overall strength of ethnic identity; separate scores for the subscales, each averaged across three items, can be used as measures of adolescents' levels of exploration and commitment for a particular ethnic identity. The same questions were applied if the participant identified with another ethnicity. The MEIM has been demonstrated to capture ethnic identity as a global phenomenon across ethnic groups (Roberts, Phinney, Mase, Chen, Roberts, & Romero, 1999).

### Personality measurement

The Big Five Inventory (BFI; John & Srivastava, 1999) was used as the measure for five personality traits: *openness*, *conscientiousness*, *extraversion*, *agreeableness*, and *neuroticism* (OCEAN). The BFI consists of 44 items, and each statement is scored on a 5-point scale indicating the extent to which the participant agrees with that item; scores range from strongly disagree to strongly agree. Separate scores are calculated for each subscale so that the extent to which an individual possesses each trait is established. The BFI has been translated into a number of languages and has been demonstrated to be consistent and reliable across cultures (Chen & Bond, 2010).

## ***Procedure***

Our life story interview was adapted from McAdams' (1995) Life Story Interview for adults, and it was also an extension of the Emerging Life Story Interview (ELSI; Reese et al., 2010) that we implemented in Study One. The interview was divided into several parts. Only information pertinent to the current study will be reported, which includes the life story chapter task and two specific life events (i.e., a low point and a turning point). There were two female interviewers, one of European descent and the other of Chinese descent. Adolescents were interviewed by an interviewer of the same ethnicity. See Appendix B for details of the interview protocol.

### Life story task

The interview started with the life story task, which was very similar to the procedure carried out in Study 1. However, the number of chapters participants could offer was kept at seven. We decided on this number based on findings from Study 1 that about 80% of children provided seven or fewer chapters and also on McAdams' life story interview procedure. Seven chapters provides adolescents with enough space to convey the important events that happened in their lives, but constrains the time burden of the overall interview. The instructions for this task are as follows:

*"I would like you to begin by thinking about your life as a story. Think about how your life could be divided into different chapters. What might those chapters be? I would like you to describe for me each of the main chapters of your life story. You may have as many or as few chapters as you like, but I would suggest dividing your story into at least 2 or 3 chapters and at most about 7. If you can, give each chapter a name and describe some of the things that happened in that chapter. While we talk, I'll make some notes about what the chapters are and what would be in them."*



Just as in the previous study, the narrator was told to start with the chapter that she/he was in right now and to narrate backwards to the earliest chapter. The interviewer did not give any specific instructions on the content of the chapters; however, if the narrator gave a detailed description of a single event, then the interviewer suggested she/he cut down the details without influencing the overall structure of the chapter (i.e., the number of events being narrated in the chapter). Once the narrator had reached the first chapter, the interviewer recapped all the chapters in a chronological order as in Study 1, so that the narrator had a chance to verify the content or add new information to the life story.

### Specific life events

Once the adolescent was satisfied with the content of his or her life story, the interview preceded to the next phase in which narratives of specific life events were elicited. The order of the two events remained the same for all participants, such that they always started with a low point event, followed by a turning point event<sup>2</sup>. A *low point event* was referred to as any specific experience in which the narrator felt really negative emotions, such as extreme sadness, loneliness, fear, despair, disillusionment, guilt, and so forth. A *turning point event* was referred to as something that had changed the narrator's life or personality. Each event narration started with the participant's free-recall of the event, during which the interviewer responded only with nondirective answers, such as '*mmm hmm, what else?*' Once the narrator had exhausted his or her recall for one event, the interviewer asked the following specific questions:

*"When did this happen, how old were you? How did you feel? Were there any other people there? How did the other people feel? Why was*

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<sup>2</sup> We purposefully did not counterbalance the order of the events. A high point event was always elicited at the end in order to reduce the intensity of negative emotions potentially caused by narrating the low point and turning point events.

*it a low point for you? Did this event change your life? If yes, how did it change your life?’<sup>3</sup>*

### Well-being, personality, and ethnic identity measures

Once the event narration was completed, participants were seated in front of a computer to answer questionnaires on well-being, personality and ethnic identity. All questionnaires were presented by Medialab, which also recorded the scores for each item. These individual item scores were later used to compute the overall score for each measure. The questionnaires were presented in the following order: The Big Five Inventory (BFI), the Satisfaction with Life Scale (SWLS), Reynolds Adolescent Depression Scale (RADS-2), demographic questionnaire (e.g., the country they were born, their age when they first moved to New Zealand if they were born overseas, their parents’ ethnicity, the language they spoken at home), and the Multigroup Ethnic Identity Measure Revised (MEIM-R).

### ***Coding***

#### Life chapters

In Study 1, life story narratives were coded in terms of the number of chapters, the content of chapters (e.g., life period vs. event specific), and chapter specificity (e.g., the proportion of chapters with specific memories). The same coding scheme was applied this second study, in addition to the following new coding categories.

First, the quality of the beginning and ending of the life stories was coded, using a scheme adapted from Bohn and Berntsen (2008). A 4-point scale was created to differentiate how adolescents started their life stories. No points were given to a story,

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<sup>3</sup> All questions were asked for all events apart from the turning point event, in which the question ‘Why was it a turning point in your life?’ was omitted. This was an attempt to avoid redundancy to the question ‘How did this event change your life?’.

which began after birth, 1 point was given when the story began at birth, 2 points were given when the story began at birth, with additional information about where he/she was born, and 3 points given when the story began with birth, as well as the place and the date of birth. Similarly, another 4-point scale was created to capture the detail of the life story endings. No points were given to a story that ended in the past, 1 point was given when the story ended in the present, 2 points were given when the story ended with a short resume or outlook into the future, and 3 points were given when the story ended with an elaborate resume or outlook into the future.

A new scheme was created to capture the coherence of life story chapters. This chapter coherence scale is a 4-point scale with the degree of coherence increasing from zero to three and each chapter receives a separate coherence score. No points were given to chapters in which the narrator mentioned several events, ideas and concepts, but did not make an attempt to explain connections between events or offer any details about the events. One point was given to chapters in which ideas and events were loosely connected to form a central theme. However, in chapters that scored 1 point, there was a lack of specific episodes, and events were not elaborated upon. Two points were given to chapters in which specific episodes were mentioned with detailed descriptions. These ideas/events needed to be connected to each other semantically in order to reach one or several overarching themes. Chapters that scored a two did not mention emotions, evaluations, or contain any self-reflections in the narratives. Three points were given to chapters in which events or concepts were connected with each other, and there were clear indications of self-reflection, emotion evaluation, and complex biographical elements. In addition, episodes from the past or in the future could be introduced as being connected to events that belonged to the current chapter.

### Specific events

Each specific event was first coded for event type, based on a scheme we adapted from Study 1. In the current study, there were six categories for event type: *relationship*, *accident/injury*, *achievement*, *leisure*, *immigration*, and *personal development*. Unlike the previous study in which a single event could only be coded for one event type, the current scheme coded each event type as a dichotomy (present or absent) to capture the overall complexity of the narratives. Therefore, an event could be coded as being both immigration and personal development if both themes were mentioned.

Event narrative coherence was coded using the Narrative Coherence Coding Scheme (NaCCS; Reese, Haden, Baker-Ward, Bauer, Fivush, & Ornstein, in press). The NaCCS defines narrative coherence as the extent to which the narrative makes sense to naïve listeners and it consists of three dimensions: *Context*, *Chronology*, and *Theme*. We used only the theme subscale in the current study because this subscale captures the degree to which a narrative was on-topic and conveys how the event was significant to the narrator's life. This allowed us to further compare it to other similar schemes, such as McLean and Pratt's (2006) meaning-making scale. Only adolescents' free-recall of the event was included for the theme coding, which was based on a 4-point scale. A narrative that was substantially off-topic and/or characterized by multiple digressions that made the topic difficult to identify received a score of zero. A narrative in which most of the statements converged to the same topic but lacked substantial development received a score of one. A narrative, which substantially developed its topic via causal linkage, elaborations, evaluations, and interpretations, received a score of two. However, such narratives did not contain any resolutions or links to other

biographical experiences. To receive the highest score of three, the narrative had to contain all of the above, and also incorporate resolutions to the event, and/or links to other biographical experiences or self concept.

The Developmental Consequentiality scale (DC; Habermas & de Silveira, 2008) was used as an indicator for the extent to which the narrator established links between events and change of personality. Originally, developmental consequentiality was coded on a 7-point scale, with labels provided for responses 1, 3, 5, and 7 as anchor points. We adapted the scale into a 4-point scale; each point corresponded with the anchor points in the original scale. As a result, no points were given to narratives in which the narrator did not provide any reference of personality change or realization of personal development. External changes, such as *"I go to a different school now"*, were not considered as having any developmental consequentiality. One point on the DC scale indicated that changes in personality or personality development were referred to in the narrative, but that the narrator did not articulate or explicitly explain the change. An example would be *"I was a shy person then"*; the use of past tense and the word 'then' implies that the narrator was no longer shy, but no explicit description was given of how the narrator's personality had changed. Two points were given to a narrative in which the narrator explicitly described the change in personality, but he/she did not explain why such a change had occurred. In other words, the development in personality was fairly meaningful, but not comprehensive. In addition, such a change should be internal, regarding personality or opinion rather than an external change or temporary transition between emotions. Three points were given to a narrative in which the development of or change in personality was described with reference to motives or causes. The narrator could also offer evaluations on the emotional content of the event and again the emphasis was on internal states and personality. Two DC scores were

given for each event: one based on free-recall and the other one based on the overall content (including answers to questions such as ‘how did this event change your life?’).

The presence of redemptive sequence in event narratives was also coded. A redemptive sequence refers to events in which a negative situation changed into a clearly positive situation, or produced a positive outcome of some kind (McAdams et al., 2001). In other words, it was a measure of how often people draw positive conclusions from negative events. Redemption scores were based on the overall content of each event, and a score of 1 was given to its presence while a score of 0 was given to its absence.

In addition, each event narrative was coded for the degree of meaning-making and the amount of emotional content. The same meaning-making scale used in Study 1 was used with a slight adaptation. In Study 2, meaning-making was scored twice: one score for free-recall and another score for overall recall, as an attempt to record how much self-reflection that adolescents underwent spontaneously without explicit requests for this information. Lastly, the emotional content of the narrative was coded in terms of the number of positive and negative internal emotion, desire, and external evaluations that were attributed to either the self or others, in the same manner as for Study 1.

#### Reliability calculations

Reliability was calculated based on 25% of the total transcripts, with an equal number of transcripts from both cultures. Two main coders were each responsible for different aspects of the coding scheme. Each main coder established satisfactory levels of reliability with their reliability partners, and the main coders were reliable with each other on codes that were shared between them. Cohen’s Kappa was calculated for the

emotion coding, separately for each life event, and Kappas ranged from .76 to .85. Percentages of agreement were calculated for dichotomous variables (e.g., life period vs. event specific chapters, redemptive sequences for specific events) and they ranged from 82% to 100% agreement. Intraclass correlation coefficients were produced for scale-based variables (e.g., chapter beginning and ending scores, chapter coherence, theme, meaning-making, and developmental consequentiality) and these ranged from .73 to 1.0. See Appendix C for details on each reliability score.

## **Results**

### ***Preliminary Analyses***

Univariate analyses of variance (ANOVAs) were carried out to see whether mothers' and fathers' education levels differed as a function of adolescents' age and ethnicity. Parents reported the highest education level they achieved, which was scored on a scale ranging from primary school (1-point) to postgraduate (6-points). For mothers' education level, there was a main effect of culture,  $F(1, 98) = 13.64, p < .001$ , partial  $\eta^2 = .12$ , such that mothers of New Zealand Chinese (NZC) adolescents reported higher education levels ( $M = 4.97, SD = 1.08, N = 36$ ) than mothers of New Zealand European (NZE) adolescents ( $M = 4.12, SD = 1.18, N = 68$ ). For the overall sample, however, maternal and paternal education levels were not significantly correlated with any of the narrative variables or well-being measures, and the same pattern was observed when correlations were conducted separately for each ethnicity.

Independent-samples t-tests were carried out to see whether there were any differences as a function of adolescents' age, gender, narrative, and well-being between adolescents whose parents completed family demographic information and those whose parents did not provide this information. The only significant difference was found for

the number of chapters,  $t(176) = -2.69$ ,  $p < .05$ , such that adolescents whose parents returned the questionnaires had more life chapters ( $M = 4.55$ ,  $SD = 1.64$ ) than those without parental questionnaires ( $M = 3.92$ ,  $SD = 1.39$ ). For adolescents whose parental education information was collected, neither maternal nor paternal education was a significant covariate when testing culture differences in any of the narrative variables. Given that neither maternal nor paternal education levels were correlated with adolescents' narratives and well-being, parental education levels were not considered further in the main analyses.

In New Zealand, high school education lasts five years, from Year 9 until Year 13. Most children start high school at age 12 or 13, and starting from Year 11, when students are approximately 15 years old, they begin sitting nation-wide exams to accumulate course credits for university entrance. At the time of the study, people were also eligible to obtain a driver licence at age 15 in New Zealand. A majority of students finish high school at around 18 years of age before entering university. Eighteen is also the age at which people become eligible to vote in New Zealand and is the legal age for alcohol consumption. Based on these social and educational milestones, combined with theoretical claims that a coherent narrative identity emerges in mid to late adolescence (Habermas & Bluck, 2000) and that a coherent narrative identity predicts positive well-being in university students (Bauer et al., 2005), adolescents in Study 2 were divided into three age groups. The early adolescent group consisted of adolescents between the ages of 12 and 14 ( $N = 49$ ), the mid-adolescent group consisted of those aged between 15 and 17 years old ( $N = 63$ ), and the late adolescent group consisted of students aged between 18 and 21 ( $N = 66$ ).



The total number of words for each interview transcript was taken as an approximate measure of participants' narrative length, and ANOVAs showed no significant differences in narrative length as a function of culture or gender. However, there was an age-related increase in narrative length,  $F(2, 165) = 9.32$ , partial  $\eta^2 = .10$ . Post-hoc Bonferroni tests revealed that participants in the early adolescent group had significantly shorter narratives than did those in the late adolescent group, whereas there were no differences between these two groups and the mid-adolescent group. In addition, narrative length was moderately correlated with most of the narrative variables ( $r_s = .22$  to  $.64$ ,  $p_s < .05$ ); therefore, it was used as a covariate in the following analyses.

Research has found positive associations between immigrant adolescents' ethnic identity and various aspects of well-being (Phinney, Horenczyk, Liebkind, & Vedder, 2001; Phinney & Kohatsu, 1997; Usborne & Taylor, 2010). Therefore, adolescents' MEIM scores were recorded as a control variable for the following main analyses. Eight participants did not report their main ethnicity, and 16 adolescents from the NZE group and 33 adolescents from the NZC group reported having multiple (at least two) main ethnicities. Seventy-seven adolescents from the NZE group identified New Zealand European as their primary ethnicity, with the remaining nine adolescents reported other European background as their primary ethnicity (e.g., Australian, English and other European). For the NZC group, 69 of them identified Chinese as their primary ethnicity, four had other Asian cultures as their primary ethnicity (e.g., Taiwanese, Singaporean, and Colonial Chinese), and 10 had New Zealand European as their primary ethnicity. Therefore, two MEIM scores were produced to indicate participants' ethnic identity. One was based on those who identified their primary ethnicity as either NZE ( $N = 77$ ) or NZC ( $N = 69$ ), and the other one was based on

adolescents who had either European as their primary ethnicity ( $N = 84$ ) or Asian ( $N = 74$ ). These two scores were almost identical to each other,  $M = 3.26$ ,  $SD = .80$  and  $M = 3.31$ ,  $SD = .79$  respectively. Therefore, the MEIM score which was based on European and Asian ethnicity was used in the following analyses.

An ANOVA showed no main effect of age, gender, or culture on the average ethnic identity score, nor were there any significant interactions between these variables. Partial correlations were conducted between ethnic identity and narrative identity variables, controlling for narrative length. The only significant correlation was found between low point meaning-making scores and the MEIM,  $pr(149) = -.19$ ,  $p < .05$ , such that participants with stronger ethnic identity had lower meaning-making scores. No significant correlations were found between ethnic identity and either life satisfaction or depression,  $ps > .05$ . As a results, participants' MEIM scores were not considered in any of the following analyses.

### ***The Development of Life Narratives***

#### **Life Story Chapters**

Multivariate analysis of covariance (MANCOVA) was conducted to test the effects of culture, age, and gender on the structure and coherence of life story chapters, controlling for narrative length. Significant multivariate effects were followed up by univariate analyses. A main effect of culture was found for the number of chapters ( $F(1, 166) = 31.16$ ,  $p < .001$ , partial  $\eta^2 = .16$ ); NZE adolescents had more life story chapters ( $M = 4.83$ ,  $SD = 1.75$ ) than their NZC counterparts ( $M = 3.75$ ,  $SD = 1.14$ ). This main effect was further qualified by an interaction between culture and age,  $F(2, 166) = 4.40$ ,  $p < .05$ , partial  $\eta^2 = .05$ ; NZE adolescents in the two younger age groups (e.g., 12-14 years and 15-17 years) had more chapters than did their NZC counterparts

( $t(46) = 4.51$  and  $t(60) = 2.48$  respectively,  $ps < .05$ ). However, these cultural differences were not present for 18-21 year olds. A main effect of culture was also found for the number of chapters with specific memories,  $F(1, 166) = 11.21, p < .05$ , partial  $\eta^2 = .06$ ), such that NZE adolescents had more chapters with specific memories ( $M = 2.49, SD = 2.00$ ) than did NZC adolescents ( $M = 1.74, SD = 1.43$ ). In addition, there were no cultural differences when comparing the proportion of life period chapters and the proportion of chapters with specific memories.

There were age-related differences in chapter ending scores,  $F(2, 166) = 3.72, p < .05$ , partial  $\eta^2 = .04$ , the proportion of life period chapters,  $F(2, 166) = 4.50, p < .05$ , partial  $\eta^2 = .05$ , and the average chapter coherence score,  $F(2, 166) = 5.71, p = .004$ , partial  $\eta^2 = .07$ . Post-hoc Bonferroni tests showed that the significant difference for the proportion of life period chapters was found between the early and the late adolescent group, such that no one above the age of 18 organized their life story with event specific chapters, and only 6% of the chapters in the early adolescent group were event specific. The average chapter coherence score also showed a linear increase with age, such that early adolescents ( $M = 1.52, SD = .71$ ) scored significantly lower than those in the mid-adolescent group ( $M = 1.75, SD = .62$ ), who in turn scored significantly lower than those in the late adolescent group did ( $M = 2.17, SD = .61$ ).

### Single Event Narratives

#### *Descriptive statistics*

A series of independent-samples t-tests showed that there were no cultural differences in any of the narrative variables; therefore, these variables were collapsed between NZE and NZC to increase statistical power. Table 5.1 displays the mean scores

on the theme, developmental consequentiality (DC) and meaning-making (MM) scales for both low and turning point narratives.

Table 5.1

*Average Theme, Developmental Consequentiality and Meaning-Making Scores for Low Point and Turning Point Narratives*

|                    | Low Point |      | Turning Point |      |
|--------------------|-----------|------|---------------|------|
|                    | Mean      | SD   | Mean          | SD   |
| <i>Free-recall</i> |           |      |               |      |
| Theme              | 2.18      | .60  | 2.15          | .71  |
| DC                 | .24       | .59  | 1.26          | 1.00 |
| MM                 | .18       | .54  | 1.19          | 1.03 |
| <i>Overall</i>     |           |      |               |      |
| DC                 | 1.12      | 1.07 | 1.62          | .92  |
| MM                 | .98       | 1.01 | 1.60          | .92  |

*Note.* DC = Developmental Consequentiality, MM = Meaning-Making.

Both developmental consequentiality and meaning-making were scored twice: once for free-recall and again for the overall narrative included answers to the questions asked by the interview about each event. Paired sample t-tests showed that the overall DC and MM scores were significantly higher than that of free-recall for both events ( $ts$  ranged between 6.78 to 11.65,  $ps < .001$ ). Therefore, only the overall DC and MM scores were used in the following ANOVAs and regressions analyses, as they indicate participants' maximum narrative coherence potential. Low point and turning point narratives were analyzed separately to examine whether the relationship between narrative identity and well-being differed as a function of event type.

Paired-samples *t*-tests were conducted to test if the type of event (low vs. turning point) had an impact on narrative scores across the entire sample. Both developmental consequentiality and meaning-making scores were higher for turning point events compared with those for low point events,  $t(170) = 5.53$ ,  $p < .001$  and  $t(170) = 7.17$ ,  $p < .001$ , respectively. However, no such differences were found for theme scores between these two events.

To test whether the scores on these different measures of narrative coherence differed from each other within each event, separate repeated-measures analyses of variance were carried out for both low and turning point narratives. The results showed main effects of coherence type,  $F(2, 348) = 167.34$ ,  $p < .001$ , partial  $\eta^2 = .49$  for low point narratives, and  $F(2, 346) = 38.71$ ,  $p < .001$ , partial  $\eta^2 = .18$  for turning point narratives. Post-hoc Bonferroni tests showed that for low point narratives, theme scores were the highest, followed by developmental consequentiality and then meaning making, and these coherence scores were all significantly different from each other,  $ps < .05$ . For turning point narratives, theme scores were significantly higher than the other two, while there were no differences between developmental consequentiality and meaning-making scores.

As shown in Table 5.2, the three most common event types for the low point narratives were relationships, accident or injury, and personal development, and that for the turning point narratives were personal development, relationships, and leisure. Redemptive sequences were rarely mentioned in either low or turning point events (also shown in Table 5.2), and so this coding was not included in further analyses.

Table 5.2  
*Frequencies and (Percentages) of Low and Turning Point Event Types and Redemptive Sequences*

|                      | Low point  | Turning point |
|----------------------|------------|---------------|
| Relationship         | 133 (75.6) | 59 (33.9)     |
| Accident or injury   | 27 (15.3)  | 2 (1.1)       |
| Achievement          | 8 (4.5)    | 17 (9.8)      |
| Leisure              | 8 (4.5)    | 27 (15.5)     |
| Personal development | 10 (5.7)   | 80 (46.0)     |
| Immigration          | 7 (4.0)    | 18 (10.3)     |
| Redemptive sequences | 31 (17.6)  | 15 (8.6)      |

### *Main analyses*

Multivariate analysis of covariance (MANCOVA) was conducted to examine the effects of age and gender on variables associated with narrative coherence as indicators of narrative identity, namely *Theme*, *Developmental Consequentiality (DC)*, and *Meaning-Making (MM)* scores for both low point and turning point narratives, controlling for narrative length. Significant main effects were followed up with univariate tests, and these are presented in Table 5.3. The means and standard deviations of these variables for each age group are also presented in Table 5.3.

Table 5.3  
*Means and Standard Deviations of Indicators of Narrative Identity for Low and Turning Point Events*

| Age group                       |                  |           |                  |           |                              |           |
|---------------------------------|------------------|-----------|------------------|-----------|------------------------------|-----------|
|                                 |                  |           |                  |           |                              |           |
|                                 | EA               |           | MA               |           | LA                           |           |
| Variables                       | <i>M</i>         | <i>SD</i> | <i>M</i>         | <i>SD</i> | <i>M</i>                     | <i>SD</i> |
| <i>Low Point Narratives</i>     |                  |           |                  |           |                              |           |
| Theme                           | 2.00             | .60       | 2.17             | .59       | 2.31                         | .56       |
| DC                              | .60              | .86       | 1.10             | 1.05      | 1.56                         | 1.05      |
| MM                              | .42              | .81       | 1.03             | 1.05      | 1.36                         | .94       |
| <i>Turning Point Narratives</i> |                  |           |                  |           |                              |           |
| Theme                           | 1.91             | .76       | 2.17             | .70       | 2.35                         | .62       |
| DC                              | 1.11             | .91       | 1.81             | .86       | 1.85                         | .83       |
| MM                              | 1.18             | 1.05      | 1.66             | .84       | 1.89                         | .70       |
| ANOVA age group                 |                  |           |                  |           |                              |           |
|                                 | <i>F</i> (2,163) |           | Partial $\eta^2$ |           | Bonferroni test <sup>a</sup> |           |
| <i>Low Point Narratives</i>     |                  |           |                  |           |                              |           |
| Theme                           | 1.20             |           | .02              |           |                              |           |
| DC                              | 9.32**           |           | .10              |           | EA < LA: MA < LA             |           |
| MM                              | 12.61**          |           | .13              |           | EA < MA: EA < LA             |           |
| <i>Turning Point Narratives</i> |                  |           |                  |           |                              |           |
| Theme                           | 2.06             |           | .03              |           |                              |           |
| DC                              | 8.16**           |           | .09              |           | EA < MA: EA < LA             |           |
| MM                              | 5.92*            |           | .07              |           | EA < MA: EA < LA             |           |

*Note:* DC = Developmental Consequentiality, MM = Meaning-Making. EA = early adolescence, MA = middle adolescence, LA = late adolescence. \* $p < .05$ . \*\* $p < .001$ . <sup>a</sup> Significant differences between age groups are indicated by <.

Using Pillai's trace, there were significant effects of age on these single event narrative variables contributing to narrative coherence,  $V = .21$ ,  $F(12, 318) = 3.12$ ,  $p < .001$ , partial  $\eta^2 = .11$ . As seen in Table 5.3, main effects of age were found for developmental consequentiality and meaning-making scores for both low and turning point narratives, but not for the theme scores for these events. Post-hoc Bonferroni tests showed robust differences between early and middle adolescent groups, and between early and late adolescent groups, whereas no differences were found between middle and late adolescent groups. MANCOVA showed no main effects of gender on any of the narrative variables  $V = .04$ ,  $F(6, 158) = 1.19$ , ns, nor were there significant interactions between age and gender on any of the narrative variables.

Self vs. other ratios were calculated as the ratio of the number of emotions/evaluations attributed to the self over the number of emotions/evaluations attributed to others. Thus, a ratio greater than 1 indicates that more emotions/evaluations were attributed to the self than attributed to others, whereas the opposite pattern is suggested by a ratio smaller than 1. Given that participants were asked to indicate how they and others felt for the low and turning point events, how they described the events during free-recall is a better indicator of their spontaneous focus on self and others. Given that past research has shown cultural differences in autobiographical memories in terms of the ratio between references to the self and others (Wang, 2001a), the emotional content during participants' free-recall was analyzed to investigate any possible cultural differences in their life story narratives. A series of ANOVAs showed no main effect of culture on any of the emotion/evaluation ratios, indicating that there were no cultural differences in the likelihood of referring to other people's emotions and evaluations in NZC and NZE adolescents' life narratives.



In summary, the structure and coherence of life story chapters increased with age, as did the levels of meaning and the extent to which adolescents elaborated the changes in personality based on past experiences. Whenever there was an age-related difference, the biggest discrepancy was found between the early and late adolescent groups, suggesting developmental changes are occurring throughout the adolescent years with a possibly major shift in life story development towards the end of adolescent years. Very few cultural differences were found in variables associated with narrative identity development; NZC adolescents narrated coherent, meaningful accounts of their lives to the same degree as their NZE counterparts.

### ***Relationships between Life Story Narrative, Culture, and Well-Being***

#### **Preliminary analyses**

Table 5.4 shows the zero-order correlations between the different indicators of narrative identity. Notably, most of these narrative variables were weakly to moderately correlated with each other, suggesting internal consistency, but not complete overlap, between these different aspects of narrative identity across different types of events.

Table 5.4  
Zero-order Correlations among Narrative Variables

|                      | 1.    | 2.    | 3.    | 4.    | 5.    | 6.    | 7. |
|----------------------|-------|-------|-------|-------|-------|-------|----|
| 1. Chapter coherence | —     |       |       |       |       |       |    |
| 2. LP theme          | .37** | —     |       |       |       |       |    |
| 3. LP DC             | .24** | .38** | —     |       |       |       |    |
| 4. LP MM             | .14   | .17*  | .77** | —     |       |       |    |
| 5. TP theme          | .42** | .39** | .33** | .22** | —     |       |    |
| 6. TP DC             | .32** | .25** | .30** | .22** | .35** | —     |    |
| 7. TP MM             | .35** | .27** | .24** | .28** | .33** | .55** | —  |

Note. \* $p < .05$ , \*\* $P < .001$

Multivariate analyses of variance were conducted to investigate the effects of culture, age, and gender on adolescents' well-being. There were no main effects of gender and age; however, main effects of culture were found on both life satisfaction scores and depression,  $F(1, 165) = 8.51$ ,  $p < .05$ , partial  $\eta^2 = .05$ , and  $F(1, 165) = 10.57$ ,  $p < .05$ , partial  $\eta^2 = .06$ , respectively. Specifically, NZC adolescents reported lower levels of life satisfaction ( $M = 23.77$ ,  $SD = 5.66$ ) than did NZE adolescents ( $M = 26.19$ ,  $SD = 5.05$ ); NZC adolescents also reported higher levels of depression ( $M = 61.76$ ,  $SD = 11.72$ ) than did NZE adolescents ( $M = 55.63$ ,  $SD = 12.04$ ). There were no significant 2-way interactions between age and gender; however, a significant 3-way interaction was shown between culture, age, and gender for scores on the measure of depression,  $F(2, 165) = 5.43$ ,  $p < .05$ , partial  $\eta^2 = .06$ . There were no gender differences in the levels of depression for the NZC group, regardless of age group. However, for NZE adolescents aged between 15 and 17 years old, females ( $M = 62.94$ ,  $SD = 10.80$ ) reported higher levels of depression than did males ( $M = 49.73$ ,  $SD = 11.57$ ),

$t(29) = -3.29, p < .05$ ; whereas there were no gender differences for the other two age groups.

### Main analyses

Hierarchical regression analyses were carried out to investigate whether life story narratives predicted individuals' well-being and to explore whether culture moderated the relationship between narrative identity and well-being. This set of regression analyses was conducted in a sequence. First, a series of hierarchical regressions were conducted to determine any significant 3-way interactions between narrative, culture, and age in predicting well-being. Grand-mean centred variables and the associated interaction terms between narrative, age, and culture, were entered into the regression models to investigate the 3-way interactions. In all analyses, age was represented categorically using two dummy codes (with 12-14 years as the reference group), which allowed us to examine different patterns in age groups without *priori* assumptions of a linear effect of age.

Next, for narrative variables that yielded 3-way interactions with culture, the entire sample was divided into the two cultural groups (NZE and NZC), to examine relations between age, narrative identity, and well-being separately for each culture. Group-centred means and the interaction terms between these variables and age groups were used in the separate regressions for each culture. Significant 2-way interactions were followed up with simple slope computations, as recommended by Aiken and West (1991).

I first report regressions involving 3-way interactions to determine which narrative variables needed to be examined separately for each culture. I then present analyses addressing the question of whether narrative identity was related to

adolescents' well-being, and whether age moderates this relationship. Lastly, I report separate regression analyses to examine the links between narrative identity, age, and well-being for each culture.

#### The associations between culture, narrative, and age on predicting well-being

In the following regressions, culture, centred narrative and centred narrative length were entered in Step 1, followed by the two dummy variables for age group in Step 2. Two-way interactions between narrative and age group and between culture and age group were entered simultaneously in Step 3. Lastly, the three-way interactions between narrative, culture, and age group were entered in Step 4.

When predicting participants' satisfaction with life scores (SWLS), a significant three-way interaction between narrative, culture, and age was found when turning point developmental consequentiality score (TPDC) was used as the measure of narrative coherence,  $B = -3.28$ ,  $\beta = -.24$ ,  $t = -2.05$ ,  $p < .05$ . Marginal interactions were found for the average chapter coherence ( $B = -4.19$ ,  $\beta = -.19$ ,  $t = -1.85$ ,  $p = .066$ ), low point theme ( $B = -4.61$ ,  $\beta = -.21$ ,  $t = -1.97$ ,  $p = .051$ ), and turning point theme ( $B = -3.18$ ,  $\beta = -.17$ ,  $t = -1.78$ ,  $p = .076$ ). When predicting participants' levels of depression, a marginal three-way interaction was found between average chapter coherence, culture, and age,  $B = 8.64$ ,  $\beta = -.17$ ,  $t = 1.72$ ,  $p = .087$ . Therefore, separate regressions were conducted for each culture, when turning point developmental consequentiality, average chapter coherence, low point theme, and turning point theme were the main narrative coherence predictor in the model, with age group as the moderator, and life satisfaction as the outcome variable. When predicting depression, separate regressions were conducted when average chapter coherence was the main predictor. For the sake of brevity, I only

report analyses that showed significant effects (either main effect or interaction) in the following sections.

Age moderates the relationship between narrative identity and well-being

None of the regressions showed significant main effects of narrative variables in predicting well-being. However, several narrative variables showed significant interactions with age, as shown in Table 5.5.

Table 5.5  
*Significant Narrative by Age Interactions Predicting Well-Being*

|                            | Overall Sample |         |           |                       |                           |
|----------------------------|----------------|---------|-----------|-----------------------|---------------------------|
|                            | <i>B</i>       | $\beta$ | <i>p</i>  | <i>R</i> <sup>2</sup> | <i>F</i> for $\Delta R^2$ |
| <i>Regressing SWLS on:</i> |                |         |           |                       |                           |
| LPDC x Age1                | 1.46           | .17     | <i>ns</i> | .04                   | 2.65 <sup>^</sup>         |
| LPDC x Age2                | 2.64           | .32     | .02       |                       |                           |
| TPMM x Age1                | .81            | .08     | <i>ns</i> | .03                   | 2.01                      |
| TPMM x Age2                | 2.45           | .21     | .05       |                       |                           |
| <i>Regressing RADS on:</i> |                |         |           |                       |                           |
| LPDC x Age1                | -.44           | -.02    | <i>ns</i> | .11                   | 5.24*                     |
| LPDC x Age2                | -6.31          | -.34    | .01       |                       |                           |
| TPDC x Age1                | .83            | .03     | <i>ns</i> | .11                   | 5.18*                     |
| TPDC x Age2                | -6.81          | -.28    | .01       |                       |                           |

*Note.* \*  $p < .05$ , <sup>^</sup>  $p < .10$ . LPDC = low point event developmental consequentiality score; LPMM = low point event meaning making score; TPDC = turning point event developmental consequentiality score. Age1 = age group dummy variable 1 (early adolescence = 0, middle adolescence = 1, late adolescence = 0); Age2 = age group dummy variable 2 (early adolescence = 0, middle adolescence = 0, late adolescence = 1).

As shown in Table 5.5, the significant interaction between LPDC and age group caused a marginally significant change in  $R^2$  for the regression on satisfaction with life score. Although there was a significant TPMM by age group interaction, this did not increase the predictive power of the model for satisfaction with life. Both LPDC and TPDC significantly interacted with age to predict depression, and these interactions also yielded significant  $R^2$  changes for each model. The results indicate that age moderated the relation between developmental consequentiality scores and depression. These significant interactions were followed up with simple slope analyses (see Table 5.6).

Table 5.6  
*Simple Slope Values for Correlations between Narrative Variables and Well-Being*

|                    |                   | LPDC  |          | TPMM  |          |
|--------------------|-------------------|-------|----------|-------|----------|
| Well-being Measure | Age group         | Slope | <i>t</i> | Slope | <i>t</i> |
| SWLS               | Early adolescence | -1.91 | -2.00 *  | -.82  | -1.07    |
|                    | Mid adolescence   | -.46  | -.67     | -.005 | -.006    |
|                    | Late adolescence  | .73   | 1.10     | .63   | 1.67 ^   |
|                    |                   | LPDC  |          | TPDC  |          |
| RADS               | Early adolescence | 3.93  | 1.90 ^   | 3.59  | 1.84 ^   |
|                    | Mid adolescence   | 3.48  | 2.34 *   | .05   | .87      |
|                    | Late adolescence  | -2.38 | -1.66 ^  | -3.22 | -1.75 ^  |

Note. ^  $p < .10$ , \*  $p < .05$ .

For the overall sample, the simple slopes suggest that narrative identity predicted negative well-being outcomes when such a relationship first emerges in early and mid- adolescence. However, the relation between narrative identity and well-being is positive in late adolescence, such that variables indicating higher narrative identity

were related to higher life satisfaction and lower depression. Nevertheless, these results must be interpreted with caution, given that most of the slopes were only marginally significantly different from zero.

#### Cultural differences in the relationships between narrative identity, age, and well-being

As mentioned earlier, average chapter coherence score, low point theme score, turning point theme score, and turning point developmental consequentiality scores all yielded marginal or significant 3-way interactions, indicating that culture could be another moderator of the relationship between narrative, age, and well-being. Regressions involving the above narrative variables as the main predictor for well-being were conducted separately for each culture; again two dummy codes were used instead of chronological age with the early adolescent group as the reference group. Main effects of narrative were examined first, followed by the interactions between narrative and age group.

There were no main effects of average chapter coherence, turning point theme, or turning point development consequentiality on life satisfaction score for either culture; nor was there a significant main effect of average chapter coherence on depression score ( $ps > .05$ ). However, there was a main effect of low point theme on life satisfaction ( $B = -2.22$ ,  $\beta = -.27$ ,  $t = -2.32$ ,  $p < .05$ ) for the NZE group, but not for the NZC group. These results suggest that, regardless of age, NZE adolescents whose low point narratives were higher on the theme scale tended to have lower scores on the satisfaction with life scale.

Regression coefficients for the interaction terms between narrative and age are shown in Table 5.7 (for NZC participants) and Table 5.8 (for NZE participants). For both cultures, there was a significant interaction between turning point DC and age, and

these interaction terms were followed up with simple slope analyses. No significant interactions were found between other narrative variables and age.

Table 5.7

*Significant Narrative by Age Interactions on Well-being for NZC Adolescents*

|                            | <i>B</i> | $\beta$ | <i>p</i>  | $R^2$ | <i>F</i> for $\Delta R^2$ |
|----------------------------|----------|---------|-----------|-------|---------------------------|
| <i>Regressing SWLS on:</i> |          |         |           |       |                           |
| AveCC x Age1               | 4.39     | .31     | .07       | .06   | 2.18                      |
| AveCC x Age2               | 3.97     | .29     | .10       |       |                           |
| LP_Theme x Age1            | 3.01     | .20     | <i>ns</i> | .04   | 1.12                      |
| LP_Theme x Age2            | 4.89     | .33     | <i>ns</i> |       |                           |
| TP_Theme x Age1            | 4.77     | .39     | .06       | .06   | 2.14                      |
| TP_Theme x Age2            | 5.24     | .33     | .07       |       |                           |
| TPDC x Age1                | -5.36    | -.40    | .006      | .10   | 4.07 *                    |
| TPDC x Age2                | -1.25    | -.72    | <i>ns</i> |       |                           |
| <i>Regressing RADS on:</i> |          |         |           |       |                           |
| AveCC x Age1               | -6.79    | -.23    | <i>ns</i> | .05   | 1.03                      |
| AveCC x Age2               | -3.98    | -.14    | <i>ns</i> |       |                           |

*Note.* \*  $p < .05$ . AveCC = average chapter coherence score; LP\_Theme= low point theme score; TP\_Theme = turning point theme score; TPDC = turning point event developmental consequentiality score. Age1 = age group dummy variable 1 (early adolescence = 0, middle adolescence = 1, late adolescence = 0); Age2 = age group dummy variable 2 (early adolescence = 0, middle adolescence = 0, late adolescence = 1).



Table 5.8  
*Significant Narrative by Age Interactions on Well-being for NZE Adolescents*

|                            | <i>B</i> | $\beta$ | <i>p</i>  | $R^2$ | <i>F</i> for $\Delta R^2$ |
|----------------------------|----------|---------|-----------|-------|---------------------------|
| <i>Regressing SWLS on:</i> |          |         |           |       |                           |
| AveCC x Age1               | -1.97    | -.13    | <i>ns</i> | .05   | .80                       |
| AveCC x Age2               | .83      | -.07    | <i>ns</i> |       |                           |
| LP_Theme x Age1            | -2.32    | -.16    | <i>ns</i> | .09   | .81                       |
| LP_Theme x Age2            | .18      | .01     | <i>ns</i> |       |                           |
| TP_Theme x Age1            | -2.00    | -.14    | <i>ns</i> | .04   | .61                       |
| TP_Theme x Age2            | -1.26    | -.11    | <i>ns</i> |       |                           |
| TPDC x Age1                | -3.24    | -2.00   | .05       | .11   | 3.59*                     |
| TPDC x Age2                | -4.23    | -2.65   | .01       |       |                           |
| <i>Regressing RADS on:</i> |          |         |           |       |                           |
| AveCC x Age1               | 6.51     | .18     | <i>ns</i> | .09   | 1.80                      |
| AveCC x Age2               | -3.41    | -.11    | <i>ns</i> |       |                           |

*Note.* \*  $p < .05$ . AveCC = average chapter coherence score; LP\_Theme= low point theme score; TP\_Theme = turning point theme score; TPDC = turning point event developmental consequentiality score. Age1 = age group dummy variable 1 (early adolescence = 0, middle adolescence = 1, late adolescence = 0); Age2 = age group dummy variable 2 (early adolescence = 0, middle adolescence = 0, late adolescence = 1).

Figure 5.1 shows the simple regression lines for each age group when regressing life satisfaction on turning point developmental consequentiality for the NZC group, and that for the NZE group are shown in Figure 5.2. Individual slope values are shown in Table 5.9.

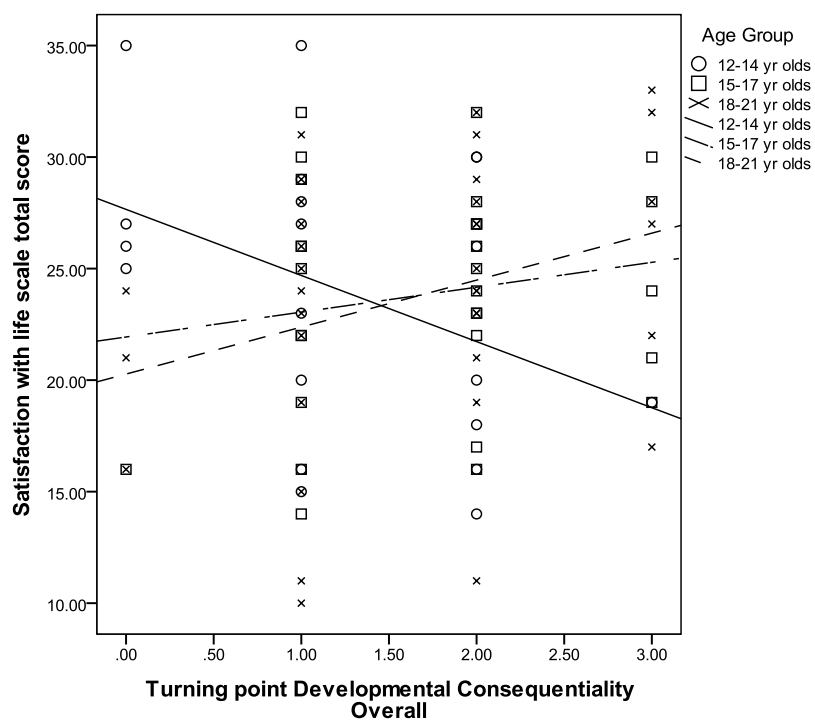


Figure 5.1. Simple regression lines for three age groups from NZC adolescents.

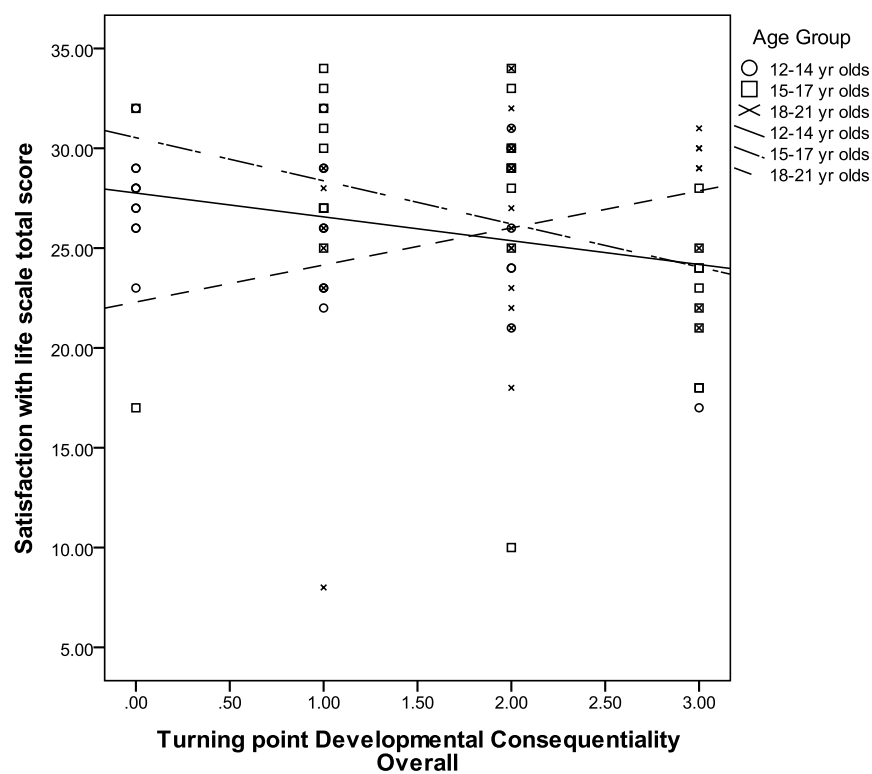


Figure 5.2. Simple regression lines for three age groups from NZE adolescents.

Table 5.9  
*Simple Slope Values for Regressions of Satisfaction with Life on Turning Point Developmental Consequentiality Score*

| Age group          | NZC   |          | NZE   |          |
|--------------------|-------|----------|-------|----------|
|                    | Slope | <i>t</i> | Slope | <i>t</i> |
| Early adolescence  | -3.00 | -1.97 *  | -1.11 | -1.21    |
| Middle adolescence | 1.10  | .83      | -2.10 | -2.23 *  |
| Late adolescence   | 2.35  | 2.06 *   | 2.13  | 1.64     |

*Note.* \*  $p < .05$

Simple slope analyses revealed cultural differences in the moderating effect of age on the relationship between narrative identity and well-being. For the NZC group, higher turning-point developmental consequentiality scores predicted lower life satisfaction scores for the early adolescent group. However, such a relationship was positive for the older groups, and this positive association reached significance for the late adolescent group. Compared to the NZC group, the link between narrative identity and well-being for the NZE group emerged at a later age, but a similar trend was obtained. For the NZE group, turning point developmental consequentiality only started to predict well-being from the middle adolescent group. Again, narrative identity was predicting lower life satisfaction when this link was first established, and while this association was positive for the the late adolescent group, it failed to reach significance.

### Regressions of well-being on narrative and trait personality

A MANOVA was conducted on the 5 personality traits to see if they differed as a function of age, culture and gender. Significant multivariate effects were followed up with univariate analyses. A significant effect of gender was found for agreeableness,  $F(1, 166) = 8.42, p < .05$ , partial  $\eta^2 = .05$ , such that females had slightly higher agreeableness scores ( $M = 3.87, SD = .64$ ) than did males ( $M = 3.62, SD = .62$ ). Significant effects of culture were found for all five personality traits, and Table 5.10 shows the average scores on each personality trait for both cultures. Univariate ANOVAs showed that NZE adolescents had higher scores on openness, conscientiousness, extraversion and agreeableness than their NZC counterparts, whereas NZC adolescents had slightly lower neuroticism scores than did NZE adolescents. There was no main effect of age on any of the personality traits, nor were there any significant interactions between age and culture.

Table 5.10  
*Means and (Standard Deviations) of Personality Traits*

|                   | NZE  |       | NZC  |       | F(1,166) | Partial $\eta^2$ |
|-------------------|------|-------|------|-------|----------|------------------|
| Openness          | 3.76 | (.50) | 3.48 | (.67) | 7.68*    | .04              |
| Conscientiousness | 3.44 | (.69) | 3.14 | (.63) | 8.95*    | .05              |
| Extraversion      | 3.55 | (.63) | 3.13 | (.67) | 14.26**  | .08              |
| Agreeableness     | 3.84 | (.54) | 3.69 | (.57) | 4.41*    | .03              |
| Neuroticism       | 3.03 | (.74) | 2.76 | (.74) | 5.55*    | .03              |

*Note.* \*  $p < .05$ , \*\*  $p < .001$ .

One of the research questions was whether life story narratives predicted well-being above and beyond trait personality, and whether such a relationship differed

across cultures. In order to reduce the number of regressions that we needed to conduct, traits were first correlated with both well-being measures for the entire sample, and again separately for each culture. For the entire sample, all traits were significantly correlated with well-being in the expected direction, such that conscientiousness and extraversion predicted positive well-being whereas neuroticism predicted negative well-being ( $r$ s ranged from .42 to .69,  $p$ s < .09). However, separate correlations conducted for each culture showed that extraversion did not significantly correlate with well-being for NZC, and it was only weakly correlated with depression for NZE ( $r = .30$ ,  $p < .05$ ). Past research (e.g., Hayes & Joseph, 2003) has suggested that conscientiousness and neuroticism are better predictors for life satisfaction compared to other personality traits, and these traits also showed the highest correlations with well-being, as measured by the SWLS and RADS, in the current sample. Therefore, only neuroticism and conscientiousness were further examined in the following regression, which compared the unique contributions of trait personality and narrative identity to subjective well-being.

For the overall sample, the interaction between low-point developmental consequentiality (LPDC) and age was found to produce the biggest change in  $R^2$  when predicting depression. This interaction was marginally significant when predicting life satisfaction. Therefore, the interaction between LPDC and age was selected to compare against both neuroticism and conscientiousness to find out whether narrative coherence still interacted with age, after controlling for these personality traits. Since narrative length did not predict well-being in the previous analyses, it was not included in the following regressions.

Similar to earlier regression models, LPDC was entered in Step 1 followed by the two dummy-coded age variables. Personality was entered in Step 3, and age by LPDC interactions were entered in Step 4. It was shown (see Table 5.11) that both conscientiousness and neuroticism were significant predictors of well-being when entered alone, but the effects were in the opposite direction.

Table 5.11  
*Regressions of Satisfaction with Life on LPDC and Traits for the Overall Sample*

|                                  | <i>B</i> | $\beta$ | Adj. $R^2$ | F for $\Delta R^2$ |
|----------------------------------|----------|---------|------------|--------------------|
| <i>Model 1 – predicting SWLS</i> |          |         |            |                    |
| Conscientiousness                | 2.68**   | .33     | .10        | 20.62**            |
| LPDC x Age1                      | 1.40     | .16     | .11        | 1.84               |
| LPDC x Age2                      | 2.11     | .26 ^   |            |                    |
| <i>Model 2 – predicting SWLS</i> |          |         |            |                    |
| Neuroticism                      | -2.91**  | -.40    | .13        | 29.74**            |
| LPDC x Age1                      | 2.12 ^   | .24     | .15        | 2.34 ^             |
| LPDC x Age2                      | 2.13 *   | .26     |            |                    |
| <i>Model 3 – predicting RADS</i> |          |         |            |                    |
| Conscientiousness                | -7.03    | -.38**  | .18        | 35.62**            |
| LPDC x Age1                      | -.18     | -.01    | .21        | 3.49*              |
| LPDC x Age2                      | -4.66    | -.26*   |            |                    |
| <i>Model 4 – predicting RADS</i> |          |         |            |                    |
| Neuroticism                      | 11.16    | .69**   | .47        | 147.51**           |
| LPDC x Age1                      | -2.91    | -.15    | .48        | 2.39^              |
| LPDC x Age2                      | -4.09    | -.23*   |            |                    |

Note. ^  $p < .10$ , \*  $p < .05$ , \*\*  $p < .001$ .

When entered into models after personality trait, not all narrative by age interactions resulted in a significant change of  $R^2$  for the model. However, in the model where conscientiousness was a significant predictor of depression, there was still a significant change of  $R^2$  when LPDC by age interactions were entered in the final step. This suggests that narrative identity explained variance above and beyond conscientiousness in predicting well-being. However, this pattern did not hold for all narrative variables, and this association was only significant when depression scores were used as the outcome measure of well-being.

Given that there was a significant three-way interaction between turning point developmental consequentiality (TPDC), culture, and age on life satisfaction, separate regressions were carried out to examine if culture also moderates the relation between narrative and personality in the prediction of well-being. Consistent with findings from the overall sample, conscientiousness predicted positive life satisfaction and neuroticism predicted negative life satisfaction for both cultures (the absolute values of  $B$  ranged from 2.07 to 2.92,  $ps < .05$ ). When both conscientiousness and TPDC were entered into the regression model to predict life satisfaction, only in the NZC group were there significant TPDC by age interactions ( $Bs = -4.47$  and  $-5.16$ ,  $ps < .05$ ), whereas marginal TPDC by age interactions were found for the NZE group ( $Bs = -2.67$  and  $-2.53$ ,  $ps < .10$ ). Similarly, only for the NZC group was there a significant change of  $R^2$  when TPDC by age interactions were entered into the model, in which neuroticism was already a significant negative predictor of well-being,  $F(2, 79) = 4.68$ ,  $p < .05$ . In contrast, the TPDC by age interactions did not predict life satisfaction over and beyond neuroticism for the NZE group.

## **Discussion**

The current work addressed the development of narrative identity and its connection to psychological well-being in New Zealand European (NZE) and New Zealand Chinese (NZC) adolescents. Previous literature has not investigated these associations cross-culturally. The structure and coherence of life narratives, measured both in life story narratives and specific life events, increased with age. Very few cultural differences appeared in these narratives, however. Instead, narrative coherence predicted psychological well-being, and this relationship was moderated by age and culture. With regard to the moderation effect of age, the extent to which adolescents reflected on changes in their personality as a function of past experiences, measured by the developmental consequentiality scale (DC; adapted from Habermas & de Silveira, 2008) predicted lower well-being in early adolescence, but this association was positive in the late adolescent group. Culture further moderated the connections between age, narrative, and well-being. Specifically, the positive link between narrative identity and well-being emerged at an earlier age for NZC adolescents than for NZE adolescents.

### ***The Development of Life Narratives***

#### Coherence of life story and single event narratives

Age-related increases were found on variables associated with life story structure and coherence. All participants above the age of 18 structured their life stories based on life period chapters, whereas 94% of life chapters were based on life period in the early adolescent group (12-14 years old). Older adolescents (18-21 years old) were also more likely to spontaneously end their life stories with an outlook into the future. With increasing age, adolescents received higher scores for overall narrative coherence.



Higher narrative coherence required the integration of different life experiences into overarching themes to represent how the narrators perceived themselves as people. Specifically, narrative coherence was achieved in several ways: by elaborating on the emotional and evaluative aspects of the past, providing signs of self-reflection, relating the past to the current self and by extending event-self connections to other aspects of their biography.

Instead of using a microanalytic coding scheme to capture the development of a single type of narrative coherence as suggested by Habermas and Bluck (2000), this study took a general approach to capturing the coherence of life narratives. Specifically, our coding scheme for life chapters broadened the concept of narrative coherence by coding for adolescents' ability to actively connect different episodes in their lives in order to explain how past experiences had shaped them into who they are in the present. Unlike Habermas and de Silveira (2008), in which adolescents' narration of life stories was highly structured, the current study employed the Emerging Life Story Interview (ELSI; Reese et al., 2010, adapted from McAdams, 1996) to elicit adolescents' life stories. The ELSI is similar to McAdams' (1996) life story interview, such that no specific instructions were given about the structure and content of life stories; therefore the narratives represent adolescents' own perceptions of their lives without any scaffolding. The current findings are consistent with previous research using different methods arguing that the indicators of narrative coherence first appear in early adolescence. Together with previous work, the current study also indicates that the ability to produce coherent, meaningful life narratives continues to develop into late adolescence (Habermas & Bluck, 2000; Habermas & de Silveira, 2008).

Unlike Study 1 in which no age-related increases were found with regard to children's ability to draw meaning from life-changing events, Study 2 showed robust age-related increases in narrative coherence for both low point and turning point events. These age-related increases occurred particularly for scores on the meaning-making (MM) and developmental consequentiality (DC) scales; both scales are related to the establishment of causal coherence. By definition, MM captures the lessons or insights that adolescents gain from past events, whereas DC focuses on the extent to which adolescents use past experiences to explain changes in their personality or self-concept. Nevertheless, they both require the narrator to make explicit references to how the past is related to the present life, implying causal links between them. For both DC and MM, most of the developmental differences were found between the early and mid-adolescence groups. These findings are consistent with the developmental trend of narrative coherence found in previous research (e.g., Habermas & de Silveira, 2008; McLean & Breen, 2009), and lend further empirical support for Habermas and Bluck's (2000) claim that causal coherence develops between the ages of 12 and 16.

In contrast, no age-related increases were found on theme scores for either type of life event. Although not at ceiling, with a maximum score of 3, most of the scores were in the range of between 2 and 2.5, suggesting that adolescents might have already reached a plateau in terms of the ability to stay on-topic and to elaborate on details when narrating an event. In other words, starting from 12 years of age, adolescents are capable of producing narratives that involve some degree of expansion and development of the topic. They also exhibit the ability to introduce resolutions and to integrate other autobiographical experiences into their narratives. Thus, their ability to provide elaborated and resolved single event narratives precedes their ability to draw meaning from these events and to connect these events to former selves.

### Cultural differences in life stories

Past research suggests that culture influences people's cognitive processing and self-construal, which in turn contribute to cultural variation in the content and structure of autobiographical memory (Markus & Kitayama, 1991; Wang, 2001a). Given that autobiographical memories are the basic elements of life stories, it was expected that the structure and content of people's life stories also differ across cultures. Contrary to this expectation, very few cultural differences appeared in the structure and coherence of life stories. One exception was that NZC adolescents narrated fewer chapters and had fewer life period chapters than did NZE adolescents. Furthermore, age moderated the impact of culture on the number of chapters, such that NZE adolescents aged between 12 and 16 reported more chapters than did NZC adolescents, whereas there were no cultural differences between the 18- to 20-year olds. These findings in the chapter task are consistent with Wang's (2009) findings that Asians tend to take a holistic approach with regard to information processing. In other words, Asians are more likely to look for similarities between events in order to perceive them in chunks, as demonstrated by their tendency to recall more general, as opposed to specific memories (Wang, 2001a).

Furthermore, the fact that all interviewees chose to speak in English may have triggered NZC adolescents' independent views of self. This priming in turn may have resulted in the recall of specific, emotionally laden and self-focused memories, thus narrowing the differences between NZC and NZE adolescents' narratives. Previous research has successfully demonstrated the use of language as a powerful prime to manipulate the personal/social focus of people's self-concept (e.g. Ross et al., 2002; Wang, 2008). Indeed, NZC adolescents were as likely to provide emotional and

evaluative information about themselves as about others, further confirming the idea that their Western cultural belief system was in place during the interview. In addition, all our participants volunteered to share intimate details about themselves with an unfamiliar person, highlighting how unique they were as human beings; an act that is uncommon in interdependent societies which promote relatedness to others. It is possible that the NZC participants have immersed themselves into the mainstream New Zealand society which is predominantly European and independence-orientated. Therefore, in the current interview condition, NZC participants were as likely as their NZE counterparts to express the independent side of their self-concept which was reflected in the content of their recollection of personal past.

### ***Narrative Identity and Well-Being: A Cross-Cultural, Developmental Perspective***

#### **Age as a moderator of the relationship between narrative identity and well-being**

One objective for Study 2 was to explore the possibility that age could moderate the relationship between narrative coherence and well-being, given that coherent life narratives have been associated with positive well-being for adults (Baerger & McAdams, 1999), whereas advanced narrative processing has been negatively correlated, or sometimes uncorrelated with well-being for adolescents (McLean et al., 2010; Reese et al., 2010). Even though there were no main effects of narrative processing on either well-being measure, regression models based on the overall sample did show significant interactions between narrative and age in predicting well-being. Although all narrative variables were moderately correlated with each other, only DC and MM scores of low and turning point events significantly interacted with age, suggesting certain kinds of narrative processing could be more relevant to individuals' well-being than others. Regardless of culture, low point DC scores

significantly predicted lower satisfaction with life in early adolescence and higher (although not necessarily clinical) levels of depression in middle adolescence. Similar patterns with marginal effects were also found for turning point MM and DC scores. So far, this study suggests that higher levels of narrative identity could possibly be detrimental for young adolescents. However, the positive associations between narrative identity and well-being are more likely to appear by late adolescence, consistent with previous findings with adults. Why might this be the case?

First, it is possible that young adolescents have not yet developed the necessary cognitive tools to fully understand the meanings of their past experiences in relation to their developing self-concept, given that a mature narrative identity is not formed until late adolescence (McAdams, 1996; Habermas & Bluck, 2000). According to Marcia's (1966) identity status model, young adolescents, who are still seeking the appropriate values and ideologies to form an identity, are likely to be in the identity diffusion status, which is associated with negative psychological well-being (Marcia et al., 1993; Waterman, 2007). Similarly, by engaging in narrative meaning-making or searching actively for changes in their self-concept or personality as a result of significant life events, the answers that adolescents found may be unpleasant or even contradictory to their current view of self. Trying to figure out what kind of person they wish to become is already cognitively demanding for most adolescents, and seeing the changes in self but not having the ability to comprehend the long-term consequences of such changes might be extremely unsettling and stressful. However, given the correlational nature of the current investigation, such results do not imply causality from narrative identity to well-being. It is also possible that adolescents who are depressed are less likely to include redemptive sequences in their life stories: an important characteristic indicating a mature and positive narrative identity (McAdams et al., 2001).

Second, some of the events that adolescents chose to narrate were quite severe or even traumatic (e.g., trying to commit suicide), and recounting these negative events could cause them to re-experience those negative emotions they felt at the time. Older adolescents may find narrating such unpleasant experiences easier to cope with, given that they have more life experiences to compare to and realize that life goes on despite some unfortunate events occurring. In contrast, young adolescents might find such narrations extremely unpleasant, especially when they have not had the chance to resolve the crisis. In both types of event narratives, there was low prevalence of redemptive sequences, which is the idea of finding something positive in a negative event. This pattern suggests that many participants may have still been dwelling on the negative aspects of their experiences and unable to resolve their negative feelings.

Furthermore, other research using an expressive writing intervention (Pennebaker, 1997; Pennebaker & Seagal, 1999), has shown health benefits for adults writing about traumatic experiences over a period of time. This paradigm has, however, also been associated with negative outcomes for young adolescents (Fivush, Marin, Crawford, Reynolds, & Brewin, 2007). Fivush and colleagues found that 9- to 13-year adolescents who wrote more about negative evaluations and included more causal-explanatory links in their narratives subsequently experienced higher levels of anxiety, depression, and other difficulties. As adolescents are still in the process of refining their narrative skills to create meaningful, causally coherent accounts of their personal past, some forms of adult scaffolding may be necessary to help them better understand and regulate negative emotions. Parental scaffolding could also reduce the potential detrimental impacts on adolescents' psychological well-being caused by narrating negative experiences (Fivush & Sales, 2006). The notion that age may moderate the impact of expressing negative emotions on children's was also found in Study 1B, in

which parents' attribution of children's negative emotions was associated with lower levels of self-esteem for girls in the middle childhood group, whereas a positive association was found between parents' negative emotion talk and girls' self-esteem in early adolescence.

#### Cultural variation in the associations between age, narrative and well-being

Several significant three-way interactions were found between culture, narrative and age, suggesting culture may further moderate the relationship between narrative and age in predicting well-being. Among these narrative variables, the strongest three-way interaction was found between culture, turning-point DC scores and age in the regression model predicting life satisfaction. Separate regression models were conducted for NZC and NZE adolescents, and these showed cultural variation in the timing of the positive link between narrative identity and well-being. For NZC adolescents, higher turning-point DC scores predicted lower life satisfaction for the early adolescence group; the opposite pattern was present for the late adolescent group, such that turning point DC scores were positively associated with life satisfaction. In contrast, turning point DC scores did not link to life satisfaction until mid-adolescence for the NZE group. However, a similar trend to that of the NZC group was found. Turning-point DC was negatively associated with life satisfaction when narrative first became connected to well-being in middle adolescence, and this correlation was positive but not significant in the late adolescence group.

Past research has consistently shown cultural differences in people's recollections of the personal past. For example, people from independent, predominately Western cultures recall earlier, more detailed and emotionally richer autobiographical memories than do those from interdependent, predominantly Asian

cultures (Wang, 2001a). Consistent findings like these give rise to the possibility that people from independent cultures are more likely to establish their personality and self-concept on the basis of their autobiographical memories. Therefore, narrative identity may become connected to individual well-being at an earlier age in independent cultures than in interdependent cultures. However, the present study showed the opposite pattern. The findings with the NZ Chinese sample indicated that people from interdependent cultures are more likely to integrate life stories into their sense of self at a younger age than those from independent cultures. Developmentally speaking, perhaps narrative identity is associated with people's well-being earlier for people from interdependent cultures, even though their memories tend to focus on general, routine-based events and often lack descriptions of emotions or evaluations, which potentially downplay the role that memory has in defining a unique self. As a first cross-cultural investigation in the development of life story narratives, the current findings need to be replicated in other interdependent cultures.

Past research has identified three major functions for autobiographical memory: the social, directive, and self functions (Bluck et al., 2005). Different cultural belief systems define culturally specific self-construal and social norms, which in turn contribute to the differences in cognitive processing and further moderate the influence of autobiographical memory on the construction of self (Markus & Kitayama, 1991). Given that parent-child joint reminiscing serves as an important medium through which children learn to use narratives to represent mental states and later internalize the ability to produce coherent narratives about the past (Nelson, 1993; Nelson & Fivush, 2004), cultural differences are reflected in the style and function of parental scaffolding. For instance, Miller et al. (1997) compared the function of personal storytelling between American and Chinese families, and found that American families were more likely to



use storytelling as a means for increasing social bonding and entertaining purposes, whereas Chinese families were more inclined to use such an opportunity to teach moral lessons or to direct children's future behaviour.

As an interdependent culture, Chinese society emphasizes social harmony. Individuals are encouraged to consider how their actions could affect other people's feelings before carrying out any acts (Markus & Kitayama, 1991). In addition, parents' attitudes toward learning also differ between cultures. Specifically, American mothers may prefer to teach (or problem solve) in a relaxed, easygoing atmosphere that increases children's motivation in learning (e.g., talking about past events). In contrast, Chinese mothers may consider teaching as a serious matter and prefer a formal social setting where they insert more control over what and how their children are learning (Huntsinger, et al., 2000). Therefore, it is culturally appropriate for Chinese parents to use storytelling to demonstrate what could be learned from the past and how to adjust one's future behaviour accordingly. This style may encourage Chinese children to actively search for connections between past experiences and their current selves, which in turn may lead to cultural differences in the development of narrative coherence.

Different maternal reminiscing styles observed between Western and Eastern cultures also contribute to the differences in the function of past event reminiscing. When engaging in past event conversations with children, European-American mothers tend to adopt an elaborative style such that they are more likely to follow up their children's recalls with new pieces of information. These conversations are also more likely to have children as the central characters, and elaborative mothers tend to provide embellished accounts of children's internal states and evaluations. Chinese mothers, on

the other hand, are more likely to adopt a less elaborative, and more repetitive, reminiscing style. They tend to repeat the same questions until children offer them the correct answers and emphasize moral lessons and behaviour guidelines (Wang, Leichtman, & Davies, 2000).

Furthermore, whereas European American mothers tend to resolve negative feelings by reassuring children that it is ok to feel bad in negative situations and things will get better later on, Chinese mothers are more likely to resolve children's negative emotions in terms of teaching them moral lessons or how to properly regulate these negative emotions (Wang & Fivush, 2005). Being able to adequately resolve negative emotions may help individuals to find redemption in their life story, which is a prominent feature of a mature narrative identity and consequently leads to better well-being (McAdams et al., 2001). In the current study, cultural differences in the prevalence of redemptive sequences in adolescents' narratives were not addressed as these were relatively uncommon across both cultures. Nevertheless, it is still possible that Chinese mothers' scaffolding of how to resolve negative feelings facilitates their children to incorporate redemptions into their life stories. As a consequence, Chinese children may be able to use integrative life narratives to represent their sense of self at an earlier age than their European-American counterparts. This possibility should be explored in future research.

Wang and Conway (2004) have also demonstrated that compared to European American adults, Chinese adults are more likely to include reflective comments when recalling significant life events – an important cognitive process contributing to the search for meanings and insights from past experiences. American adults rated these personal memories as more self-relevant, whereas Chinese adults were more likely to

treat these memories as the basis for self-criticism and thus to direct future behaviours. The current study identified narrative meaning-making and the ability to establish causal links between past experiences and changes in personality as representations of a coherent narrative identity. Taken together, the above arguments are consistent with the current finding that life narratives become part of an individual's self-concept at an earlier age for NZC adolescents than that for NZE adolescents. These cultural variations may further explain why narrative identity became connected to well-being earlier for NZC than for NZE adolescents.

#### Personality traits and narrative identity in relation to well-being

McAdams (1993, 1996) proposed a three-level model to represent personality, consisting of basic personality traits (e.g. openness, conscientiousness, extraversion, agreeableness, and neuroticism) at level 1, personal concerns or characteristic adaptations at level 2, and an integrative life story at level 3. Unlike personality traits, which assess personality in a decontextualized context, life stories require people to organize various life episodes in coherent narratives in order to convey the significance of such experiences within certain social or personal contexts. Another drawback of the traditional approach to the study of personality traits is that it requires the assessor to have a good understanding of what constitutes as the norm for each trait. Such normative understanding can differ vastly between people within the same culture and also cross-culturally. Against this backdrop, and considering past research showing that life narratives explained more variance in well-being after controlling for dispositional traits (Bauer et al., 2005), it was hypothesized that narrative identity would be a unique predictor of individuals' well-being. In addition, life stories represent a person's identity with the consideration of contextual factors, such as social status and

interpersonal relationships. Consistent with self processing in interdependent cultures (Markus & Kitayama, 1991), the current study was set up to explore whether life narratives would predict more variance in well-being than personality traits, and this advantage of life narratives might be stronger among NZC adolescents than NZE adolescence.

Indeed, the current study supported this hypothesis by showing that, for the overall sample, the interaction between turning-point DC scores and age remained significant when predicting both life satisfaction and depression after controlling for conscientiousness and neuroticism. Furthermore, it was only for NZC adolescents that the interaction between turning point DC scores and age explained more variance in well-being than did dispositional traits, confirming the claim that life narratives could be a tool across various cultures to assess the highest level of personality: the meaning of people's lives.

Why is it critical to consider the surrounding social and personal context when trying to understand a person, especially for people from interdependent cultures as the current data have suggested? People from interdependent cultures tend to have a collective view of self, meaning that they tend to incorporate the social surroundings into their understanding of self, such as the relationships with others nearby and even the specific environmental setting. In contrast, people from independent cultures are more likely to take an individualistic approach to their self-understanding; this sense of self is often context independent, whereby their understanding of "I am who I am" remains stable despite changes in the immediate environment (Triandis, 1989). Research has shown that when people are required to provide 20 statements about themselves, people from Japan tend to give specific and concrete self-descriptions

(Kuhn & McPartland, 1954), whereas people from the United States were more likely to provide abstract and internalized traits to describe themselves (Cousins, 1989). However, the pattern reversed when Japanese participants were given specific social context in which they had to generate self-descriptions; then they were more likely than their U.S. counterparts to provide psychological traits and abstract information as their self-descriptions. In the current research, participants were asked about specific episodes in their life stories which were strongly associated with certain emotions. This may have prompted the NZC adolescences to find the purpose and meaning of their lives within a particular context to a greater extent than the NZE adolescents. Furthermore, the structure of the life story interview allows NZC adolescents to see themselves in a contextualized way, which is consistent with their accustomed approach of self-understanding. This setting may further encourage them to spontaneously explore the meaning in their lives, which is a better measure of their true personality than dispositional traits alone.

Nevertheless, the current findings by no means suggest that we should ignore personality traits completely, given that these traits consistently predict well-being. In comparison to the narrative approach of personality, questionnaire based instruments, such as the Big Five Inventory, are easier to administer and less time-consuming when it comes to interpreting the results. However, life narratives may represent people's identity to a greater extent than that of personality traits, especially in cultures where self-perception is closely linked and even defined by contextual information.

### ***Limitations and Future Directions***

In the current study, measures of narrative identity focused on adolescents' ability to develop causal coherence in life narratives, whereas Habermas and Bluck

(2000) identified four major kinds of narrative coherence that are essential for the construction of meaningful life narratives. Future studies should employ other measures to tap into the temporal, cultural biography, and thematic aspects of narrative coherence to extend the findings on the relationship between narrative coherence and psychological well-being. Although both MM and DC scales aim to capture the degree of causal coherence in life narratives, these scales showed different strengths in relation to predicting well-being. Specifically, DC appeared to be a better predictor of well-being compared to MM. This difference could be due to the fact that DC emphasizes the causal relationship between past experiences and the perceived changes in an individual's personality, whereas the meanings that one derives from the past could apply to either the narrator or to significant others. This subtle difference might enable DC to capture the essence of adolescents' self-concept linked to well-being, whereas MM be a better measure of adolescents' general understandings of how significant life events could change not only their own but also other people's lives. Therefore, future studies could address the question of how different kinds of narrative meaning-making, either directed at the self or at others, are connected to individual's well-being.

McAdams' (1993, 1996) life story interview outlined various components to capture a whole range of life narratives, including several nuclear life episodes, individuals' future life stories, and an overall life story theme. The current study has not addressed the issue of how adolescents project themselves into the future, or their ability to produce one or several overarching life story themes that feature continuously throughout their narrations of the past, present and the anticipated future self. According to Habermas and Bluck (2000), thematic coherence develops at a much later age than do the other kinds of coherence. It is therefore worth developing narrative measures to examine when in the lifespan people begin to develop thematically

coherent life stories, as well as when thematic coherence becomes connected to an individual's well-being. Furthermore, it would be interesting to examine how people's future life stories correspond to their previous lives. Is it possible that people who have consistent themes for both past and future life stories experience better well-being?

The current sample of NZC adolescents consisted of first- and second-generation immigrants to New Zealand, who should not be considered as representatives for people who are living in China with regard to their cognitive processing and views of the self. As an attempt to maintain a strong affiliation toward their country of origin, immigrant families might continue to follow the traditional cultural norms in their daily lives. However, people in China are facing an increasing exposure to globalization, which potentially increases their acceptance of Western ideologies, such as adopting individualistic views of the self. Indeed, Wang (2007) found that the content and structure of Chinese preschoolers' (3 years old) autobiographical memories were more similar to their American counterparts than to those of Chinese immigrant children in the U.S. However, Chinese immigrant children caught up with their American peers once they enter kindergarten and the acculturation process begins. In contrast, Chinese children start to behave in culturally appropriate ways once they start formal education. This, in turn, may result in changes to their cognitive processing and eventually result in their tendency to recall general, routine memories as opposed to the specific, episodic memories often recalled by Americans. Therefore, in future research it will be important to study a sample of resident Chinese adolescents in order to have a better understanding of how culture affects the construction of coherence life stories and how culture relates to an individual's well-being. It is also important to conduct the life story interview in participants' native

language to minimize the possible confounds caused by the priming effects of language on people's self-perception.

Lastly, the current study only captured the development of a narrative identity into late adolescence, which prevents us from generalizing the findings to other ages. Future studies involving older participants, or a follow-up investigation of the current pool of participants would shed more light on the developmental trajectory of life stories. Such attempt would also continue the investigation into when narrative identity begins to predict positive well-being among participants of NZ European descent.

### ***Conclusions***

The current study compared the development of life stories and their link to psychological well-being between NZC and NZE adolescents. Previous literature has not engaged in cross-cultural developmental research. Age-related increases in the structure and coherence of life narratives were found in both NZC and NZE participants. Age moderates the relationship between narrative identity and well-being, such that a mature narrative identity predicts negative well-being for adolescents aged between 12 and 14, whereas the reverse is true for participants in late adolescence. In addition, culture is another moderator for the relationship of narrative identity and well-being, such that life narratives become connected to well-being at an earlier age for NZC adolescents than for NZE adolescents. Furthermore, narrative coherence predicted unique variance in individuals' well-being over and above that of personality traits, and this effect was stronger for NZC adolescents than for NZE adolescents. In summary, the narrative approach to identity development can be qualitatively and quantitatively documented to capture the highest level of identity, namely the meaning of one's life to one's self. It is also a valuable tool to investigate cross-cultural differences with regard



to identity development in a contextualized way. After all, storytelling is a universal medium through which people learn about each other, as well as an essential way in which people reflect upon the meaning of their lives.

## Chapter 6

### General Discussion

Forming an identity is the central developmental task in adolescence (Erikson, 1968). Two approaches have been proposed to investigate the construction of identity. One is the traditional approach using questionnaire-based measures to capture identity such as identity status (Marcia, 1966) and personality traits (e.g., the Big Five Inventory; John & Srivastava, 1999). The other is the newly established approach using the life story to represent the highest level of a person's identity, which also conveys the meaning of his/her life (McAdams, 1985, 1996). Erikson (1968) proposed that a well-established, mature identity is related to an optimal sense of well-being. McAdams (1985, 1996) further argued that the coherence of the life story is one way of expressing one's narrative identity. Following these claims, studies on the construction of narrative identity have revealed links between life story coherence and individuals' well-being (Baerger & McAdams, 1999; McAdams et al., 2001; McLean & Breen, 2009; McLean et al., 2010).

In addition, life stories are formed on the basis of autobiographical memories, which are constructed within a particular sociocultural context. Evidence suggests that the structure and content of autobiographical memory differs as a function of both parental scaffolding and culture (McDonald et al., 2000; Mullen, 1994; Wang, 2001a, 2009; Wang & Fivush, 2005). This points to the possibility that the construction of the life story and its connection to well-being could also vary across cultures. Therefore, the present thesis took a developmental, cross-cultural perspective to investigate the formation of narrative identity and its relation to individuals' well-being from middle childhood to early adolescence: a crucial period for the construction of an identity.

### ***The Development of Life Story Coherence***

Although autobiographical memories are the building blocks for the life story, these memories need to be organized in a meaningful, coherent way in order to convey the meaning of one's life that represents a person's identity. Due to cognitive constraints and less social pressure to form an identity prior to adolescence, it is only from mid to late adolescence that people begin to successfully construct life stories in a meaningful and coherent way as part of their identity development (Habermas & Bluck, 2000). Habermas and Bluck classified four types of narrative coherence associated with a mature narrative identity, namely temporal, causal, thematic, and cultural coherence. Although recent research (e.g., Habermas & de Silveira, 2008; Reese et al., 2010) demonstrated that children as young as 8 years of age could produce life stories with some rudimentary signs of coherence, these narratives do not contain the same degree of sophistication, meaning, and coherence as adults' narratives.

In Habermas and de Silveira (2008), the narration of the life story was highly structured; children were asked to choose seven important life events to incorporate into the life story. Such an explicit request may have elevated young children's coherence scores by prompting them to find the connections between life events: a first step toward creating story coherence. In contrast, life story interviews conducted with adults do not contain any suggestions in relation to story structure and content (McAdams, 1996). This interview consists of several narrative tasks, each capturing a person's life with a particular theme, such as life story chapters, significant life events, and future life story. The present thesis investigated the development of life narratives in terms of life story chapters and significant life events (e.g., low- and turning-point events). Considering the methodological discrepancies in the literature and the need to use age-appropriate measures for younger participants, the Emerging Life Story

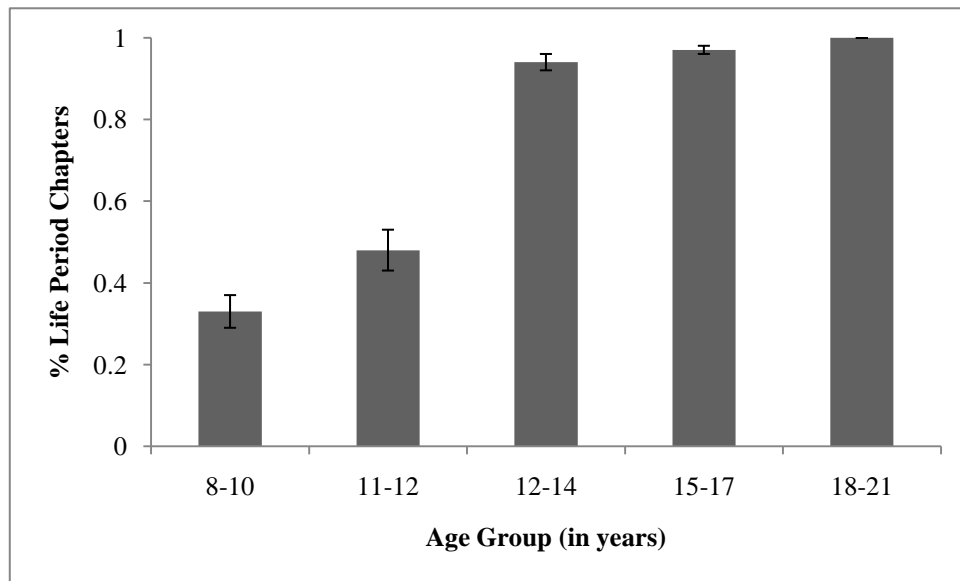
Interview (ELSI; Reese et al., 2010, adapted from McAdams, 1996) procedure was employed to examine the development of life stories in two separate samples. Study 1 was conducted in a sample of 8- to 12-year-olds, and Study 2 was based on a sample of adolescents aged between 12 and 21 years.

### Coherence of life story chapters

In accordance with McAdams' (1996) life story interview, the ELSI does not provide children with suggestions about story structure and content. However, certain guidelines were given to make sure that children understood the task and could complete the narration independently. For example, children always started the life story from the most recent chapter and most of them chose to narrate backward until reaching the very first chapter in their lives. Talking about the current life is less cognitive demanding compared to talking about earlier life stages; it also acts as a warm up process that helps children to get familiar with the task and facilitates their independent narration. Given Habermas and Bluck's (2000) theory arguing that coherent life stories do not exist until mid to late adolescence, Study 1A focused on narrative structures that contribute to narrative coherence. Structural elements included the number of life period chapters, whether the story followed a chronological order (as an indicator of temporal coherence), and whether the story contained first time experiences may contribute to cultural coherence (Berntsen & Rubin, 2004; Habermas, 2007; Habermas & Bluck, 2000; Rubin et al., 1986). In addition to story structure, Study 2 expanded on Study 1 by examining the coherence of life story chapters and the quality of story beginnings and endings in a group of older participants.

According to the self-memory system (SMS; Conway, 2005; Conway & Pleydell-Pearce, 2000), autobiographical memories and general event knowledge both

contribute to a person's *working self*, which is ultimately expressed through the life story that contains one or more overarching themes and is supported by memories from different life periods. Based on this theory, life period chapters are considered to be more developmentally advanced than event specific chapters, as these contain events that do not relate to each other thematically. Even though the present thesis only contains cross-sectional data, the age-related increases in the proportion of life period chapters found in Study 1A and Study 2 still shed light on the developmental trajectory of life story narratives. As shown in Figure 6.1, prior to age 12, children were more likely to organize their life stories based on event specific chapters. The tendency to narrate life period chapters increased linearly from early adolescence, and all participants above the age of 18 structured their life stories based on life period chapters. This finding suggests that the canonical narrative structure responsible for life story coherence emerges as early as middle childhood. However, it is only from early to mid adolescence that adolescents' life stories begin to show a similar level of maturity to that of adults' narratives in structure of their life stories (see Figure 6.1).



*Figure 6.1.* Proportion of life period chapters from middle childhood to late adolescence.

In contrast to Study 1, Study 2 revealed linear increases in the level of sophistication for story ending and overall life chapter coherence. With increasing age, adolescents were more likely to end their life stories with an outlook into the imagined future by introducing their future goals. There were also age-related increases in life chapters coherence scores; older adolescents were better at integrating past experiences into overarching themes. They were also more likely to elaborate on the emotional and evaluative aspects of the past and show signs of self-reflection by connecting the current self with past experiences. The chapter coherence score aims to capture causal and thematic coherence as suggested by Habermas and Bluck (2000), as it measures adolescents' narrative identity in terms of their ability to integrate past experiences into their self-concept. That is, to achieve coherence in the chapter task, they must connect past experiences to form overarching themes for the life story. Taken together, the current thesis suggests that, as early as middle childhood, children begin to construct their life stories with the canonical narrative structure. However, it is only from mid to

late adolescence that people begin to tell life stories that integrate the past, the present, and the anticipated future as a means to express their identity.

#### Coherence of single event narratives

Using Habermas and Bluck's classification, the development of a single dimension of narrative coherence (i.e., causal coherence) was examined through narratives about significant life events (e.g., low and turning point events). These events are also considered to be critical components of one's life story, and thus may indicate maturity in narrative identity, as people often engage in self-reflection to attribute meaning to the past (McAdams, 1996). Two scales were used to measure the degree of causal coherence, namely the Meaning-Making scale (MM; McLean & Pratt, 2006) and the Developmental Consequentiality scale (DC; adapted from Habermas and de Silveira, 2008). Although both measures required participants to derive causal links between past experiences and the current self, they each target a particular dimension of this causal relationship. For instance, MM captures adolescents' ability to find the meaning of their past experiences by engaging in self-reflection, and the lessons or insights could be meaningful for both the narrator and others. On the other hand, DC emphasizes the direct impact of past events on the narrator's personality, so it may be more relevant to self-concept than is MM. The DC is rated by how well a change in personality is explained by establishing elaborative causal links between personal past and the current self.

In Study 1A, MM did not differ as a function of age, but there were gender differences in the degree of MM. In other words, 8- to 12-year old children's ability to assign meaningful insights to their past experiences is still limited and remains stable during this period. On the other hand, the advanced meaning-making skills exhibited by

girls within this age range is consistent with gender differences found in the recall of autobiographical memories, such that girls' memories are longer, richer in emotions and evaluations, and include more cognitive processing words than that of boys (Bohanek & Fivush, 2010; Haden et al., 1997). In Study 2, age-related increases were shown in both MM and DC scores, whereas gender differences were no longer present. The finding that adolescents from the youngest age group (12- to 14-year-olds) had significant lower MM and DC scores than did adolescents from the two older age groups is consistent with prior research, suggesting that the ability to create causal coherence in life narratives is most likely to emerge in mid adolescence (Habermas & Bluck, 2000; Habermas & de Silveira, 2008). The absence of gender differences in MM and DC scores in Study 2 is also consistent with prior research in this age group, using the same scales as measures of identity development (e.g., Habermas & de Silveira, 2008; McLean & Breen, 2009). There are several reasons why the relationship between gender and narrative coherence might change with?

Prior research has shown conflicting results when examining the role of gender in the narration of life stories, particularly with regard to narrative complexity in terms of how well one makes the connection between past events and the subsequent changes in the self – a concept that both MM and DC are capturing. Recently, Grysman and Hudson (2010) collected narratives about important life events (e.g., low, turning, and high points in one's life) from a group of young adolescents (13- to 15-year-olds) and another group of emerging adults (18- to 22-year-olds), and compared these narratives in terms of narrative complexity and meaning-making. In this study, narrative complexity referred to the extent to which a person integrated multiple dimensions of the past such as emotional and evaluative information into a narrative, as well as introduced different perspectives to enrich the content of the narrative. Meaning was



coded as either no meaning, lesson learned, or gaining insight as per an earlier version of the meaning-making scale (McLean, 2005).

Although higher scores for meaning-making were found for females in both age groups, gender interacted with age on narrative complexity. Specifically, females scored higher for narrative complexity than did males in the early adolescence group, but such a difference was not present in the emerging adulthood group. Based on Grysman and Hudson's definition of narrative complexity, a highly complex narrative not only represents the richness of a person's memory recollection, it also illustrates his/her ability to find a common theme that connects various aspects of the past. This definition is similar to Habermas and Bluck's (2000) definition of thematic coherence of the life story. Given that the impact of gender on the construction of autobiographical memory varies depending on developmental goals that are defined by age (Fivush and Buckner, 2003), the same claim could be true for the construction of life narratives. Therefore, I argue that gender differences associated with narrative processing that contribute to life story coherence are more likely to occur in the early stages of adolescence, when behaving in line with gender specific expectations is more relevant to one's self-concept. The desire to establish a concrete, enduring sense of self becomes paramount in mid to late adolescence regardless of gender, thus gender-related differences in life story narratives gradually fade away among older adolescents.

#### Parent-child conversations, narrative coherence, and children's well-being

Nelson and Fivush's (2004) social cultural developmental theory proposes that multiple factors underlie the development of autobiographical memory, including language skills, cognitive skills (e.g., self-awareness, theory of mind), and parent-child interactions in the form of joint reminiscing about past events. This theory emphasizes

the importance of parental scaffolding on children's ability to organize their mental representations of the past into narratives: the typical way that people in most modern societies recall past events. During these parent-child joint reminiscing conversations, parents highlight aspects of the past that are worth remembering and demonstrate how to use narrative structures, as well as referring to children's emotions and offering evaluative information of the past to convey the meaning behind these experiences. By talking to parents, children then internalize these cognitive skills and later begin to use these narrative conventions to represent their past experiences (Haden et al., 1997).

Research has found that parental reminiscing styles differ based on the level of elaboration, that is, the likelihood that parents (mothers in particular) will offer new pieces of information to guide and follow up children's narrations (Fivush & Fromhoff, 1988; Reese et al., 1993). Indeed, prior research has consistently demonstrated a close link between maternal reminiscing style and children's recall of autobiographical memory, such that children of highly elaborative mothers come to recall their autobiographical memories in more detailed and coherent way than those of less elaborative mothers (see Fivush et al., 2006 for a review). However, the long-term links between children's autobiographical memory were only present for mothers and not fathers (Haden et al., 1997). Moreover, the emotional content of these conversations helps children to distinguish feelings and evaluations that are attributed to the self from others, thus facilitating the development of a subjective perspective: a developmental precursor to the ability to experience a continuous sense of self (Fivush, 1994, 2001; Nelson & Fivush, 2004). Specifically, the amount of emotions and evaluations that mothers provide in past event conversations and the way they explain these affective terms uniquely predicts pre-schoolers' self-knowledge and self-concept consistency, both concurrently and longitudinally (e.g., Bird & Reese, 2006; Welch-Ross et al.,

1999). The more mothers explain their children's emotions, especially children's negative emotions, the better children's well-being, as measured, for example, by higher levels of self-esteem (Reese et al., 2007). Given a lack of research on parent-child conversations during middle childhood and beyond, Study 1B investigated whether the beneficial effects of parent-child conversations would extend to children's ability to produce coherent life narratives and their well-being (i.e., self-esteem) in middle childhood and early adolescence.

In Study 1B, emotion talk was coded as the amount of emotions and evaluations attributed to the child by either the parent or the child. Children's narration of a life-changing event was coded for meaning-making, as an indicator of their ability to produce causal links within life narratives. Significant correlations were found between children's meaning-making scores and the amount of mother-child emotion talk; children scored higher on meaning making if they self-attributed a higher number of positive and negative emotions during these conversations. In addition, children's age and gender moderated this association, such that children's references to their own positive evaluations were positively correlated with boy's meaning-making skills in the middle childhood group. No significant correlations between emotion talk and meaning-making were found for boys in the early adolescence group and girls across the age groups.

Despite not detecting any significant correlations between parent-child conversations and the structure of children's life stories in the current thesis (e.g., the number of life period chapters and first time experiences), a recent study by Habermas, Negele, and Mayer (2010) revealed significant correlations between parental scaffolding during mother-child co-narration of the child's life and aspects of narrative

coherence in children and adolescents' (aged 8, 12, 16, and 20 years) independent recall of their life stories. Mothers scaffolded the construction of a particular aspect of narrative coherence prior to the developmental stage when children were capable of producing the same type of narrative coherence independently. For instance, mothers' references to temporal details of children's life stories peaked in co-narrations between mothers and their 8-year old children. Children's provision of temporal information in their independent narration of the life story peaked at age 12, coinciding with the age when temporal coherence is most likely to emerge in life narratives (Habermas de Silveira, 2008; Habermas & Bluck, 2000). This finding is also consistent with Vygotsky's theory of *zone of proximal development* (Vygotsky, 1978), suggesting that parents are most likely to scaffold specific cognitive skills that are on the verge of being internalized by their children; these skills tend to form the focal task of the next developmental stage children to encounter.

In Study 1B, however, parent-child conversations were limited to the co-narration of single life events (e.g., family holidays). This may have been an easier conversation for children to participate in than the co-narration of their entire life, and thus lowered the need for parents to demonstrate how to integrate various life episodes into a coherent story. Given discrepancies between the current research and the work of Habermas et al. (2010), future research should explore the cognitive load of tasks that are co-narrated to determine whether task complexity affects the associations between mothers' scaffolding and children's life story coherence. In addition, the association between parents' elaborative reminiscing more generally and children's ability to narrate coherent life stories should also be addressed in future research.

Study 1B also extended research on the link between parent-child emotion talk and children's well-being into middle childhood and early adolescence. This association was particularly strong between negative emotion talk and girls' well-being. Specifically, girls in the middle childhood group reported higher levels of self-esteem if their parents attributed fewer negative emotions to them, whereas the opposite pattern was found for girls in the early adolescence group. Although no links were found between emotion talk in joint reminiscing and boys' well-being in the current investigation, such associations may still depend on the type of emotion talk (e.g., emotion expression vs. emotion explanation) and also the type of events being discussed (e.g., positive vs. negative life events). The current study used family holidays as the topic of the conversations, which may have reduced the likelihood that parents and their children would talk about negative experiences. Further investigations are needed to explore the possibility that emotion explanations may associate with boys' well-being in middle childhood and early adolescence.

In summary, the present thesis shows that some rudimentary signs of narrative structure (which may be responsible for creating narrative coherence), emerge in children's narration of life stories as early as middle childhood and early adolescence. However, children in this age range are still developing the ability to integrate past experiences into their sense of self, in terms of their ability to draw insights from important life events and make explicit, meaningful connections between life events and changes in their personality. Girls' life narratives showed higher levels of coherence than boys' between the ages of 8 and 12, a time when children begin to understand the concept of the life story and start to make the connection between the meaning of life story and their self-concept. Parent-child conversations may also influence children's well-being and narrative processing when they are in this age range.

However, the current study was based on a single ethnic group and culture may also have an influence on these associations.

### ***The Associations between Culture, Age, Narrative Coherence, and Well-being***

Triandis (1989) suggested that there is cultural variation with regard to people's view of self in relation to others, which characterizes the distinction between individualistic and collective cultures. Specifically, people from individualistic cultures (i.e., Western cultures), on average, emphasize the importance of pursuing personal goals above the needs of others, whereas people from collective cultures (i.e., Eastern cultures), on average, are expected to place greater emphasis on achieving collective, group orientated goals in comparison to their personal goals. Markus and Kitayama (1991) further argued that such cultural differences also impact on people's self-construal, which is responsible for the differences found in people's cognitive, emotional, and motivational processing. People from individualistic cultures tend to have an independent self-construal, which encourages them to see the self as a unique entity from others. In contrast, people from collective cultures are more likely to exhibit an interdependent self-construal, emphasizing the integration of contextual factors such as social hierarchy and the surrounding social context into their sense of self.

In addition, different belief systems are associated with culturally-specific self-construals, and these are reflected in cross cultural differences in the structure and content of autobiographical memory and people's self-descriptions (MacDonald et al., 2000; Mullen, 1994; Wang 2001a, 2004). For instance, people of European descent recall earlier first memories compared to those of Asian descent. It may be the way that a culture values personal remembering as well as the way that people share memories with others (e.g., parent-child past event conversation) that contributes to such

differences (e.g., MacDonald et al., 2000; Mullen, 1994). In terms of self-description, Wang (2001a) found that European Americans are more likely to provide descriptions characterizing their private self (e.g., I am an optimistic person) whereas Asians are more likely to provide the collective aspect of the self (e.g., I am a good citizen). The nature of people's self-description was also associated with the content of their earliest memories, such that people who provided more private, as opposed to collective self-descriptions, were more likely to have specific, one-point-in-time first memories. Findings as such point to the close link between people's autobiographical memory, culture, and their sense of self (Fivush, 1994; Pillemer, 1998).

Furthermore, cross-cultural differences have been found in maternal reminiscing style and mothers' perception of the function of joint reminiscing. Both of these factors have long-term impacts on children's developing autobiographical memory. Additionally, the observed cross-cultural differences in these maternal factors lead to cross-cultural differences in children's self-concept, which in turn mirror cross-cultural differences found in adults' self-concept (Chae et al., 2006; Han et al., 1998; Kulkofsky et al., 2009; Fivush & Wang, 2005; Minami & McCabe, 1995; Mullen & Yi, 1995; Wang, 2001b, 2006; Wang & Leitchman, 2000). Given the consistent cultural differences associated with people's recollection of their personal past, a second objective of the present thesis was to investigate whether cultural differences also exist in the construction of coherent life stories in a group of New Zealand European (NZE) and New Zealand Chinese (NZC) adolescents.

#### Cultural differences in the structure and coherence of life stories

Contrary to prior research showing cultural differences in people's recall of a significant personal past, very few differences were found in the structure and

coherence of life stories between NZE and NZC adolescents. Specifically, there were no culture-related differences in the structure and overall coherence of adolescents' narration of their life story chapters, nor were there any differences in the coherence of single event narratives, measured by Theme (from the Naccs; Reese et al., in press), Meaning-Making (MM; McLean & Pratt, 2006), and Developmental Consequentiality (DC; adapted from Habermas & de Silveira, 2005). The only culture-related differences were found in the number of life story chapters and the number of life period chapters. This finding is consistent with the notion that people with interdependent self-construal (i.e., people from Eastern cultures) were more likely to encode information with less segmentation than those with independent self-construal (i.e., people from Western cultures; Wang, 2009). In other words, people with interdependent self-construal are more likely encode events that are similar to each other as a whole, often suggested by their tendency to recall general, rather than specific memories (Wang, 2001b).

In the current study, all NZC adolescents were fluent in both English and Chinese, yet they all chose to be interviewed in English. It is possible that speaking English triggered their independent self-construal, which in turn resulted in their self processing to be similar to that of their NZE counterparts (Ross et al., 2002; Wang, 2008). This argument is further supported by the finding that, when narrating low and turning point events, NZC adolescents were as likely to attribute affective terms (e.g., emotions and evaluations) to others as the NZE adolescents. This pattern contradicts prior research showing that Asians were more likely to mention the feelings and emotions of others relative to the self than European Americans, indicating individualistic self-construal may have been activated during memory recall (Wang & Conway, 2004).



Despite this discrepancy, the current findings that culture did not influence the coherence of life story narratives may suggest a universal function of autobiographical memory, that is, the self function (Bluck et al., 2005). Some research has shown similarities in this function across cultures. People from several cultures, for example, reported a large number of positive memories occurring between the ages of 15 and 30, a phenomenon referred to as the reminiscence bump (Rubin et al., 1986). The bump period also coincides with the emergence of identity and relates to the coherence of life stories (Berntsen & Rubin, 2004; Bohn & Berntsen, 2008, 2011). Therefore, it is possible that using the life story to represent the highest level of a person's identity could be a universal phenomenon, despite the fact that culture influences the content of autobiographical memory, as well as the personal versus social orientations of people's self-concept.

Given that the NZC adolescents in the present study were first- and second-generation immigrants, their self processing may differ from that of adolescents who reside in China. Even though it is highly possible that adolescents from China are also influenced by Western ideologies to a certain extent, their self processing is probably more influenced by the cultural norm of an interdependent self-concept. Therefore, it is critical for future research to collect life narratives from native Chinese adolescents in order to make to further explore cross-cultural differences in the structure and coherence of the life story.

#### Age and culture as moderators of the relationship between narrative coherence and well-being

Well-being can be classified as either hedonic or eudaimonic well-being (Ryan & Deci, 2001). The former is characterized as subjective well-being, such as life

satisfaction (Diener & Lucas, 1999). And the latter relates to psychological well-being, such as people's desire maximize their potentials by fulfilling their life goals (Ryan & Deci, 2001; Waterman, 1993). Certain aspects of life stories, such as a personal growth theme and redemptive sequences (i.e., the notion of finding something positive from negative experiences), are associated with well-being (Bauer et al., 2008; McAdams et al., 2001). However, the coherence of life narratives is more strongly related to eudaimonic rather than hedonic well-being in previous research (Bauer & McAdams, 2010).

Although higher levels of narrative coherence have been associated with positive well-being outcomes in adults (Baerger & McAdams, 1999), this positive association is not always present amongst adolescents, in whom sometimes narrative coherence is even negatively related to well-being (McLean & Breen, 2009; Reese et al., 2010). In the current study, narrative coherence, as indicated by adolescents' MM and DC scores of the low point event, predicted lower life satisfaction and higher levels of depression in the early adolescence group (aged between 12 and 14 years old). Despite not reaching significance for the overall sample, these same indicators of narrative coherence were instead associated with positive well-being among older adolescents (aged between 18 and 21). The current finding that age moderates the association between narrative coherence and well-being adds to the growing literature, suggesting that being able to narrate coherent life narratives may be linked to negative consequences for well-being, especially when adolescents are still developing the necessary cognitive skills to produce coherent life stories. In addition, adolescence is often seen as a transition period for the development of individual's well-being, such that many adolescents (especially females) experience decreases in well-being during this period, including lower levels of self-esteem and higher levels of depression

(Harter, 1998; Petersen, 1988; Richard et al., 2002). Together with the evidence showing that the expressive writing paradigm (Pennebaker, 1993; Pennebaker & Seagal, 1999) reduced adolescents' well-being (Fivush et al., 2007), it is worthwhile for clinicians to consider the potential detrimental effects of narrative therapy as an option to enhance adolescents' well-being, especially with regard to guiding them through difficult life experiences (Cashin, 2008; Cottrell & Boston, 2002).

In Study 2, a significant 3-way interaction between culture, turning point DC, and age was found in the regression model predicting adolescents' life satisfaction. Subsequent simple slope analyses revealed that, in addition to age, culture was another moderator of the relationship between narrative coherence and well-being. Consistent with findings based on the entire sample, higher levels of DC predicted lower life satisfaction for NZC adolescents in the early adolescence group, and this association was positive for NZC adolescents in the late adolescence group. Among NZE adolescents, however, the negative correlation between narrative coherence and life satisfaction emerged in mid adolescence, later than that for NZC adolescents. Even though the positive correlation between narrative coherence and life satisfaction observed for NZE adolescents in the oldest age group failed to reach the level of significance, this trend mirrored that of the NZC adolescents. Given the prior finding that narrative coherence is positively related to life satisfaction in adults of European background (Baerger & McAdams, 1999), the current study lends support for the claim that life story coherence relates to individuals' well-being across cultures. It also seems that the life story becomes an integral part of one's identity at an earlier age in NZC adolescents than NZE adolescents. This is possibly due to the fact that Chinese parents tend to scaffold the connection between past experiences and the self to a greater extent than do European parents, which in turn may contribute to the development of narrative

coherence. Future research is needed to extend this claim to other cultures, and also to make a direct link between parent-child co-narration of children's life stories and children's well-being.

### ***The Life Story as a Tool to Assess Identity***

As a contextualized measure, the narrative approach of identity captures the development of identity within a particular cultural context. In addition, a person's life story reflects not only his/her understanding of the self, but also indicates the meaning of his/her life by integrating past experiences and even the imagined future into the understanding of self (McAdams, 1995, 1996). Based on McAdams' (1996) 3-level model of identity suggesting that a person is best described with a combination of personality traits, characteristic adaptations, and the life story, McAdams and colleagues (e.g., Bauer & McAdams, 2010; Bauer et al., 2005) have subsequently demonstrated that the life story is indeed capturing the expression of the highest level of one's identity. Support for this claim comes from the finding that the life story explains unique variance in individuals' well-being than do personality traits (Bauer et al., 2005).

The present thesis expands McAdams and colleagues' claim from a cross-cultural perspective. It was revealed that adolescents' ability to draw connections between past events and changes in personality, evidenced in their DC scores, was a unique predictor of their life satisfaction and levels of depression than personality traits (e.g., conscientiousness and neuroticism). Culture further moderates this relation, as DC scores predicted significantly more variance in life satisfaction than did personality traits among NZC adolescents, whereas the advantage of DC over personality traits to predict life satisfaction was only marginal for NZE adolescents.

The current finding that the life story may be a better indicator of identity for NZC adolescents than are personality traits is not surprising, given that people who have predominantly interdependent self-construal often include contextual factors, such as social status and interpersonal relationships, as part of their identity (Markus & Kitayama, 1991). This finding corresponds to one of the advantages that the life story has over traditional measures of identity construction. Even though speaking English during the interview may have activated the independent view of NZC adolescents' bicultural self, the dynamics between life stories, personality traits, and well-being may reflect the fundamental nature of one's identity, which cannot be easily altered by external factors. Furthermore, the current thesis does not dismiss the use of personality traits as a measure of people's identity. Traditional measures, such as the Big Five Inventory, captures aspects of identity, such as personality, in a more explicit way than the Life Story measure.

### ***Implications and Conclusions***

Based on the findings of the present thesis, I propose that there are age- and culture-related differences in the development of narrative identity, as indicated by the coherence of life stories. The development of narrative identity can be reliably coded based on the entire life story. The current findings suggest that coherent life narratives may emerge as early as mid adolescence, with the typical narrative structure that supports narrative coherence emerging in early adolescence. Life story coherence is associated with individuals' well-being in adolescence; however, this association is further moderated by age and culture. Specifically, higher levels of coherence were associated with lower levels of well-being in early adolescence, and positive associations between narrative coherence and well-being were present in late

adolescence. Given that the present thesis only investigated the development of narrative identity and its relation to well-being on the basis of adolescents' narration of past experiences, it is worthwhile for future research to extend the current findings with regard to the narration of future life stories and the use of cultural life scripts from a cross cultural perspective. After all, people's narrative identity is constructed on the basis of their cultural and familial expectations about how the life story should be organized, integrating their personal past, present, and the imagined future. Lastly, future research could also investigate how people incorporate the possible conflicting views of the self into the life story, such as the dynamics between a continuous self over time and the self that progresses across the lifespan, and how these aspects of the self are linked to individuals' well-being.

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## Appendix A

### Interview Protocol for Study 1

#### CHILD INTERVIEW

- Child interview takes place at sofas, using coffee table when necessary. Establish rapport with child for several minutes before beginning.

AUDIOTAPE THIS TASK on DIGITAL VOICE RECORDER

#### Life Periods (Chapter and Narrative Task)

**\*Note: RA script is marked in italics throughout.**

*I'd like to get to know you better and to hear about some of the important things that have happened to you. The first thing we're going to do is that I'm going to ask you to think about your life as if it were a story in a book.*

*If you wanted to tell your life like a story in a book, what would the chapters be? Think about how your life would be divided into different chapters.*

*Let's start with your life right now. What would be the chapter that you're in now? (PAUSE) What would you call that chapter? What are some things that happened in that chapter? (list the names of the chapters and things that happened in them on a piece of paper)*

*Now tell me about the chapter that comes before that. What would that chapter be? What would you call that chapter? What are some things that happened in that chapter?*

*What about the chapter that comes before that? What would you call that chapter? What are some things that happened in that chapter?*

*(Continue until the participant doesn't give any earlier chapters or after 10 chapters; make a note if I stop the task at this stage.) So is that the first chapter in the book about your life?*

*If they have given very fine-grained chapters, e.g., gone backwards through each day of the week, re-orient the task: Now if you were telling your life like a story in a book and you started at the beginning, what would the first chapter be?*

*Let me see if I've got this straight: so the first chapter is \_\_\_\_? Let's go forward through your chapters, and you tell me if you want to add any chapters or make any changes.*

*So the chapter that you're in now is \_\_\_\_\_. What are the things that have happened in earlier chapters that changed what you're like now? Try to think of one particular thing that happened in an earlier chapter that changed your life. It should be something that you remember clearly, and it should be something that's still really important to you now.*

*Try to think of a specific thing that happened on one particular day.*

[If they can't think of an event, use the following prompts:

Prompt 1. Show them their chapters

Prompt 2. *It can be something from any area of your life. It might be something that happened with your friends or your family, or to do with sports you play or other things you do in your spare time. It should be something that's important to you and has changed what you're like or what your life is like now.]*

*What chapter is that event from?*

*What happened? (Prompt with Uh huh, What else? Yeah? Anything else that you want to tell me about that?)*

*Now I'm going to ask you some more specific questions, and you might have already told me some of these things but if you could tell me again that would be great.*

*Who else was there?*

*Where were you?*

*When did this happen? How old were you?*

*How did you feel?*

*How did the other people feel?*

*How did this event change your life?*

*Now think of one more thing that happened in an earlier chapter that changed what you're like now. (same as above)*

NOTE TIME ON VOICE RECORDER ON ACCURACY CHECK FOR PARENT  
RA

## **Earliest Memory**

*Now I want you to think back to your very earliest memory; the very first thing that you remember. What was the first thing that you remember doing or happening to you?*

*(Prompt with Uh huh, What else? Yeah? Anything else that you want to tell me about that?)*

*Now I'm going to ask you some more specific questions, and again you might have already told me some of these things but if you could tell me again that would be great.*

*Who else was there?*

*Where were you?*

*What did you do?*

*How did you feel?*

*Is there anything else that you can remember now that you would like to tell me about [the event]?*

*How old were you when that happened?*

*How do you know you were that old?*

## **What I am Like Questionnaire**

*We have some sentences here and, as you can see from the top of your sheet where it says "What I am like," we are interested in what you are like, what kind of a person you are like. This is a survey, not a test. There are no right or wrong answers. Since people are very different from one another, each person would put down something different.*

*First let me explain how these questions work. There is a sample question at the top, marked (a). I'll read it out loud and you follow along with me.*

*(Examiner reads sample question.) This question talks about two kinds of kids, and we want to know which kids are most like you.*

- *So, what I want you to decide first is whether you are more like the kids on the left side who would rather play outdoors, or whether you are more like the kids on the right side who would rather watch T.V. Don't mark anything yet, but first decide which kind of kid is most like you, and go to that side of the sentence.*
- *Now, the second thing I want you to think about, now that you have decided which kind of kids are most like you, is to decide whether that is only sort of true for you, or really true for you. If it's only sort of true, then put an X in the box under sort of true; if it's really true for you, then put an X in that box, under really true.*
- *For each sentence you only mark one box. Sometimes it will be on one side of the page, another time it will be on the other side of the page, but you can only mark one box for each sentence. You don't mark both sides, just the one side most like you.*
- *OK, that one was just for practice. Now we have some more sentences on these pages. For each one, just mark one box, the one that goes with what is true for you, what you are most like.*

**PPVT-IV:** Standard administration for over 8. (no PPVT for pilots)

### **WRAP UP**

- Thank parent and child for participating; give parents and children gifts (and get parent's signature for money).

## Appendix B

### Interview Protocol for Study 2

#### I. Life Chapters

I would like you to begin by thinking about your life as a story. Think about how your life could be divided into different chapters. What might those chapters be? I would like you to describe for me each of the main chapters of your life story. You may have as many or as few chapters as you like, but I would suggest dividing your story into at least 2 or 3 chapters and at most about 7. If you can, give each chapter a name and describe some of the things that happened in that chapter. While we talk, I'll make some notes about what the chapters are and what would be in them

Let's start with your life right now. What would be the chapter that you're in now? (PAUSE) What would you call that chapter? What are some things that would be in that chapter? *[list the names of the chapters and things that happened in them on the chapter task form]*

Now tell me about the chapter that comes before that. What would that chapter be? What would you call that chapter? What are some things that would be in that chapter?...

*[The interviewer may wish to ask for clarifications and elaborations at any point in this section, though there is a significant danger of interrupting too much. We are quite interested in how the subject organizes the response on his or her own. Be careful not to organize it for the subject.]*

*[If the participant is going into too much detail, try to limit the amount of detail they are giving about the content of each chapter, rather than influencing the number or structure of chapters.]*

*[If they have given very fine-grained chapters, e.g., gone backwards through each day of the week, or if they can't give a chapter at all, or get stuck after just one or two chapters, remind them that you want to know the story of their whole life. You can also use the prompts: Would you have any chapters from earlier parts of your life? or Would you have any chapters from parts of your life before this?]*

*[Continue until the participant doesn't give any earlier chapters. (If you get up to 6 or 7 chapters, tell the participant that you will only do a couple more.)]*



So is that the first chapter in the book about your life? Let's go forward through your chapters now. I'll read what I've written down and you tell me if I've got anything wrong, or if you want to add anything or make any changes.

## **II. Critical Events**

Now that you have given me an outline of the chapters in your story, I would like you to tell me about a few specific events.

### **Event #1: Earliest Memory**

First, I'd like you to think back to your early childhood, as far back as you can go, and try to identify your very earliest memory. I want to know about the very first thing in your life that you remember doing or that you remember happening; your earliest memory of a specific moment or event in your life story. There will be some things from when you were very young that you'll know about because you've seen photos or because you've been told about what happened, but I want to know what's the very earliest thing in your life that you actually have your own memory of.

*[you may need to prompt the participant to come up with specific episodes as you go through the interview. E.g., if they recalled 'being at preschool' as their earliest memory, you would need to prompt them to think of a memory for a specific event that occurred at one particular point in time. You can use the following example to illustrate this point if necessary: For example, you might have a memory of a girl you were friends with when you were young. However, you probably would have known the girl for an extended period of time, perhaps several years. What I want you to tell me about today are memories for particular events, such as remembering one particular day when you had lunch with this friend, or the time when you first met this friend, rather than a general memory of the person you were friends with.]*

*[When the participant has selected an event, prompt for exhaustive recall using open-ended prompts, e.g.:]*

Uh huh, What else? Yeah? Anything else that you want to tell me about that? What else can you remember about that?

*[until the participant has told you all he or she can recall]*

Now I'm going to ask you some specific questions about this memory, and you might have already told me some of these things but if you could tell me again that would be great. Also, it's fine to just let me know if you can't remember some of these things, because it is very hard to remember things from such a long time ago.

Who else was there?

Where were you?

How did you feel?

How did the other people feel?

Is there anything else that you can remember now that you would like to tell me about [the event]?

How old were you when that happened? *[if they give a range, e.g. "3 or 4", ask: Which do you think is more likely, if you had to narrow it down to one year of age?]*

How do you know you were that old?

How do you know that you really remember this event, instead of just knowing that it happened because you've heard about it or seen photos?

## **Event #2: Low Point**

Now I would like you to tell me about a low point (e.g. a negative event) in your life story. Thinking back over your life, try to remember a specific experience in which you felt really negative emotions, such as extreme sadness, loneliness, fear, despair, disillusionment, guilt, and so forth. It should be something that stands out in your memory as a negative scene or moment in your life story, and it can be from any time in your life. Even though this memory is unpleasant, I would still appreciate it if you could be as honest and detailed as possible.

*[Note: If the participant repeats an event already discussed as a specific event (e.g., earliest memory) ask him or her to choose another one. Each of the specific events in this section should be independent. We want 4 separate events. If the participant already mentioned an event under the section of "Life Chapters," it may be necessary to go over it again here. This kind of redundancy is inevitable.]*

*[When the participant has selected an event, **it may be appropriate to check that they feel ok about talking about this event**; then prompt for exhaustive recall using open-ended prompts, e.g.:]*

Uh huh, What else? Yeah? Anything else that you want to tell me about that? What else can you remember about that?

*[until the participant has told you all he or she can recall. Then ask these specific questions about the low-point event:]*

When did this happen? How old were you? *[prompt for one year of age if necessary]*

How did you feel?

Were there any other people there? *[don't need to ask this if it's already obvious that there were]*

How did the other people feel?

Why was this a low point in your life? *[omit this question if it feels inappropriate]*

Did this event change your life? (If yes) How did this event change your life?

### **Event #3: Turning Point**

Now I would like you to think back over your life and identify an event that has changed your life or the kind of person you are. It could be something from any area of your life – your relationships with other people, your work and school, your outside interests, and so forth. Please identify a particular episode in your life story that you now see as a turning point in what your life is like or what you are like as a person.

*[When the participant has selected an event, prompt for exhaustive recall using open-ended prompts, e.g.:]*

Uh huh, What else? Yeah? Anything else that you want to tell me about that? What else can you remember about that?

*[until the participant has told you all he or she can recall. Then ask these specific questions about the turning-point event:]*

When did this happen? How old were you? *[prompt for one year of age if necessary]*

How did you feel?

Were there any other people there? *[don't need to ask this if it's already obvious that there were]*

How did the other people feel?

How did this event change your life?

**Appendix C**  
**Reliability Scores for Study 2**

|                                | NZE Sample |       | NZC Sample |        |
|--------------------------------|------------|-------|------------|--------|
| <i>Life period chapters</i>    | .96        | (.94) | 1.00       | (1.00) |
| <i>Chapter beginning score</i> | 1.00       |       | .79        | (.98)  |
| <i>Chapter ending score</i>    | .92        | (.76) | .84        | (.73)  |
| <i>Chapter coherence score</i> | .93        | (.85) | .93        | (.95)  |
| <i>Low-point theme</i>         | .88        | (.83) | .74        |        |
| <i>Low-point DC</i>            | .84        |       | .78        |        |
| <i>Low-point MM</i>            | .82        |       | .83        |        |
| <i>Turning-point theme</i>     | .79        | (.91) |            | (.78)  |
| <i>Turning-point DC</i>        | .96        |       | .90        |        |
| <i>Turning-point MM</i>        | .81        |       | .83        |        |

*Note: Reliability scores between the second main coder and the reliability partners are presented in brackets.*