

ABSTRACT

STYERS, MARY KOENIG. Protecting my Self through Language: Developmental Differences in Narrative Accounts following a Self-threatening Experience. (Under the direction of Lynne Baker-Ward.)

Understanding how adults perceive and respond to threatening situations has been investigated by numerous social psychologists. However, these researchers have neglected to consider the development of these responses. One notable omission is how individuals at different ages use language to protect their sense of self in everyday negative situations. This study investigated cross-sectional differences in responses to everyday problems, conflicts and issues in salient domains of the self. Fifty-five older elementary students, 51 middle school students and 54 college participants each narrated accounts of two recent problematic experiences that differed in their overall importance to the self and provided ratings of their recollections and psychological responses to these experiences. Participants at all age levels reported that the narrated events differed in their overall importance, intensity and self-relevance according to their level of salience to the self. In addition, there were cross-sectional differences in the density of internal states language, and the relationship between language use and subsequent event sequelae varied by age group. For the elementary age group only, participants who used positive reappraisal in their narratives experienced a decrease in importance and participants who used a higher percentage of positive emotion terms sought less assistance following the experience and reported higher levels of cognitive avoidance. For the middle school age group only, usage of positive reappraisal was associated with higher levels of cognitive avoidance of the experience. Finally, for the

college age group only, usage of positive reappraisal was associated with lower levels of cognitive avoidance. The findings are interpreted as indicating distinct patterns of responses to self-threat at different points in development. Further research should investigate language differences in developmental responses to self-threatening situations prospectively.

Protecting my Self through Language: Developmental Differences in Narrative Accounts
following a Self-threatening Experience

by
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LITERATURE REVIEW

Throughout the lifespan, individuals are continually faced with events that will challenge them. Many times individuals are asked to view the self in a different light, such as the child who first learns she is not good at sports, the pre-adolescent who begins to struggle with making friends in middle school or the adolescent who finds high school is much more difficult than he had been expecting. Each of these realizations may appear trivial in comparison with the tragedies that can affect young people, but in each case, the child's perception of the self is called into question and hence the impact can be significant. We know that children obtain these types of self-reflective realizations early on through their basic experiences in the world. From first through twelfth grade, children's perceptions of their own self-worth decrease (Jacobs et al., 2002), not because they are becoming more pessimistic but instead because they are becoming more realistically aware of their own situations.

One would assume that in the aftermath of all of these early trials, adults would become pessimistic; however, that is not the case. In fact, 60% of individuals believe they are happier than most people (Taylor & Brown, 1988) and the majority of individuals worldwide (86%) report "above average" happiness levels (Kesebir & Diener, 2008). Although earlier researchers hypothesized that an unrealistic self-view was an indicator of poor mental health, some now believe that certain optimistic and overly positive illusions may actually benefit well-being (Taylor & Brown, 1988). In the current day and age, we are consistently noticing that high self-worth individuals, in comparison to individuals with lower levels of self-worth,

are more likely to paint unrealistically bright pictures of their selves. These individuals are more likely than others to feel that they have more control over situations than they actually do, ignore negative feedback from others, and downgrade the importance of areas in which they lack ability. According to Taylor and Brown (1988):

The mentally healthy person appears to have the enviable capacity to distort reality in a direction that enhances self-esteem, maintains beliefs in personal efficacy, and promotes an optimistic view of the future. (p. 204)

These overly positive perceptions of situations appear to be one way of revising social reality (Taylor, 1983; Taylor & Brown, 1988), enabling the individual to become resilient in the face of a challenge to the self.

One possible mechanism of resiliency may involve giving voice to these experiences of self-threat. Establishing the benefits of emotional disclosures, research in expressive writing with adult (Fivush, Edwards & Menutti-Washburn, 2003; Pennebaker & Beall, 1986; Pennebaker, Colder & Sharp, 1990; Pennebaker & Francis, 1996; Pennebaker, 1997; Pennebaker, Mayne & Francis, 1997; Park & Blumberg, 2002) and child populations (Fivush, Marin & Crawford, 2007; Reynolds, Brewin & Saxton, 2000; Soliday, Garolfalo & Rogers, 2004), has shown that writing about experiences may be beneficial for well-being. In addition, some studies have found that the specific types of words used in descriptions of events are related to later physical and mental health (Fivush et al., 2007; O’Kearney, Speyer & Kenardy, 2007; Pennebaker & Francis, 1996; Pennebaker, Mayne & Francis, 1997; Sales et al., 2005; Styers & Baker-Ward, 2008). However, none of these studies offer a cross-sectional investigation of language use from childhood through adulthood as language relates to psychological functioning. Pennebaker and Stone (2003) examined age-related differences

in language use across the lifespan, but their meta-analysis was limited by age groupings that lacked a developmental rationale (e.g., 8-14, 15-24) and by the variety of methods and procedures used for narrative data collection. Additionally, studies examining the link between language use and functioning in childhood have their limitations. Experiments using expressive writing as an intervention may have artificially encouraged rumination surrounding a negative experience (Fivush et al., 2007; O’Kearney et al., 2007) and one naturalistic investigation of the linkage between language use and later functioning involved extended time frames, correlating language at ages 3-4 with psychological well-being at ages 9-10 (Sales et al., 2005). It is also unclear how children may differ from adults both in their narrative expression and the psychological benefits achieved from voicing their experiences. The current study merges the aforementioned lines of research by examining developmental differences in pre-adolescents’, adolescents’ and young adults’ narrative accounts of a self-threatening experience and the subsequent influences of narrating the experience on various indicators of well-being, including incidence of intrusive and avoidant thoughts (Horowitz et al., 1979), coping strategies (Brodzinsky et al., 1992) and global self-worth (Harter, 1985, 1988; Neeman & Harter, 1986). Previous studies have only linked internal states language use to intrusive and avoidant thoughts and physical health (Fivush et al., 2007; O’Kearney et al., 2007; Pennebaker & Francis, 1996; Pennebaker et al., 1997; Sales et al., 2005; Styers & Baker-Ward, 2008). Ultimately, this study aims to examine developmental differences in the narrative expression of self-threat and the resilience of the self.

In order to provide validation for this proposal’s aims, the first chapter of this proposal reviews self-protective systems that are in place following a self-threatening

experience and examines developmental differences in children's perceptions of the self as well as children's responses to stressful experiences. The second chapter explores the bridge to self-understanding built through the use of narrative accounts of experiences. Finally, a method, results and discussion section are presented.

For the purposes of this paper, a self-threatening experience will be defined as any event that conveys mixed feedback about the self in a domain valued by the individual (i.e., any event that violates one's pre-existing views of how the world works within a valued domain). Without some type of qualification or reinterpretation of the experience, through the application of some type of constructivist process, the individual is left with a negative appraisal of the self which may offer negative implications for one's self-view (Baumeister, 1997; Crocker & Wolfe, 2001; Park & Ai, 2006). A self-protective mechanism is defined as an individual's response to a self-threatening experience that involves some type of cognitive accommodation of the event into the current self-system (Park & Ai, 2006; Taylor, 1983). For example, the individual may downplay the importance of the domain (Steele, 1997) or may positively re-structure the experience in memory to be more positive (Park & Ai, 2006; Taylor, 1983). It is hoped that the information obtained in this research will be of value for clinicians and parents who seek to understand ways to help children feel better following a troubling experience. Additionally, this research will add to the understanding of cross-sectional differences in the relationship between language use and well-being following a self-threatening experience. We know that adults are fairly content and resilient to such threats. The question of interest here is how this ability develops and how resiliency can be observed through narrative.

The self and self-protective mechanisms

The *self* involves who we are and all that we call “me” (James, 1890). Identity refers to the ways in which the self is vocalized, organized or constructed (McAdams, 1995). In other words, identity refers to how we talk and think about ourselves. In addition to identity, there are many different components of the self, notably self-esteem and self-worth. *Self-esteem* has been defined as, "how much value people place on themselves" (Baumeister, Campbell, Krueger & Vohs, 2003, p. 2). Our sense of *self-worth* involves not only how we see ourselves, but also represents how we feel and think about our selves and how we perceive our self to function within the world (Harter, 1985). Several theorists use self-esteem and self-worth interchangeably (Pelham & Swann, 1989; Crocker & Wolfe, 2001; Crocker & Knight, 2005) and for the purposes of this paper, these terms will be considered synonymous.

William James (James, 1892/1968) was one of the first to truly deconstruct the concept of self, suggesting that individuals are motivated by social self-seeking, or a desire to be recognized in a positive light by others. In addition, James was one of the first to suggest how the self might serve a protective function. In determining self-esteem and an overall positive self-view, the individual must consider all aspects of the self and “pick out the one on which to stake his salvation” (p. 44). James goes on to say that this is a strong example of “selective industry of the mind” (p. 44). Individuals choose attributes where they are successful and place them atop a hierarchy of differing self-characteristics. Each characteristic is organized according to its worth (James, 1890) or importance (Crocker &

Wolfe, 2001; James, 1890; Pelham & Swan, 1989) within the self-hierarchy (e.g., self as a student placed above self as an athlete).

Since the self-system has a hierarchy of importance, it only follows that threatening events in salient domains may call the hierarchy into question. For the most part, individuals are fairly proficient at responding to self-threats either through the help of significant others or individual resources (Taylor, 1983). When experiencing a threat to self, the individual approaches the experience in three ways: searching for meaning, gaining mastery and enhancing self-esteem (Taylor, 1983). Beginning with the search for meaning, the individual seeks the reason why the event has happened to him or her and attempts to understand the impact of the experience on the self. Cognitive accommodations are made to restructure meaning, allowing the individual to find positive implications within the experience. Next, a sense of mastery enables the individual to feel as though he or she can prevent the experience from happening again (i.e., a feeling that one has learned from the experience). Finally, self-esteem enhancements occur to protect the self-hierarchy from destruction. For example, the situation may be re-constructed to illustrate a more positive picture (Taylor, 1983) or the self-hierarchy may be re-organized to de-emphasize the importance of the tarnished self-domain (Harter, 1999; James, 1892/1968; Steele, 1997).

Although Taylor (1983) discussed three separate ways of dealing with stressful experiences, some of these concepts can be considered to overlap. Park and Ai (2006) developed a model for understanding the impact of traumatic events on self-understanding. According to this model, everyone has a set of global beliefs about the world (i.e., ideas for how the world is supposed to work). Traumatic events change perceptions of global beliefs

(e.g., self-esteem, locus of control). If individuals feel that their global understanding (e.g., self-esteem) is violated by the appraised meaning of a situation (e.g., *This event has taught me that I'm a bad person*), this can be problematic. As a result, the individual engages in meaning making to repair the self. Taylor defined meaning making as:

Coming to see or understand the situation in a different way and reviewing and reforming one's beliefs and goals in order to regain consistency among them. (p. 393)

Consistency in this definition is agreement between the situation and one's beliefs.

Meaning making allows individuals to change their perceptions of the situation or their own beliefs (e.g., the importance of the domain to the self) in order to understand the experience in a way that is self-protective (Park & Ai, 2006). It should be noted that whereas this model specifically discusses the influence of traumatic experiences, other researchers have noted that stressful experiences, which are assumed to be less intense than traumatic experiences, may also elicit coping resources. Perceptions of growth and mastery can be achieved from both stressful and traumatic experiences (Aldwin & Levenson, 2004).

Over the past twenty-five years, a vast amount of research has been conducted examining how the adult self responds to different types of threatening situations. In adulthood, individuals engage in various techniques to protect valued self-domains (e.g., academics), including social comparison (e.g., comparing oneself to less fortunate others; Hogg, 2000), dis-identification with the domain (e.g., arguing that the specific domain is no longer important; Steele, 1997) and self-affirmation (e.g., affirming the self as whole and competent in the face of negative information in a particular threat; Cohen, Aronson & Steele, 2000; Steele, 1988). However, these past studies have neglected to consider

developmental differences in response to threatening situations. The following section explores stages of self-development and cross-sectional differences in responses to stressful situations, suggesting that there are developmental differences in how the self responds to threatening situations.

Developmental differences in children's responses to stressful situations

The large majority of social psychological theories and research come from work with college students. How might these concepts apply differently in child populations? Some concepts are similar, such as discounting (Harter, 1999) and dis-identification (James, 1892/1968; Steele, 1997). For instance, it appears to be the case that around the age of 8, children begin to employ discounting, whereby they discount the importance of any domain where they perceive low competence levels and emphasize the importance of domains where they perceive high competency (Harter, 1999). For example, a high self-esteem child may de-emphasize the importance of athletics (where she performs poorly) and emphasize the importance of academics (where she excels). Although discounting is one similarity in the responses of children and adults to threats to the self, there are several differences in self-understanding that should be considered.

Developmental differences in self-understanding. Susan Harter (1986, 2006) has conducted an extensive amount of research on self-understanding with children and has proposed a series of theoretical conclusions based on this research. According to Harter (1986, 2006), young children do not understand the concepts of global self-worth or social comparison until the approximate age of 8 (i.e., during middle childhood). Prior to this age, children are often thinking in the moment, reflecting on behavioral characteristics that may

not last across time and situations. During the middle to late childhood period (approximately 8 to 11), characteristics of the self encompass the interpersonal as relationships with peers become a salient dimension of the self. Children are beginning to compare themselves with others and start to adjust their self-perceptions accordingly. There is also an increased understanding of the difference between ideal (e.g., “I am a good student”) and real self-perceptions (e.g., “I’m not good at math”) as well as an increased understanding that events can simultaneously evoke both positive and negative emotion. At this stage of self-development, “children come to internalize the standards and values of those who are important to them, including the values of one’s society” (Harter, 2006, p. 390). Thus, performing at a level that is not acceptable by significant others (e.g., not being kind to friends or not performing well in school) may negatively impact self-esteem. Not only do children internalize these standards and values, but they are able to act independently from adults in appraising situations. They may respond based on how they believe others would view the situation but the ultimate evaluation is conducted independently.

The next stage of self-development occurs during early adolescence (middle school years). At this time point, interpersonal attributes and social skills which may influence social approval are extremely salient. Within this stage, “peer culture does come to loom large” (Harter, 2006, p. 396). Teenagers are beginning to vary their self-attributes as a function of social context (e.g., “I’m different with my peers than with my parents”). Due to this differentiation of selves across context, early adolescents lack the ability to create a coherent self across multiple relationships (Harter, 2006). However, Harter (2006) noted that the creation of multiple selves may serve as a buffer to the young adolescent, reducing the

possibility that a negative occurrence in one realm of life may harm or generalize to other aspects of the self. Yet, the early adolescent is troubled by overgeneralizations (i.e., all or none thinking; “I’m either really intelligent” or “I’m really not intelligent”), which may lead to unrealistic self-perceptions. It is common to see the self change during this period, as there is still some difficulty in cognitively controlling self-representations (possibly due to a lack of a coherent and ever changing self). Finally, similar to the earlier period of self-development, the early adolescent is concerned with the opinions of others, but experiences great difficulty in reconciling different opinions and standards across multiple contexts (e.g., coming to terms with a disappointed parent at home, a set of very pleased friends and a moderately pleased instructor at school) (Harter, 2006).

During middle adolescence (high school years), adolescents become more introspective and concerned with how others view them. Adolescents are developing an ability to make comparisons between conflicting areas of the self but do not yet have a way to resolve these conflicts (e.g., *Why am I a different person with my friends than with my parents?*). As a result of this understanding of role conflict, middle adolescents may be subject to greater confusion and distress over a lack of coherence in the self (Harter, 2006).

It is not until late adolescence to early adulthood (late high school to early adulthood/college years) that adolescents are able to create some coherence among the conflicting domains (e.g., being depressed and cheerful within the same weekend can be viewed as being moody), allowing for a more coherent self-presentation. There is also a new focus on future or possible selves (e.g., “Who or what can I be?”) which allows for a sense of direction in life. Finally, the ideal and real self are more aligned at this point, because the

individual now has more freedom to seek out interactions that would enhance self-esteem (e.g., choosing a major in an area where they have previously found success).

The variety of experience in self-development suggests that social psychological theories on self-threat conducted in college and adult samples cannot be considered to apply equally to children and adolescents (Harter, 2006). Differing perceptions of self and cognitive understanding across childhood and adolescence may illustrate a dramatically variant picture when it comes to self-threat. For instance, consider the pre-adolescent child who is just beginning to utilize social comparison, as she realizes that her ideal self is different from her real self and that other's opinions are important to her. Then there is early adolescence, when the child is exposed to over-generalizations, differentiation of self and difficulty in meeting the demands and opinions of multiple individuals (Harter, 2006). Cross-sectional studies on self-threat should examine social psychological principles in the context of a developing sense of self. The current study answers this call by examining the principles of discounting and appraisal in the context of developing selves, examining three different age groups corresponding to changes in the understanding of the self: late elementary (ages 9-11), middle school (ages 12-14) and college (ages 18-22).

Developmental differences in children's coping. Different stages of self-development suggest a potentially different pattern of responses to threatening situations between age groups. In addition, research investigating cross-sectional differences in coping with stressful and self-threatening experiences corroborates this expectation.

Coping is defined as a "person's constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding

the person's resources" (Folkman et al., 1986, p. 993). Coping is motivated by a desire to regulate emotions, internally, behaviorally and contextually. In other words, emotion regulation involves: trying to internally regulate one's own emotions (i.e., emotion-focused coping), trying to regulate one's behavior in the expression of emotion (e.g., hiding facial expressions of emotion) and trying to regulate the source (context) of emotional arousal (i.e., problem-focused coping) (Losoya et al., 1988). Studies investigating coping in children typically consider developmental differences in both emotion-focused and problem-focused coping in response to stressing experiences.

Beginning with a study on pre-adolescents' coping responses to stressing experiences, Altshuler and Ruble (1989) asked 5- to 11-year-old participants what they would suggest to children awaiting a positive exciting experience or a negative stressful experience. The researchers found that children of all ages preferred avoidance strategies (e.g., denial of the experience, distraction) overall, regardless of the valence of the event. For the negative stressful experiences, younger children mentioned escape (e.g., leave the situation) and behavioral distraction (e.g., do something else) most frequently, whereas older children mentioned behavioral and cognitive distraction (e.g., think about something else) most often. In addition, there was a greater incidence of cognitive distraction in the older age groups whereas escape suggestions were more prevalent in the younger age groups. The researchers suggested that greater accessibility to cognitive strategies may afford older children greater flexibility in dealing with stressing situations.

Other researchers have investigated coping strategies in a more explicit way, asking children how they reacted in response to personally salient stressful experiences (Band &

Weisz, 1988). Six, nine and twelve year olds were asked to describe a time when they felt bad, unhappy or sad across several different domains of experience. For each situation that they could remember, children were asked what they did and thought in response to the experience. Strategies were classified as primary control (e.g., responding directly to the issue; try to change the situation, try to resolve problems through aggression or avoiding cognitions), secondary control (e.g., turning away from the problem specifically and toward emotions; social support, emotion focused crying or aggression, avoiding emotions) or relinquished control (e.g., doing nothing). The researchers found younger participants were more likely to use primary coping and an older participants were more likely to use secondary coping, such that 12 year olds were more likely to use secondary control compared to both 6 and 9 year olds. In addition, primary coping was predominant in situations perceived as controllable (e.g., peer or school difficulty) whereas less familiar/controllable situations (e.g., accidents, conflicts with authority figures) evoked secondary control responses. Secondary control strategies were theorized to be more apparent in older age groups due to more complex cognitive resources. It appears that older children are better equipped to make an appropriate choice (e.g., choosing to use primary or secondary control) when faced with a negative experience.

It should be noted that the difference in coping strategies for controllable versus uncontrollable situations was replicated by Brodzinsky et al. (1992) in their coping scale developed for children ages 10 to 15. Situations deemed directly controllable (e.g., involving peers, school) evoked more primary coping strategies (e.g., assistance seeking, cognitive-behavioral problem solving), whereas unfamiliar stressors and uncontrollable situations (e.g,

conflicts with authority) elicited more secondary coping techniques (e.g., cognitive avoidance). Due to a difference in coping responses by situation, the current study examines coping strategies as they relate to everyday, familiar experiences.

Additional studies with children in middle childhood and pre-adolescence have found similar patterns of coping behavior, suggesting that children develop an increased ability across the middle childhood years and into pre-adolescence to use more cognitive techniques rather than denial or avoidance of the situation (Rice, Levine & Pizzaro, 2007; Wilson, Smith, Ross & Ross, 2004). The present study investigates cross-sectional differences in coping by examining use of various cognitive behaviors (e.g., cognitive terms, cognitive behavioral problem solving, cognitive avoidance) between late elementary (9-11), middle (12-14) and college students (18-22), as these age groups are more likely to utilize a variety of cognitive techniques and to call upon a greater pool of potential coping responses compared to younger age groups.

Across all of the previously mentioned studies, older children were more likely to employ complex coping strategies involving cognition versus distraction/denial techniques in response to negative experiences. One particularly interesting cognitive strategy found across multiple studies in childhood is cognitive re-appraisal (i.e., changing the situation in a positive way) (Altshuler & Ruble, 1989; Anshel & Delaney, 2001; Folkman et al., 1986; Losoya, Eisenberg & Fabes, 1998; Rice, Levine & Pizzaro, 2007). As children get older, approaching pre-adolescence, they are more likely to employ cognitive re-appraisal (restructuring the meaning of the situation in a more positive way) (Altshuler & Ruble, 1989; Anshel & Delaney, 2001; Losoya, Eisenberg & Fabes, 1998; Rice et al., 2007). Due to the

non-existent research in children and adolescents examining how positive reappraisal relates to later functioning, this study will specifically explore cross-sectional differences in narrative reports of positive re-appraisal as it relates to psychological well-being.

It is also important to recognize the age-related differences in self-development which may play a role in perceptions of threat. For instance, would situations that threaten the view of the “self as a friend” be especially threatening to those in late childhood and early adolescence? How might the lack of a coherent self negatively impact the adolescent or child when it comes to self-understanding following a threat? Pre-adolescents, in particular, may experience difficulty in separating the impact of a specific negative experience on the whole self, as they have not yet begun to differentiate various domains of the self (Harter, 2006). It would also seem that affirming a different domain of the self would not be a viable alternative as it has been with adults (Cohen, Aronson & Steele, 2000; Steele, 1988), as pre-adolescents and adolescents cannot yet conceptualize the idea of a cohesive self. This study examines developmental differences in response to self-threatening experiences, by recognizing the important implications of differences across age groups in self-development and coping strategies.

Self-understanding through narrative

Whereas the previously described social psychological theories have focused on various self-protective mechanisms, recent research in childhood, adolescence and adulthood has turned to the influence of narrative on self-understanding, specifically through the use of narrative meaning-making (e.g., McLean, Pasupathi & Pals, 2007). The examination of narrative as it relates to self-understanding is not new in the clinical arena, as many clinicians

use narrative therapy with adults. Narrative therapy encourages clients to give voice to their personal experiences and the meanings associated with those experiences (Semmler & Williams, 2000). Through narrative therapy, clients tell stories of their life experiences and the clinician and client work together to co-construct a narrative that does not internalize negative messages from the outside world. Thus, clients are encouraged to re-structure their stories to be empowering and meaningful (Semmler & Williams, 2000).

Only one study has examined narrative accounts of explicit threats to self-esteem. Campbell, Baumeister, Dhavale, and Tice (2003) asked college students to describe two separate times when they experienced a major and a minor threat to self-esteem. Since this study was designed to examine ego shock (e.g., freezing up after the experience), the narratives themselves were only examined for type of event, self-image change and strategies for responding to the experience. Language use was not examined in this study. Overall, individuals mentioned seeking social support and rationalizing the experience for both minor and major threats to self-esteem. Participants also believed they had changed their self-views to a greater extent in response to major threats. Ego shock (e.g., feeling numb or uncertain) was only associated with major threats to self-esteem.

Narrative and self-perceptions. How does narrative recounting of experiences relate to self-understanding? McLean et al. (2007) argued that narrative accounts of events serve as a type of adjustment process to negative experiences. When a negative event occurs, children and adults put their thoughts into narrative form to make sense of the issue. According to the researchers, “Explaining and resolving negative events allows children to understand the personal meaning of these events, thus providing for greater self-understanding and self-

consistency” (p. 266). These personal narrative accounts of events are then shared with others and whether these stories are repeated may impact perceptions of the self over time. A lack of importance of the event to the individual may be one reason that the event was not shared or repeated. McLean et al. (2007) also believed that social feedback following retelling is important for self-understanding. For example, children learn how to tell narratives of their experiences through social interactions and narrative retellings of episodes within the family (Bohanek, Marin & Fivush, 2008; Bohanek, Marin, Fivush & Duke, 2006; Fivush & Sales, 2006). Research with pre-adolescent populations has found that parental characteristics (e.g., attachment level, language usage, control of the conversation) in parent-child narrative re-tellings of an experience may influence child internalizing/externalizing behaviors (Fivush & Sales, 2006), children’s locus of control (Bohanek, et al., 2006) and child self-esteem (Bohanek et al., 2006; Bohanek, et al., 2008).

Self-esteem may also change over time due to the ways in which an event is narrated and the types of listeners available to hear the experience. The relationship between self-esteem and family narratives was examined in a recent study with pre-adolescents by Bohanek et al. (2008). With regard to positive experiences, mothers who explained and expressed emotion (compared to mothers who didn’t explain or express emotion) had daughters with higher levels of self-esteem two years later. In contrast, for negative experiences, fathers’ explanation of emotion was related to higher self-esteem for daughters but not for sons. For the positive narrative, fathers’ explanations of emotion were related to lower self-esteem for sons and daughters two years later (Bohanek et al., 2008). Thus, explaining and expressing emotions may have different implications for sons’ and daughters’

later self-perceptions. Similar results were found in an earlier study (Bohanek et al., 2006), in which a coherent organization of the group's perspective on a family event was associated with higher self-esteem in pre-adolescent girls. Additionally, an individual perspective, in which family members described their own thoughts and feelings, was associated with a greater sense of external locus of control, especially in boys (Bohanek et al., 2006). Thus, the ways in which an experience is narrated and shared within the family may significantly impact perceptions of the self.

The previous section examined the ways in which the self is protected in conflicting situations. This section will further delve into the use of narrative as it relates to self-understanding and identity. In order to understand a person, McAdams (1995) suggested we consider three levels of functioning. At the first level are personality traits, such as introversion and extraversion. At the second level are personal concerns, or particular goals, plans or motives designed to meet some particular end or future. It is not until late adolescence or adulthood that individuals achieve Level III, identity as a life story. At this level, the life story is a changeable inner story that may be accessed through narrative storytelling methods. According to McAdams (1995), children operate at Levels I and II, offering lists of personality characteristics and desired goals or plans. Understanding the life story offers one pathway to understanding the individual.

Understanding life stories. According to Habermas and Bluck (2000) the life story is the "life as told, remembered or thought about by the individual" (p. 748). Autobiographical reasoning involves the ways in which the life story is utilized and created. This type of reasoning requires internal or external self-reflection by linking past and present self-

experiences together. The capacity to link the past and present is in part due to the ability to use coherence in describing the life story. Four types of coherence are necessary for the life story, including: temporal, cultural concept of biography, causal and thematic. Temporal coherence involves the ability to order events in time. Cultural concept of biography involves understanding how basic facts and events should be included in life stories (e.g., transitions, birth). Causal coherence is used to link episodes and to explain changes in values or personality across time. Thematic coherence involves creating some type of thematic similarity between multiple life episodes (e.g., “My life always seems to be so positive!”).

The construction of a life story enables the self to view self progression through stability and change processes (McLean, 2008). For adults, a self-threatening experience may not appear relevant when considered in the larger context of one’s life. Individuals may also justify such an experience by saying they have changed since the event. However, since pre-adolescents and adolescents experience difficulty in linking various selves (Harter, 2006), it also follows that these age groups should experience difficulty in creating a coherent life story (Habermas & Bluck, 2000) that may offer protection against self-threatening experiences. Many children are able to provide a coherent story of a single episode but experience greater difficulty in linking multiple episodes together and in providing an overarching theme for all of these episodes (Bohn & Bernsten, 2008; Habermas & de Silveira, 2008).

In one comprehensive study, Habermas and de Silveira (2008) interviewed 102 participants, ages 8, 12, 16 and 20. Half of the participants were given training in producing a coherent life narrative. Participants were asked to think of their seven most important

memories and were given fifteen minutes to organize these memories into a life story narrative. Overall, the number of propositions in narratives increased with age. Additionally, females used more cognitive processes (e.g., understanding or opinions; “I realized how little I meant” “I was always convinced he didn’t care”). The use of biographical practices (e.g., writing in diaries, collecting pictures) predicted temporal coherence in one model. Overall, the greatest jumps in coherence were illustrated between the following age groups: Temporal coherence evidenced large jumps between 8 and 12, followed by causal coherence (between 12 and 16) and thematic coherence (between 16 and 20). It appears that while children can coherently narrate an event between 8 and 12, they still lack some aspects of causality and theme relevant to the life story narrative.

Bohn and Berntsten (2008) found similar results in a sample of Danish children in the third, fifth/sixth and eighth grades. Overall, life stories were longer and more coherent in older age groups. Third graders were unable to integrate a series of events into one life story. Fifth/sixth graders were somewhat better and could narrate events and organize them across time. However, it was the eighth graders who were able to provide the most detail, offering evaluations and culturally relevant beginnings and endings. Whereas the third graders did not perform well on life story coherence, they performed better on single story coherence. Additionally, global coherence increased with a greater understanding of cultural life scripts (e.g., understanding of important life events), suggesting that knowledge of cultural scripts is essential in defining one’s life story.

Issues with the life story approach. Although the life story approach has provided some information on the limited capabilities of children and young adolescents to form life

stories, several pieces are still missing. How are children able to maintain a positive outlook following a stressful situation if they are unable to use the life story framework? As Harter (2006) noted, it takes a while for children to develop a sense of coherence in their self-attributes and conflicting characteristics. Thus, it is not surprising that children might experience difficulty in creating a life story that integrates all of their seemingly contradictory selves together. At younger ages, it makes more sense to ask children to provide a single self-threatening experience and to explore how children and adolescents structure their narratives to find meaning. For instance, a recent study in our lab (Styers & Baker-Ward, 2009) revealed that 4th/5th graders, 7th/8th graders and college students differed in their perceptions of personal growth from a negative academic experience. The ability to use personal growth perceptions is dependent upon the realization that some past self is different from the present self, thus enabling the individual to distance themselves from a potential threat (McFarland & Alvaro, 2000). Fourth/fifth graders said they had changed the most overall in response to both positive and negative academic experiences whereas college students showed the expected pattern of personal growth (i.e., feeling that they had changed more from a negative academic experience than a positive one). Fourth/fifth graders also dealt with the positive and negative academic experiences in different ways, with the youngest participants reporting significantly more “intrusive” thoughts following positive compared to negative academic experiences. College students showed the opposite pattern (Styers & Baker-Ward, 2009).

It is possible that this continued activation of positive in comparison to negative experiences may serve to maintain a sense of self-worth among the youngest participants,

who could not rely on an established autobiographical self to minimize the impact of specific negative experiences on one's sense of competence. The research suggests that younger children can reconstruct their perceptions of events, but they may do so differently than adults.

To date, research in life stories has provided no links to measures of psychological well-being and outcomes. Simply knowing that children are or are not able to tell a life story at different ages tells us nothing about what the construction of this story means for well-being. Research has been conducted examining family narratives as they relate to well-being (Bohanek, et al., 2006; Bohanek, et al., 2008; Fivush & Sales, 2006) but more research is needed to examine the relationship between the construction of a personal narrative as it relates to indicators of well-being.

The present research remedies some of these issues by examining the impact of two separate, specific self-threatening experiences and examining how children differ from adolescents and young adults in their narrative accounts of these experiences. Finally, this study links narrative language use to real world outcomes, relating language use to scores on measures of psychological well-being and coping. The next section explores narrative language use as it relates to measures of psychological and physical well-being.

Developmental differences in language use are also addressed.

Internal states language and narrative understanding

Internal states language is defined as “words that convey emotion, cognition and perspective...use of this type of language in personal narratives is indicative of thinking about and reflecting on one's experiences” (Fivush & Baker-Ward, 2005, p. 456). According

to Fivush and Baker-Ward (2005), in evaluating past experiences, individuals reflect on the deeper meaning of the experience through internal states language. Stressful and traumatic experiences in particular may call for a greater need to find meaning and reconstruct memory in order to “make sense of what may seem senseless” (p. 455). Investigation of internal states language may offer a sensitive measure of how individuals comprehend important life events (Fivush & Baker-Ward, 2005). This section first examines previous work in internal states research with adults, followed by research with children.

Internal states research in adults. A large majority of the research on internal states usage in adults comes from work by Pennebaker and colleagues. Across numerous studies, Pennebaker and his collaborators have found that writing about thoughts and emotions (i.e., expressive writing) surrounding negative events for an extended period of time (usually 3-4 days) is associated with health benefits. Specifically, a greater use of positive emotion words, moderate use of negative emotion words and greater uses of causal (e.g., because, hence) and insight (e.g., think, know) words in narratives of negative experiences are associated with fewer visits to the student health center as well as short term changes in autonomic (e.g., lower heart rate) and muscular activity (Pennebaker & Francis, 1996; Pennebaker, 1997). Additionally, among college-age participants, simply discussing thoughts and feelings surrounding a traumatic (Pennebaker & Beall, 1986; Pennebaker et al., 1997) or stressful experience (Pennebaker, Colder & Sharp, 1990; Pennebaker et al., 1997) was related to fewer health center visits. Self-reports provided by participants have suggested psychological benefits of writing about a stressing or traumatic experience, as participants report gaining

insight and perceiving the writing experience as both meaningful and valuable (Pennebaker, 1997; Pennebaker et al., 1990).

Further, one study by Pennebaker et al. (1997) found specific effects of word usage as it relates to physical and psychological outcomes in expressive narratives. Greater use of cognitive terms in narratives of stressful experiences and traumas was related to better health (e.g., reduced visits to health center) as well as higher academic and work motivation (e.g., higher GPA, finding new job faster). Additionally, use of positive emotions and a moderate use of negative emotions was related to better health following stressing and traumatic experiences. Pennebaker et al. (1997) also found that cognitive term usage may have controversial effects depending on the time since the experience. In a second study examining narrative accounts of a death of a loved one (Pennebaker et al., 1997), an increase in cognitive terms was related to less rumination but also lower levels of positive states a year after the death experience. Thus, the type of words, and their context (i.e., time since the event; type of event) may be linked to both psychological and health outcomes.

Part of the expressive writing process may involve re-structuring memories of stressful or traumatic experiences. Park and Blumberg (2002) found that writing about traumatic events is related to seeing the event as more resolved over time and less stressful in the present day. Additionally, college participants in the expressive writing study by Park and Blumberg (2002) experienced lower levels of intrusive and avoidant thoughts over time. Self-perceptions and world-views were not changed through expressive writing but the characteristics of the situation and perceived impact were changed instead. The individual was able to lessen the impact of the negative experience on self-worth by perceiving the

event as less stressful and perhaps also lessened the importance of the event to the self over time (similar to dis-identification with a domain and discounting; Harter, 1999; James, 1892/1968; Steele, 1997).

A meta-analysis of the Pennebaker and colleagues' investigations of expressive writing found effects of expressive writing interventions to be significant and meaningful across studies (Smyth, 1998). Smyth (1998) also suggested that the writing task may be more beneficial for those with issues of insecurity or self-esteem, as first-year college students, who were experiencing a transition that typically involved a re-assessment of the self-concept, experienced the greatest benefits on well-being following the writing intervention. According to Smyth (1998), entering college was an ongoing stressor that may have been alleviated through writing. It may be that writing helped students to self-affirm a different domain (Steele, 1988) or even employ downward counterfactual thinking (e.g., saying the event could have been worse, White & Lehman, 2005). At a basic level, writing may enable meaning-making in the strictest sense, allowing the individual to understand the situation in a different way (Park & Ai, 2006). Recent research on an expressive writing intervention following 9/11 may corroborate the meaning-making hypothesis, as college students who increased their use of cognitive terms as well as positive and negative emotions following the events of 9/11 perceived that they were less stressed during the events of 9/11 than was actually the case (Fivush, Edwards & Menutti-Washburn, 2003). Similar to the study by Park and Blumberg (2002), college students changed their accounts of their initial experience of the event over time (Fivush et al., 2003). Meaning-making appears to be the best fit here, as

participants were re-structuring their memories of the experience in order to be self-protective (Park & Ai, 2006).

Whereas most of the previous studies did not examine events that were necessarily self-threatening, two groups of researchers have examined changes over time in adult females' narrative accounts of sexual assault (Amir, Stafford, Freshman & Foa, 1998; Foa, Molnar & Cashman, 1995). All of the women were in therapy at the time of the study and were asked to both mentally and verbally relive the experience as if it were happening. In the first study by Foa et al. (1995), narratives became longer over the course of the study. Participants included more thoughts and feelings over time and provided fewer actions and dialogue in their narrative. All participants showed some benefit from the therapy over time, with all participants experiencing decreases in post-traumatic stress and the majority experiencing less depressive thoughts. Additionally, more coherent (i.e., less fragmented) narratives were associated with reductions in anxiety but not depression. Amir et al. (1998) examined levels of reading ease within sexual assault narratives. Lower levels of reading ease (i.e., operationalized as being inarticulate) were associated with higher levels of anxiety at two weeks post-trauma and higher levels of post-traumatic stress at three months post-trauma. With regard to traumatic experiences, giving voice to the experience in a coherent fashion may prove helpful in reducing levels of anxiety and post-traumatic stress. Since it is difficult to directly change aspects of the self that were harmed following an assault, therapy in this case may have served a self-affirmative role (allowing the individual to see the self as good and whole without changing the threat in question) (Steele, 1988). A greater coherence

and lessened fragmentation in the narrative over time appears to be the best evidence of this type of process.

Previously discussed studies have examined changes in narrative accounts over time. These next studies examined internal states differences across narrative accounts of three different sets of experiences: narratives that vary in emotion and intensity (Bohanek et al., 2005), narrative accounts of early versus late memories (Bauer et al., 2003) and narrative accounts of intensely negative experiences that varied in controllability (Styers & Baker-Ward, 2008). Across studies, researchers found that adults provided longer narratives for intense and negative events compared to moderate and positive events (Bohanek, Fivush & Walker, 2005) and women included more internal states terms, especially when the event was viewed as significant and intense. Men, in contrast, used internal states language more often when they were less confident about the details of events and when the events had not been discussed frequently (Bauer et al., 2003). Additionally, negative narratives contained more cognitive terms and passive sentence structures and those classified as traumatic contained less positive emotion (Bohanek et al., 2005). It is important to consider that there were gender differences in internal states usage; however, these gender differences are difficult to disentangle due to the varying affective nature of experiences and extended time span (events from birth to now). The present study examines gender differences in internal states language while keeping in mind the limitations of the Bohanek et al., (2005) study.

Research in the laboratory of the present author has also examined internal states language in response to intensely negative experiences in college students. Styers and Baker-Ward (2008) designed a study to examine differences in internal states language based on the

controllability of the experience described in the narrative (e.g., *Was the event in my control or out of my control?*). Seventy-six college students participated in the study and each provided two intensely negative experiences from high school, one of which was controllable and one uncontrollable. Controllable narratives had more self-references and uncontrollable narratives had a higher percentage of positive emotions. With regard to internal states language, in comparison to other studies of young adults' narratives (Bauer et al., 2003; Bohanek et al., 2005), a higher percentage of internal states language was used in the narratives of both types of experiences. Specifically, cognitive internal states (e.g., think, know) were the highest (6% of the narrative) followed by positive emotion (e.g., love, nice) (2-2.5% of the narrative), negative emotion (e.g., sad, hurt) (2% of the narrative), sensory (e.g., feel, heard) (1.75%) and physical terms (e.g., ache, sleep) (0.50%).

Due to the relative paucity of research on the direct relationship between language use and well-being, Styers and Baker-Ward (2008) examined this relationship by comparing density of internal states to: intrusive and avoidant scores on the Horowitz, Wilner and Alvarez (1985) Impact of Events Scale (IES) and scores of subjective distance based on work by Ross and Wilson (2002). The Horowitz IES scale (Horowitz et al., 1985) asks participants a series of questions concerning intrusive and avoidant thoughts occurring over the past seven days. The subjective temporal distance scale (Ross & Wilson, 2002) asks participants to rate how far away the event feels. Feeling farther away from a negative experience is considered to be a positive coping mechanism, whereby the negative event is pushed farther into the past and is no longer owned by the present self (Ross & Wilson, 2002). Beginning with the occurrence of intrusive thoughts, after controlling for time since the event, interview

condition and controllability, all of the following were separately significantly associated with higher levels of intrusive thoughts: a lower incidence of positive emotion terms, a higher incidence of negative emotion terms and a higher inclusion of cognitive terms in the narrative. There was also a trend for a higher usage of physical terms (e.g., any inclusion of physical states and functions, such as ache, cough, sleep) being associated with higher levels of present intrusive thoughts ($p < .10$). There was only one trend for the frequency of present avoidant thoughts; a higher inclusion of cognitive terms was slightly associated ($p = .06$) with higher levels of avoidant symptoms.

With regard to subjective distance, there were several interesting trends between internal states usage and perceptions of subjective time. Similar to the previous analyses, the following analyses controlled for actual time since the event, interview condition and event type. Several trends were found, including the following: higher use of positive emotions was associated with the event feeling farther away in time ($p < .10$), higher use of negative emotions was associated with event feeling closer in time ($p < .10$) and a higher use of sensory/perceptual terms (e.g., see, touch, listen) ($p < .10$) was associated with the event feeling closer in time.

Interestingly, greater use of cognitive terms in our sample was not associated with positive outcomes, which is in contrast to the research conducted by Pennebaker and colleagues (Pennebaker & Francis, 1996; Pennebaker, 1997). Our findings may be explained by the time since the event. In our study, we were interested in reports of high school experiences, or those that are at least a year old and, presumably, dealt with by the individual. Higher levels of cognitive terms in this sample are more problematic since one would assume

the event should already be beyond the individual. In contrast, work by Pennebaker (Pennebaker & Francis, 1996; Pennebaker, 1997) asks participants to consider present thoughts and feelings. One would expect that present situations should call for more thoughts and emotions compared to events occurring much farther in the past. As a result, time since the event should remain a critical variable to consider in future analyses examining the link between internal states and psychological functioning. Thinking about an event may serve a positive function as long as that event is in the more recent past and is viewed in a more positive light.

Internal states research in children. In addition to the work on life stories in children, a large amount of research has been conducted examining children's language use in response to negative experiences.

Beginning with expressive writing techniques (Pennebaker & Francis, 1996; Pennebaker, 1997), only two studies have examined internal states use in child (Reynolds, Brewin & Saxton, 2000) and adolescent samples (Reynolds et al., 2000; Soliday, Garolfalo, & Rogers, 2004). Both studies asked children to write about their deepest thoughts and feelings for twenty minutes a day for three consecutive days. Researchers also followed children over time to assess changes in physical and psychological well-being (Reynolds, Brewin & Saxton, 2000; Soliday, Garolfalo, & Rogers, 2004). Across studies, older children and females had longer narratives (Reynolds et al., 2000), adolescents increased their use of positive emotion terms by seventy-five percent (Soliday et al., 2004) and significant well-being results were found for those children in the expressive writing condition (Reynolds et al., 2000; Soliday et al., 2004). Children and adolescents in the expressive writing condition

experienced: reductions in internalizing and externalizing symptoms if they had previously used a journal (Reynolds et al., 2000), reductions in anxiety (Reynolds et al., 2000), as well as decreases in negative affect and increases in positive disposition (Soliday et al., 2004). Interestingly, Soliday and colleagues (2004) did not find a relationship between expressive writing and reductions in visits to the hospital within their adolescent population. Overall, the positive benefits of expressive writing interventions in childhood and adolescence appear similar to research in adult populations. The present investigation differed by asking participants to discuss two problem experiences from important and non-important self-domains and these were discussed during only one interview occasion.

One follow-up study by Fivush, Marin and Crawford (2007) found some argument against the positive impact of expressive writing interventions in child and adolescent populations. Using the original dataset by Reynolds, Brewin and Saxton (2000), the researchers re-analyzed the data using a different coding scheme. Through a series of partial correlations that controlled for baseline performance, the researchers found several linkages between narrative information and psychological well-being. First, children who discussed interpersonal problems had higher depression and anxiety scores. Second, children who wrote about negative evaluations of others and situational problems had higher anxiety. Third, children who discussed coping in their narratives experienced fewer somatic symptoms. Overall, the discussion of certain issues (e.g., interpersonal problems, negative evaluations of others) was associated with reductions in well-being (Fivush et al., 2007). It is not surprising to see these detrimental effects as children in other studies who repeatedly discuss interpersonal problems or negative evaluations of others are practicing rumination

(Hampel & Peterman, 2005; Rose & Rudolph, 2006) or co-rumination (Rose, 2002; Rose & Rudolph, 2006), which are both already typical cognitive processes present in this age group (Hampel & Peterman, 2005; Rose, 2002; Rose & Rudolph, 2006). If a child is asked to focus on the same negative experience for a period of time, and to keep writing even when they run out of things to say, it seems only natural that they would begin to ruminate on the experience. The current study examined narrative accounts of experiences on one occasion, in order to avoid aiding ruminative processes in child and adolescent samples.

A few studies examining children's changing narrative accounts of a specific event provided interesting results, not directly related to the use of internal states language. Across these studies, children were not directed to continue talking about the same event for three days, but were asked about the same event across two time points, immediately after the experience and again a few weeks to one month later. Baker-Ward, Eaton and Banks (2005) and Eaton (2003) examined 9 to 11 year olds' memory for a season ending soccer tournament. Across these studies, there were both those who won (positive outcome) and those who lost the game (negative outcome), allowing for the examination of different sets of experiences surrounding the same event. In the study by Baker-Ward et al. (2005), children in the negative outcome group used more interpretative comments (e.g., "They were really good" "We played our hardest") and more metacognitive terms (e.g., think, remember) than those in the positive outcome group. In this study, it appeared that while the lasting effects of the season ending game were limited, participants who experienced a negative outcome still felt the need to validate their experience by using more evaluations and reflections in their narratives. Eaton (2003) found similar results in her dissertation. Children in the positive

outcome group included more cohesive terms at the first interview, but by the second interview (approximately one month later), children in the negative outcome group were using more cohesive devices and those in the positive outcome group were using fewer. As Baker-Ward, Ornstein and Starnes (2009) point out,

Even a championship recreational league match may have few continuing consequences, but a competition that results in a decision about the direction of a young athlete's further athletic career may further require interpretation and assessment. (p. 33)

The present investigation aimed to address this issue by examining events that were self-threatening, in that they were perceived by the child to be important and to have potentially lasting implications.

Research by the present author followed up with some of the soccer study data with 9 to 11 year olds (Koenig, 2004; Koenig & Eaton, 2004). A correlational analysis found that children who lost, who also had higher global self-worth scores, evidenced a positive change in adversative cohesion over time. Adversative cohesion includes cohesive conjunctions such as "but, so, if, because." These indicate a dependent relationship between clauses (Shapiro & Hudson, 1991). The results appeared to suggest that high self-esteem individuals find a way to externalize the threat to self. For instance, the child may say, "we lost but it was the referee's fault." It is possible that children in this study were using dis-identification or discounting (Harter, 1999; James, 1892/1968; Steele, 1997) with the experience or with the overall importance of the event to the self. It is also possible that children were re-structuring their meaning (Park & Ai, 2006) surrounding the situation to externalize the blame so that the

loss would not negatively impact self-perceptions. The present study further investigated developmental differences in externalization.

Several studies have examined internal states language in children's narrative accounts of a single episode. Studies have examined children's memories for: emergency room injuries (O'Kearney et al., 2007; Peterson & Biggs, 1988), different types of emotions (Fivush, Sales & Bohanek, 2008; Peterson & Biggs, 2001), a tornado (Bauer et al., 2005), a hurricane (Sales et al., 2005) and positive and negative events (Baker-Ward, Styers & Turner, 2008; Fivush, Hazzard, Sales, Sarfati & Brown, 2003).

Overall, these studies found that narratives of events are longer with age (Peterson & Biggs, 1998) and a greater inclusion of internal states terms in narrative accounts across the lifespan (Pennebaker & Stone, 2003; Peterson & Biggs, 1998, 2001). In addition, greater levels of internal states are provided for negative experiences across ages 3 to 12 (Bauer et al., 2005, Fivush et al., 2003; Peterson & Biggs, 2001) and 2 to 12 year olds use more cognitive terms in their narratives of negative compared to positive experiences (Bauer et al., 2005; Sales et al., 2005; Fivush, Sales & Bohanek, 2008). Interestingly, stress has contrasting effects on internal states usage, with some researchers arguing that more stress is associated with lower internal states (Peterson & Biggs, 1998; Sales et al., 2005) and others finding that more stress is associated with higher internal state usage (Fivush et al., 2003). Finally, it is important to mention that studies which have examined density of ISL by adjusting frequencies for narrative length, rather than the total number of inclusion, have found children ages 2 to 18 do not differ in ISL density (Baker-Ward et al., 2008; Bauer et al., 2005). Some gender differences have been found, suggesting pre-adolescent and adolescent

girls use more emotional terms in their narratives (Fivush et al., 2007) and females in these age groups use more cognitive terms (Habermas & de Silveira, 2008).

Relation to parental use of ISL also appears to be dependent upon age and discussion. For example, in a study with mothers and children (ages 2 to 12) who discussed a tornado together, children began to mirror the emotion usage of their mothers at the approximate age of 5 and older. Prior to this age, children were using equal amounts of positive and negative emotion terms when describing the negative experience (Bauer et al., 2005). However, when mothers and children discuss events separately from one another, there is no relation between mother and child internal states language, at least in pre-adolescent populations (Fivush et al., 2008). Additionally, mothers were found to use more internal states than their children (Fivush et al., 2008). These results suggest two main ideas, first that internal states usage increases across the lifespan. Second, internal states can be investigated separately from the family context, as mothers and children do not always use equal amounts of internal states, at least beginning in pre-adolescence.

Two studies specifically examined how narrative language use relates to well-being. In the first study by Sales et al., (2005) children were interviewed by an experimenter immediately after Hurricane Andrew and again six years later. At ages 3 to 4, providing more information (i.e., longer narratives) was associated with lower PTSD scores immediately after the storm. In addition, providing more information and a higher percentage of positive emotion at ages 3 to 4 was associated with lower PTSD scores six years later. Finally, when children were 9 to 10 years old, those children who had sustained more damage to their homes provided less information but included more cognitive and negative

emotion terms, suggesting a greater need to make sense of the experience (no relations to PTSD symptoms). The researchers suggest this pattern of results illustrates the power of positive thinking, such that positive emotions may have helped children cope with stressors in a more effective manner. Similar to work by Pennebaker and colleagues (Pennebaker & Francis, 1996; Pennebaker, 1997), the results illustrate that the way an event is remembered may impact psychological well-being, even in child populations.

The second study by O’Kearney et al., (2007) investigated 7-to 16-year olds’ narrative accounts of an injury requiring hospitalization. In contrast to previous studies on internal states language in children finding high percentages of ISL (e.g., 2-6% of narrative) (Baker-Ward et al., 2008; Bauer et al., 2005; Fivush, 2003; Sales et al., 2005), the researchers found a very small percentage of emotion words in the narrative (0.33% of the narrative). Sensory/perceptual terms and conceptual terms also averaged one percent or less of the entire narrative for all age groups. Despite the small percentages of internal states, researchers found a significant relationship between the usage of more sensory/perceptual terms and more negated conceptual terms (e.g., *I don’t know or I don’t remember*) with lower levels of intrusive symptoms (O’Kearney et al., 2007). It should be noted that while the researchers found significant differences, these were correlational in nature. In addition, in contrast to previous studies, with more simple prompts, this study explicitly asked children to “describe the accident to me as if it were happening right now” (p. 825). This type of wording does not allow for the child to take a step back from the event and create meaning-making (Park & Ai, 2006). Instead, children are asked to re-experience the event for the interviewer, which may explain why there was a relationship between sensory/perceptual terms and intrusive

thoughts. The present study accounted for this issue by asking children to reflect back upon an experience instead of encouraging participants to mentally relive the experience.

In contrast to previous studies, Baker-Ward et al. (2008) asked 4th/5th graders, 7th/8th graders and college adults for accounts of everyday (moderate) positive and negative experiences. In addition, in contrast to previous studies with children (Baker-Ward, Eaton & Banks (2005); Bauer et al., 2005; Eaton, 2003; Fivush, 2003; O’Kearney et al., 2007; Sales, et al., 2005), this study explicitly asked children to include internal states in their narrative. All children were asked to provide a narrative of one moderately disappointing experience and one moderately satisfying experience on a tape recorder. Preliminary results with 19 fourth/fifth graders (13 female), 8 seventh/eighth graders (7 female) and twenty-five college freshman (13 female) are presented to illustrate internal states usage across pre-adolescent, adolescent and emerging adulthood narratives for everyday experiences. Internal states were coded using Linguistic Inquiry and Word Count (LIWC) (Pennebaker, Francis & Booth, 2001). Overall, college students provided longer narratives than the younger age groups. Interestingly, while the two younger age groups had shorter narratives, internal states accounted for a similar percentage of their negative narratives compared to college students (see Figure 1).

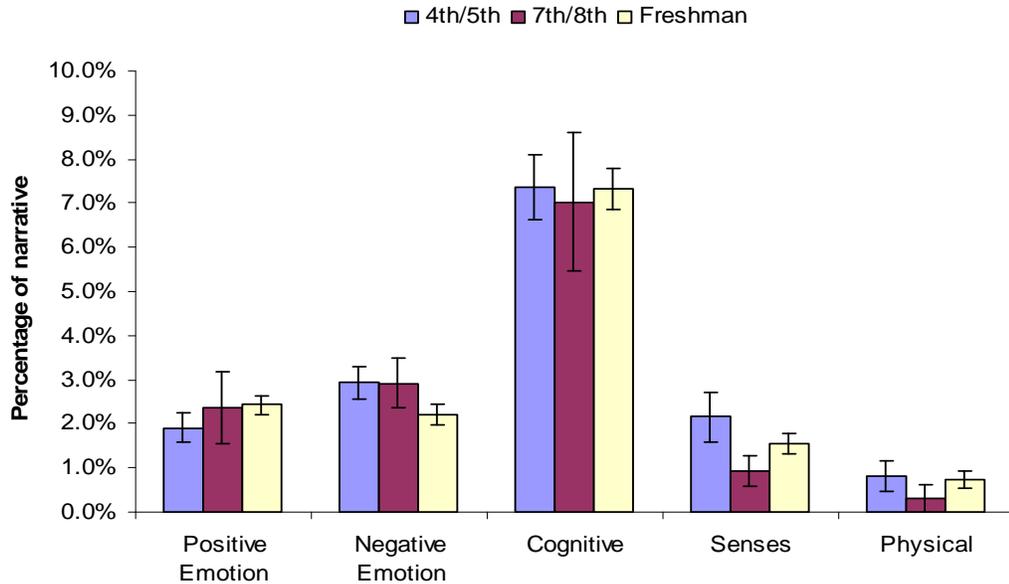


Figure 1. Internal states language for moderately negative experiences (LIWC)

Since previous research by Koenig (2004) has suggested differences in adversative language use (e.g., but, except) in pre-adolescent narratives, one other set of language variables was examined. Specifically, the use of exclusive clauses (e.g., but, except, without; similar to adversative clauses; Koenig, 2004) was analyzed to assess developmental differences in the use of exceptions following a disappointing versus a satisfying experience. Interestingly, 7th/8th graders differed from the other age groups in their use of exclusive clauses (Figure 2).

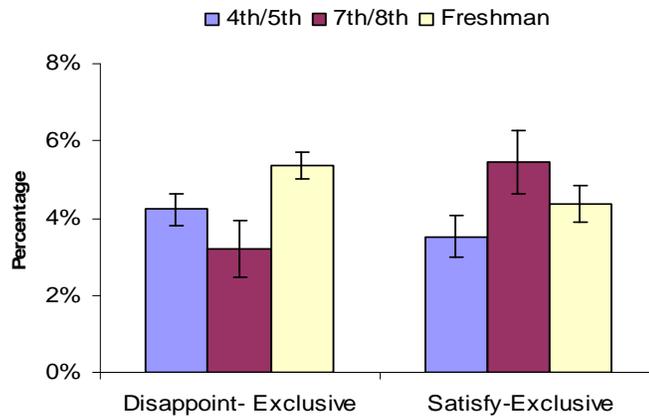


Figure 2. Language use: Exclusive terms (LIWC)

With regard to the inclusion of exclusive words (e.g., but, except) it appears that college students used the most, followed by fourth/fifth graders and then seventh/eighth graders in response to the disappointing experience. Interestingly, the opposite pattern was true for the satisfying experience. Seventh/eighth graders used more exclusive words in response to the satisfying experience compared to the other two age groups (Figure 2). These results further suggest a need to examine developmental differences in exclusive words as they relate to well-being. It is possible that creating exceptions to the rule (e.g., exclusions) may prove beneficial in protecting the self from the negative experience. These exceptions may also serve as a possible method of discounting (Harter, 1999).

In contrast to recent suggestions by Fivush et al. (2007), fourth/fifth graders are able to adequately give voice to everyday experiences at similar levels to other age groups, when density of ISL is considered rather than mean levels. Additionally, the type of questioning, evoking internal states language rather than rumination (Fivush, Marin & Crawford, 2007; Reynolds, Brewin & Saxton, 2000) or mental reliving of the actual experience (O’Kearney,

Speyer & Kenardy, 2007) may offer a different picture on the relationship between internal states usage and indicators of well-being. Further, this research has extended the work of Pennebaker and Stone (2003) who examined narrative accounts of traumatic and everyday experiences across 3,280 participants from forty-five studies. By examining age cohorts, the researchers found significantly higher percentages of the following types of language within each older age group: cognitive complexity (e.g., use of words six letters or longer), cognitive terms, insight (e.g., think, know) and exclusive words (e.g., but, except). The two youngest age groups in this sample were ages 8 to 14 and ages 15 to 24. While it is unclear whether these age groups experienced significant gains, due to a lack of investigation of changes across childhood and adolescence, figures appear to indicate increases which may or may not be significant. Additionally, these two youngest age groups span a series of developmental periods, suggesting that these results may not be sensitive to changes ongoing from pre-adolescence through adolescence. The current study remedies these issues by interviewing different age groups of children and adolescents at specific stages of self-development (Harter, 2006).

Issues with internal states research. The majority of studies examining internal state or language usage have observed narrative accounts of unfamiliar negative and traumatic event experiences such as emergency room injuries (O’Kearney et al., 2007; Peterson & Biggs, 1988), a tornado (Bauer et al., 2005), and a hurricane (Sales et al., 2005). Studies in the medical literature have also been limited to more stressing experiences, examining children’s and adolescents’ memory and coping responses for enduring and traumatic medical conditions such as childhood cancer (Kameny & Bearison, 2002; Woodgate &

Degner, 2003). It should also be noted that studies investigating childhood cancer have not examined internal states languages in narrative reports (Kameny & Bearison, 2002; Woodgate & Degner, 2003). While it is certainly important to examine children's memory for these experiences, it is also equally important to understand how children recollect normative experiences that may challenge one's view of self. These experiences of self-threat are both familiar and occur on a much more limited time span than events such as childhood cancer. Only one study has explicitly examined narrative accounts of experiences that threaten one's view of self (Campbell et al., 2003). However, Campbell et al. (2003) did not specifically examine language usage as it relates to psychological outcomes or to developmental differences in accounts of the experience.

Additionally, there are some issues with prompting in the current literature on internal states language (Fivush et al., 2007; O'Kearney et al., 2007; Reynolds et al., 2000). It appears that a difference in prompting may elicit different narrative reports from children and adolescents. This study resolved these issues by examining self-threatening experiences as defined by the participant and prompted children to include internal states language in their narrative, while encouraging them to be self-reflective on their experiences.

Finally, very few studies have examined the relationship between language use and well-being in adulthood (Amir et al., 1998; Fivush et al., 2003; Pennebaker & Francis, 1996; Pennebaker et al., 1997; Styers & Baker-Ward, 2008) and even fewer have explored a direct relationship in children's narrative accounts of experiences (Fivush et al., 2007; O'Kearney et al., 2007; Sales et al., 2005). Research examining the relationship in children has been limited, as researchers did not explicitly link internal states with well-being (Fivush et al.,

2007), asked children to mentally relive the experience (O’Kearney et al., 2007) or linked language use at age 3 to 4 to psychological functioning at age 9 to 10 (Sales et al., 2005). This study explored the link between language use and well-being more systematically than has been the case in previous investigations.

The current study

A recent push in the literature has called for research examining narrative as it relates to self-understanding (McLean et al., 2007). The present investigation attempted to answer that call by examining cross-sectional differences in narrative accounts of a normative self-threatening experience involving a salient and valued dimension of the self. In order to make further comparisons, this study compared developmental differences in narrative accounts of events high and low in self-relevance. Additionally, since there has been a lack of research examining the link between language use and well-being in children and adolescents, this study examined language use as it related to dis-identification or discounting (Harter, 1999; James, 1892/1968; Steele, 1997) intrusive and avoidant thoughts (Horowitz et al., 1979) as well as coping with the experience (e.g., assistance seeking, problem solving, cognitive and behavioral avoidance) (Brodzinsky et al., 1992). Four key aims were proposed, each with several associated hypotheses.

Aim 1: Investigate age differences in language use as it relates to self-threatening events varying in relevance of the domain to the self.

A. College students will use more ISL in response to the self-threatened valued domain compared to the least valued self-threat event. The two younger age

groups will not differentiate ISL usage between their most valued and least valued domain.

Aim 2: Investigate age differences in language use as it relates to a specific social psychological self-protective mechanism, discounting (Harter, 1999) otherwise known as dis-identification (James, 1892/1968; Steele, 1997).

- A. College students will use more exclusions in their narrative followed by 4th/5th graders and followed lastly by 7th/8th graders. Exclusions will be directly related to a change in importance of the event over time.
- B. Cognitive term usage will be inversely related to a change importance of the event over time. Age will moderate this relationship, such that cognitive term usage will be more strongly related to a lessened importance for the college age group, compared to the two younger age groups.
- C. Incidence of positive re-appraisals of the event will be inversely related to a change in the importance of the event. Age differences will be examined; however, no a priori assumptions are made.

Aim 3: Investigate age differences in language use as it relates to coping mechanisms.

- A. Higher use of assistance seeking and problem solving will be directly related to use of internal states language in the narrative whereas use of cognitive avoidance and behavioral avoidance will be inversely related to use of internal states language in the narrative for all age groups. Age differences will be examined; however, no a priori assumptions are made.

Aim 4: Investigate age differences in language use as it relates to psychological outcomes.

- A. Cognitive term usage will be inversely related to the reported frequency of intrusive and avoidant thoughts. Age will moderate this relationship, such that cognitive term usage will be more strongly inversely related to intrusive and avoidant thoughts for the college age group, compared to the two younger age groups.
- B. Positive emotion term usage will be inversely related to intrusive and avoidant thoughts. Age differences will be examined; however, no a priori assumptions are made.
- C. Negative emotion term usage will be directly related to intrusive and avoidant thoughts. Age differences will be examined; however, no a priori assumptions are made.
- D. Incidence of positive re-appraisals of the event will be inversely associated with the mean frequency of reports of intrusive and avoidant thoughts. Age differences will be examined; however, no a priori assumptions are made.

METHOD

Participants

Children and adolescents were recruited from three communities in the Southeast through community after-school clubs, a University-affiliated enrichment program, and personal connections. Parents of all 4th, 5th, 7th and 8th grade children at these locations received letters describing the research and requesting written consent for their child or

adolescent's participation (see Appendix A). Only one of the 107 children and adolescents for whom parental consent was obtained declined participation at the time of the interview. The young adult group consisted of college students who were recruited from the University's psychology subject pool. College students signed up for the research study online through Experimentrix and provided their written consent (Appendix A) for participation.

A total of 55 older elementary participants (30 males, 25 females), 51 middle school participants (24 male, 27 female) and 54 college students (22 male, 32 female) participated in the study. One elementary school female was removed from the sample since she was 13.5 years old at the time of the interview and had not yet entered middle school. With the removal of this participant, the older elementary age group consisted of 54 students who were entering 4th grade through those entering 6th grade (Mean age = 10.46 years, SD = 0.94, Range = 8.68-12.16). None of the children had entered middle school at the time of the interview. The middle school age participants had spent at least six months in middle school and had not yet entered high school (Mean age = 13.03 years, SD = 0.94, Range = 11.66-14.77). The young adult sample consisted entirely of undergraduates, the majority of whom were traditional students (Mean age = 20.61 years, SD = 4.57, Range = 18.34-28.49). A one-way between groups analysis of variance confirmed the expected difference among the age groups ($F_{[2,154]} = 676.99, p < .001, \eta^2 = .89$). The two younger groups were recruited from facilities and locations serving middle income families. Approximately 68% self-classified as European American, 10% as African-American, 6% as Asian and 16% as Other (e.g., Native American, American, Hispanic, Mixed). As a token of appreciation, the two younger age

groups were given a five dollar gift card for their participation in this study and college students received partial course credit.

Interviewers

Interviewers included six undergraduate students, two post-undergraduate students, two graduate students and the principal investigator. Three of the eleven researchers were male. A large group of researchers was required to conduct multiple simultaneous interviews at the various study locations. All interviewers were trained in the use of the interview protocol and practiced interviewing another adult prior to their interviews with children. In addition, the principal investigator observed all undergraduate interviewers once in an interview with a college student to insure there was compliance with instruction.

Additionally, in order to ensure consistency across interviews, the lead investigator listened to other interviewer's discussion of event instructions and prompting. If inconsistencies in prompting were noted, the lead investigator immediately discussed discrepancies with the interviewer. However, the absence of location effects (see preliminary analyses) and differences in language use argues against the possibility of interviewer drift.

The principal investigator completed 50% of the total interviews. Two undergraduate researchers each completed 15% of the interviews. All other researchers interviewed ten or fewer participants. Using a multivariate between-within analysis of variance with internal states language (e.g., positive emotion, negative emotion, cognitive terms, sensory terms and physical terms) as the dependent variable, interviewer as the between subjects factor (principal investigator versus others) and importance self-category as the within-subjects factor, there were no significant effects or interactions involving the interviewer F s (2.586,

393.04) ≤ 1.74 , $ps \geq .14$. A second model was conducted predicting exclusion terms, however, no effects or interactions were significant $F_s(1,152) \leq 0.07$, $ps \geq .80$.

Materials

Children were interviewed and administered questionnaires concerning two self-threatening experiences (varying in importance) from their recent past. Demographic data on the participants' grades, ages, gender, socioeconomic status and ethnicity was also collected (See Appendix B for the full questionnaire).

Horowitz IES Scale. The Horowitz et al. (1979) Impact of Events scale was used to assess current intrusive and avoidant thoughts surrounding the self-threatening experience. The scale has been previously used successfully with child samples in our Memory and Narrative Development laboratory (Baker-Ward et al., 2008) and with adolescent samples (see Joseph, 2000). The scale was created based on statements from adults used to describe recent feelings of distress (i.e., within the past week) surrounding recent life changes. Split-half reliability of the scale is high ($r = 0.86$) and internal consistency of the subscales is also high (Intrusion = .78, Avoidance = .82) (Horowitz et al., 1979). The scale asks individuals to rate the frequency of intrusive and avoidant thoughts, using the following scale: Not at all (0), Rarely (1), Sometimes (3) and Often (5). There are seven statements related to intrusive thoughts and eight statements related to avoidant thoughts. For the purposes of this study, intrusive and avoidant thoughts were coded on a linear 0 (Not at All) to 3 (Often) scale in order to examine mean reports of intrusive and avoidant thoughts from the past week. In comparison to prior reliability estimates by Horowitz et al., (1979), internal consistency for

the subscales was also high within the present sample (Intrusion alpha = .88, Avoidant alpha = .88).

Coping Questionnaire. The Coping Scale for Children and Youth (Brodzinsky et al., 1992) was used with this sample. The scale has been validated for use with children ages 10 to 15. Each of the four categories has high levels of internal reliability, as follows: assistance seeking ($r = .72$), cognitive-behavioral problem solving ($r = .81$), cognitive avoidance ($r = .80$) and behavioral avoidance ($r = .70$). The scale also has a high test-retest reliability of .7 to .8. Participants are asked to rate how often they enacted some behavior in response to a threatening experience, using a 0 (Never) to 3 (Very Often) point scale. There are a total of four questions on assistance seeking, eight questions for cognitive behavioral problem solving, eleven questions concerning cognitive avoidance and six questions concerning behavioral avoidance. In order to compare different patterns of coping, mean scores were calculated for each coping category. Although this scale has not been used previously with college age students, all participants were provided with the same measures and questionnaires in order to make direct comparisons between age groups.

Self-perception profiles. It should be noted that no hypotheses involved differences in global self-worth perceptions. However, global self-worth was assessed to examine possible variability in this measure. Low variability was anticipated based on previous research with this population, illustrating that approximately 80% of 4th through 8th graders and 75% of college students evidence high global self-worth (Styers, 2007). The majority of participants were expected to report average to high levels of self-worth. In order to examine age group differences in global self-worth, the Harter self-perception profile for children (1985) was

modified to examine global self-worth differences across all age groups. Typically, the Harter (1985) version of the scale is used with children ages 8 to 12 years old. However, in order to examine group differences, the same scale was used for all participants and the wording was changed slightly. The six self-worth questions were rephrased to begin with “Some people” instead of “Some kids.” According to the manual (Harter, 1985) reliability for the global self-worth domain ranges from .78 to .84. It should be noted that even though one scale was modified to accommodate the group as a whole, the actual Harter self-perceptions profiles for adolescents (Harter, 1988) and college students (Neeman & Harter, 1986) are similar with the key difference being that these profile questions begin with “Some teenagers” and “Some students.”

Change in Importance. Change in the importance surrounding the reported experience was assessed through two Likert scale questions developed by the investigator. The first question asks, “How important was this event to you at the time that it happened?” and the second question asks, “How important is this event to you now?” Participants responded on a scale ranging from “Not at all” (0) to “Extremely” (6).

Procedure

After informed consent and assent were obtained, investigators interviewed participants in small groups of 3 to 5 in areas in their schools, community facilities, or homes, representing the contexts through which participants were recruited. Interviewers asked participants to narrate their experiences aloud in a taperecorder, and assisted them in moving to separate locations within the testing room to do so. The majority of data was collected through small groups; however, participants recorded individual narratives

privately. All participants then filled out questionnaires in the same room with the interviewer present to assist younger participants as needed.

As their first task, participants were asked to fill out the modified global self-worth scale (Harter, 1985, 1988; Neeman & Harter, 1986). For their second task, participants were asked to rank the importance of different self-domains based on competencies proposed by Harter (1986, 1988) and Neeman and Harter (1986).

Participants were read the following prompt:

I'd like to get to know you a little more before we begin. Here are some things that other kids [teenagers] [college students], have mentioned are really important to them. Could you listen to this list and rate each of these using the scale below. So for each of these ratings, please tell me how important each one is to you using this scale. [Scale went from 0 "Not at all" to 6 "Extremely"]

All participants were shown the following three self-categories: sports, friendships and school. Adolescents and college students also had the following two additional domains: having a boyfriend/girlfriend, having a job. Domains were chosen based on self profiles (e.g., social acceptance, academic competence, athletic competence, romantic appeal, job competence) from the Harter (1986, 1988) and Neeman & Harter (1986) scales. In order to ensure participants discussed similar types of events, the possible range of events was narrowed to three or five domains¹. Based on self-ratings, the interviewer then asked participants to discuss two separate events, one from their highest rated self-category and one from their lowest rated self-category. If the participant could not think of an event from the past year, the interviewer asked the participant to think farther back in time. If the participant still could not think of an event within the pre-determined category, the interviewer asked the

¹ Other potential self-profiles were less specific or similar to the previously determined domains (e.g., behavioral conduct, physical appearance, close friendships).

participant to report an event from a different self-category with a similar low or high importance rating.

The following prompt was used to elicit the specific self-threatening experience and was based on current research by Baker-Ward et al. (2008) as well as the prompt from the coping questionnaire used in this study (Brodzinsky et al., 1992):

All children and teenagers (adults) have some problems they find hard to deal with and that upset them or worry them. Think about a conflict, issue or problem that you had from this past year that involved [insert self-category domain here]. It should be something that meant things weren't going the way you hoped they would. Can you think of something like this? What is it? [Interviewer waits to hear an experience that fulfills the correct category.]

I'd like for you to make a tape recording that tells all about the time you [event described]. I want to know what you remember about what happened. I also want to know how you think and feel about what happened.

I'm going to move to a corner of the room while you talk into the tape recorder. That may seem a little weird, but there are two reasons why I want to do it that way. One big reason is so that what you say will be private. Someone who works with me will write down what is on the tape, but they won't know who is talking and I won't know which interview is yours. The second reason is that we talk to people of all ages including adults [for college group: including children], and we want to interview everybody in just the same way. Do you have any questions about what we're going to do?...Remember to talk about what happened and how you think and feel about what happened.

Following the narrative description of the self-threatening experience, participants filled out several questionnaires, including: ratings of event intensity, event importance, self-relevance, Horowitz et al. (1979) IES scale, and the Coping Scale for Children and Youth (only administered for most important self-category narrative) (Brodzinsky et al., 1992).

Prior to the elicitation of a second narrative, participants filled out a basic word category task, which asked them to write down the first three words they could think of that

fit within five different categories listed by the researcher. This neutral task was added to reduce any carryover effects.

In order to elicit two narratives of self-threatening experiences varying in importance, interviewers also asked each participant to narrate a self-threatening experience in a different self-category domain into the tape recorder using the following prompt:

Like I mentioned before, all children and teenagers (adults) have some problems they find hard to deal with and that upset them or worry them. Think about a conflict, issue or problem that you had from this past year that involved [insert self-category domain here]. It should be something that meant things weren't going the way you hoped they would. Can you think of something like this? What is it? [Interviewer waits to hear an experience that fulfills the correct category.]

I'd like for you to make a tape recording that tells all about the time you [event described]. Do you have any questions about what we're going to do?... Remember to talk about what happened and how you think and feel about what happened.

The order of narratives (threat in valued vs. least valued self-category) was counterbalanced across participants. Following the description of the second experience, participants were asked to fill out an additional set of ratings including: the intensity of the experience, event importance, relevance to the self, IES questions (Horowitz et al., 1979) and final demographic questions.

In order to insure that all participants left the study on a positive note, interviewers asked each interviewee to describe into the tape recorder something that would happen in the near future to which he or she was looking forward. The interviewer remained present while these recordings were made. After filling out all questionnaires and providing all narratives, participants were given five dollar gift cards (course credits for college students) and thanked for their participation.

Coding

Narratives were transcribed verbatim and coded for internal states and positive reappraisal. For the positive reappraisal category, 20% of the narratives were randomly selected and were independently coded by one undergraduate researcher to enable an assessment of reliability with the principal investigator who coded all of the narratives.

Internal States. Internal states were coded using the Linguistic Inquiry and Word Count (LIWC) computer program (Pennebaker, Francis & Booth, 2001). The dictionary contains 2,300 words and word stems which may fall into one or more categories. For example, “cried” falls into the following four categories: sadness, affect, negative affect and past tense. As a result, all four categories will evidence increases once the specific word (e.g, cried) is identified in the narrative. External validity is high, with hand coding and LIWC coding in key domains (i.e., those involving internal states language or exclusions) ranging from correlations of .39 to .75 (Pennebaker et al., 2001). The LIWC program was chosen due to the wide use in the literature investigating internal states language in adult (e.g., Bohanek et al., 2005; Fivush et al., 2003; Pennebaker & Francis, 1996; Pennebaker et al, 1997; Pennebaker & Stone, 2003; Styers & Baker-Ward, 2008) and child populations (e.g., Pennebaker & Stone, 2003; Reynolds et al., 2000; Soliday et al, 2004; Styers et al., 2008).

After narratives were transcribed, they were cleaned based on the rules established in the LIWC manual (Pennebaker et al., 2001). Specifically, spelling errors were corrected, nonfluencies (e.g., hm, uh) and fillers (e.g., you know) were flagged in the program prior to running the analysis. In addition, any transcriber comments or comments not relative to the specific narrative (e.g., participant stops talking and starts singing or asks the transcriber to

remove their name from the tape) were removed, along with any repetitions in the narrative. LIWC provides an output of the percentage of different types of language in the narrative and total word count. Percentage of internal states in the narrative was retained for the following categories: positive emotions (e.g., happy, good), negative emotions (e.g., nervous, cry), cognitive processes (e.g., cause, know), sensory and perceptual processes (e.g., see, touch, felt), and physical states (e.g., ache, cough). Additionally, exclusions were retained (e.g., but, except, without).

Positive Reappraisal. Positive reappraisal coding was based on the multiple coping research studies finding instances of positive reappraisal in response to negative situations (Folkman et al., 1986; Altshuler & Ruble, 1989; Losoya et al., 1998; Anshel & Delaney, 2001; Rice et al., 2007). Positive reappraisal was defined as any effort to create positive meaning by focusing on personal growth (e.g., “I’ve grown as a person”) or putting a positive spin on things (e.g., “It’s okay because everyone loses sometimes”). Positive reappraisal was initially coded using a code of N (not present in the narrative) or P (present in the narrative). However, after reading through the narratives, interviewers determined that the narratives could be more appropriately described through the use of four separate categories. The four categories and associated examples are described in Table 1.

The principal investigator coded all of the narratives for positive reappraisal and a trained undergraduate coded 20% so that reliability could be assessed. An intraclass correlational analysis was conducted to establish reliability between two raters on this categorical variable (Shrout & Fleiss, 1979). Using a one-way random effects model, the single measures intraclass coefficient indicated a high level of agreement (ICC = 0.90). A

one-way random effects model was used because there was only one random effect (i.e., randomly chosen 20% subsample) and the only error is in the rater (i.e., between raters). Differences in codes were resolved through later coder agreement and these resolved codes were used in the following analyses.

Table 1. *Codes for positive reappraisal*

Codes	Definition & Examples
NU- Non-use	<p>Narrative just ends. There is no attempt to reappraise the situation. No mention of positive reappraisal or ends on a negative note.</p> <p>Examples: <i>“I can’t solve this problem, I can’t deal with it”</i></p>
AA- Attempt at Appraisal	<p>Narrative makes an attempt at reappraisal of the situation but the reappraisal is not necessarily positive and is NOT explicit. The individual is creating a wrap-up to the event and is not taking away anything from the situation. There is no recognition of positive aspects of a negative situation.</p> <p>Examples: <i>“So, when I told her my real feelings then she started to cry but then we made up.”</i></p> <p><i>“We were close to winning so that made me upset but now I’m okay with it.”</i></p>
PR- Positive Reappraisal	<p>Narrative uses positive reappraisal by putting a positive spin on the event. The reference is explicit and the appraisal is specific to that situation. The narrator acknowledges the positive components of a negative situation, but it is only specific to that situation (not extended into the future or life story). There is no further reconciliation of the negative and positive.</p> <p>Examples: <i>“I had a good time even though I missed basketball, I still had fun.”</i></p> <p><i>“It was not the guys fault but I really felt, really mad about it. I got over it. I thought it was actually pretty cool at first, it was basically the first bad injury I ever had, so that was pretty good.”</i></p>
PR+PG- Positive Reappraisal & Personal Growth	<p>The narrator mentions personal growth from the situation. There is some change that will continue forward in time and the individual is considering their psychological selves in a certain way. This goes beyond the previous stages and is specifically related to self and personal insight. The instance is integrated with the life story and may come across as a life lesson learned. (This must also involve some positive spin/acknowledgement.)</p> <p><i>“I finally thought about that and I was like Wow, I just wanted to play to get on the team and say I made the team. It is no way to be motivated at all and I realized that my passion for the game wasn’t there and my mind wasn’t in enough. I didn’t have a strong enough mental connection with the sport to stay in it and want to play throughout the whole four years I’m going to be here at school, and I just realize that I didn’t want to play a sport as much as I thought I did. And it was kind of discouraging at first but now it’s like I have new motivations to look forward to with my education as a whole, not just my athletics.”</i></p> <p><i>“It is not fun to lose your best friend after that long but it was also an eye opener to a lot of things, like how the person really is and things about yourself. So, overall, even though it was negative, I think it has had a positive effect on my life.”</i></p>

RESULTS

A series of preliminary analyses were completed before the main hypotheses were tested. These initial tests were conducted in order to examine possible violations of assumptions and the presence of confounds, including variations across demographics as well as tests of compliance with instructions. Following the report of these analyses, some descriptive analyses of the data are provided, followed by tests of main hypotheses. Descriptive analyses for dependent variables associated with a specific set of main hypotheses (e.g., coping, intrusion/avoidance) are presented in the main hypotheses section. All analyses use $\alpha = .05$ for tests of significance.

Preliminary Analyses

Demographic and questionnaire differences in language use. Potential differences in demographic characteristics across importance self-categories (most versus least important self-categories) could have suggested variables to control for in subsequent analyses. In order to determine if language use differed by demographic characteristics, four mixed between-within analyses of variance were conducted separately for cognitive terms, positive emotion terms, negative emotion terms and exclusions in the narrative. Between-participants factors were ethnicity and community. The within-participants factor was self-importance category (most versus least) for all analyses. Only one main effect of ethnicity was observed. Caucasian participants, in comparison to respondents in the other ethnicity category used a higher percentage of cognitive terms in their narratives compared to respondents in the other ethnicity category ($F(3,150) = 3.82, p = .01, \eta^2 = .07$). However, because the “other”

racial/ethnic group in itself has a large amount of variance in ethnicity, subsequent analyses did not control for ethnicity.

Additional analyses examined internal states language differences with location as the between-subjects factor and self-category importance as the within-subjects factor. Because college students were all recruited from the same location (one university campus) they were not included in the analysis and the effect of location was examined among only the two younger age groups. There were no significant effects of location for any analysis ($F_s(2,97) \leq 2.73, p_s \geq .08$). Hence, subsequent analyses examining internal states language did not control for demographic differences.

Further descriptions of analyses and means for each demographic variable by importance self-category can be found in Appendix C. As a result of these preliminary analyses, tests investigating language use did not control for ethnicity or location.

Order of questionnaire completion. As discussed in the method, participants completed the questionnaires in one of two different orders. In order to determine if language use differed by questionnaire version, four mixed between-within analyses of variance were conducted separately for cognitive terms, positive emotion terms, negative emotion terms and exclusions in the narrative. The between- participants factor was questionnaire order. The within-participants factor was importance category (most versus least) for all analyses. Across all these analyses, none of the main effects or interactions involving version were significant ($F_s(1,152) \leq 2.67, p_s \geq .11$). Further descriptions of analyses and means for language use by importance self-category for each questionnaire version can be found in

Appendix D. As a result of these preliminary analyses, analyses investigating language use did not control for questionnaire version.

Manipulation check for different types of events. Analyses of importance self-category ratings, importance of the specific event at the time, intensity at the time and self-relevance ratings were conducted to insure that participants complied with instructions for providing two events (differing in importance and self-relevance) of moderate to high intensity. Four mixed between-within analyses of variance were conducted to analyze differences in the following four separate ratings: importance self-category ratings, importance of the specific event at the time, intensity of the specific event at the time and self-relevance ratings. In each analysis, the between-participants factors were gender and age group (elementary, middle, college). The within-participants factor in each model was event importance self-category (most versus least important category). Further descriptions of analyses, significance tests and means are presented in Appendix E. In summary, the results supported the assumption that interviewers would succeed in choosing different event types. Narratives significantly differed in self-category importance, with the most important self-categories rated as higher in overall importance than the least important self-categories ($F(1,149) = 631.46, p < .001, \eta^2 = .81$). All participants verified in later ratings that events differing by self-importance category also varied by event-specific importance at the time of the experience ($F(1,147) = 23.52, p < .001, \eta^2 = .14$) and at the time of the interview ($F(1,148) = 17.32, p < .001, \eta^2 = .11$). With regard to event intensity, participants viewed events from most important self-categories as more intense at the time of the experience ($F(1,148) = 16.67, p < .001, \eta^2 = .10$) and at the time of the interview ($F(1,148) = 11.57, p =$

.001, $\eta^2 = .07$), compared to events from least important self-categories. Interestingly, across all participants, narratives from most important self-categories were rated as more self-revealing compared to narratives from least important self-categories ($F(1,148) = 4.23, p = .04, \eta^2 = .03$). In addition, there was a difference by age group; college students rated their narrative events as more self-revealing compared to the two younger age groups ($F(2,148) = 9.09, p < .001, \eta^2 = .11$) (see Figure 3). Overall, the distinction between importance self-categories was supported by converging empirical evidence for event-specific importance, event intensity and self-relevance.

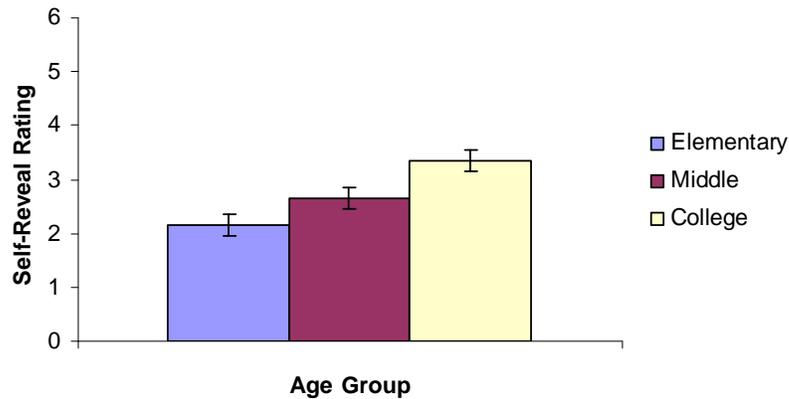


Figure 3. Mean self-reveal ratings by age group

Descriptive Results

Global Self-Worth. Descriptive analyses considered the spread of data for global self-worth. Consistent with previous research, participants in this sample evidenced high levels of global self-worth ($M = 3.34, SD = 0.46$). A one-way ANOVA was conducted to determine if there were any significant differences in global self-worth by age group. The model was not significant ($F(2,156) = 0.71, p = .50$). In addition, correlations were examined between

global self-worth and all potential dependent variables in the main hypotheses, including coping strategy averages (i.e., assistance seeking, cognitive behavioral problem solving, cognitive avoidance, behavioral avoidance), Horowitz measures (i.e., intrusion and avoidance means) language use (i.e., positive emotion, negative emotion, cognitive terms, exclusions) and incidence of positive reappraisal in the narrative. Among all of these comparisons, only one was significant. Global self-worth was negatively related to behavioral avoidance ($r = -.27, p = .001$), such that higher levels of global self-worth were associated with lower reports of behavioral avoidance from events. Additional analyses indicated that the relationship between global self-worth and behavioral avoidance was only significant within the college age group ($r = -.39, p < .001$); however, trends in the same direction were observed among the middle and elementary groups (Middle: $r = -.13, p = .35$; Elementary: $r = -.22, p = .12$). Additionally, only elementary school students evidenced a negative relationship between assistance seeking and global self-worth ($r = -.28, p = .05$), such that higher levels of global self-worth were associated with lower levels of assistance seeking. Subsequent analyses examining behavioral avoidance controlled for global self-worth.

Time since the events. In order to explore possible age group effects or categorical self-importance differences in the amount of time lapsed since the described events, a mixed between-within analysis of variance was conducted. The between-subjects factors were age group (elementary, middle, college) and gender and the within-subjects factor was event self-importance category (most, least). There was a main effect of importance ($F(1,147) = 4.85, p = .03, \eta^2 = .03$), such that least important events occurred farther away in time ($M = 1.00, SD = 1.67$) than did most important events ($M = 0.65, SD = 0.89$). Additionally, there was an

importance by age group interaction ($F(2,150) = 5.49, p = .005, \eta^2 = .07$). Pairwise Bonferroni comparisons revealed that it was only among the college students that the difference between transpired time by importance self-category was significant ($p < .001$). In addition, college students significantly differed from middle school students in time elapsed since the least important event occurred ($p = .02$). College students reported least self-category events from over a year ago ($M = 1.45, SD = 2.40$) and middle school participants reported least self-category events from the past six months ($M = 0.50, SD = 0.50$). The difference was not apparent between the two younger age groups. Finally, there was a trend for the gender by importance interaction ($F(1,147) = 3.74, p = .06, \eta^2 = .03$). Females differed in their reporting of events, with least important self-category narratives occurring farther away in time ($M = 1.18, SD = 2.03$) compared to most important self-category narratives ($M = 0.53, SD = 0.52$) ($p = .003$). Subsequent analyses examined correlations between time since the experience and dependent variables and, as appropriate, included elapsed time in relevant models.

Event Categories. Figures 4 and 5 present the percentages of selected events from five different event categories by age group, separately by most and least important self-categories.

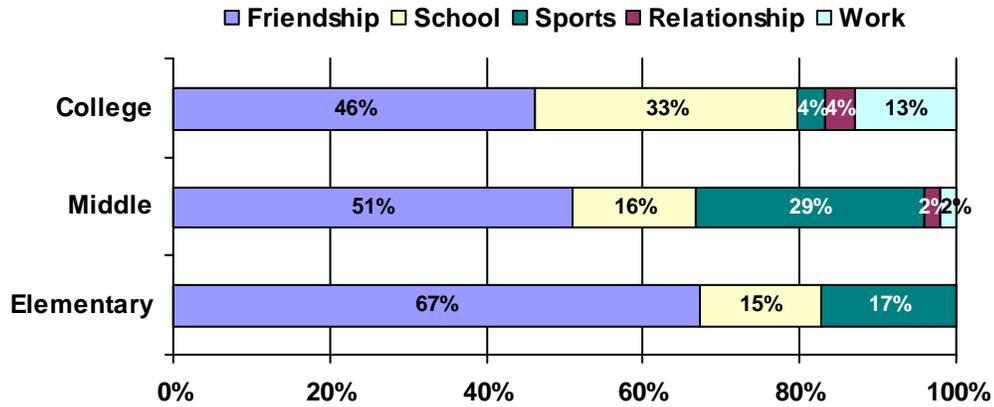


Figure 4. Most important event categories by age group

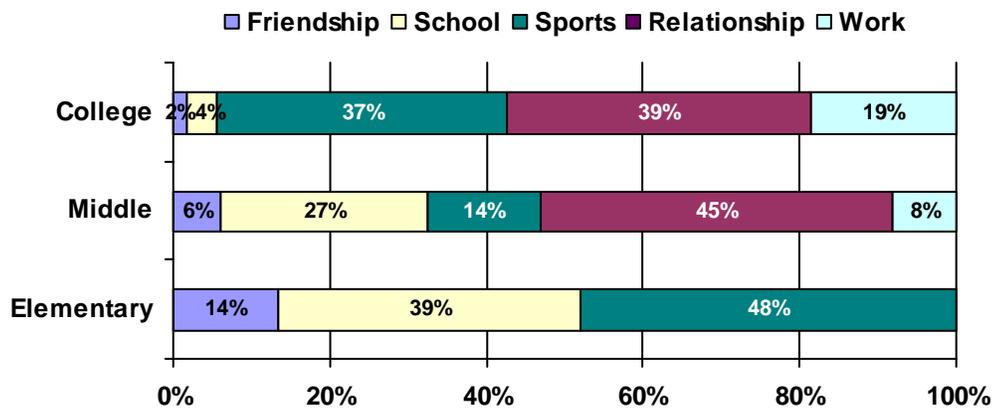


Figure 5. Least important event categories by age group

Participants differed in their selection of domains addressed in their narrative reports across most and least important self-categories. Beginning with the most important self-categories, friendships were most frequently discussed by all age groups, followed by sports for the two younger age groups and school for the oldest age group. Domains selected for the least important event categories also differed by age group. Specifically, school was the most frequent choice for elementary and relationships for middle school and college students.

Gender differences in event reports of most and least important self-categories were also examined. Beginning with most important self-categories, elementary students

continued to talk most about friendships regardless of gender (60% males, 77% females). Middle school students differed by gender, with the majority of males discussing sports (46%) and the majority of females discussing friendships (70%). For college students, males and females (36% and 53%, respectively) discussed friendships most frequently but males also had a greater tendency to discuss work (27%) compared to females (3%). With regard to least important self-categories, elementary students continued to talk the most about sports experiences regardless of gender (47% males, 52% females). Middle school students differed by gender, with the majority of males discussing school as their least important self-category (44%) and females choosing relationships (62%). Interestingly, the middle school pattern was also evident for college students, with males discussing sports as their least important self-category (41%) and females choosing relationships (44%).

Length of narrative reports. In order to examine narrative differences in word count by age group and gender, a mixed between-within analysis of variance was conducted. The between-subjects factors were gender and age group (elementary, middle, college) and the within-subjects factor was importance self-category (most, least). There was a trend for an effect of importance self-category ($F(1,148) = 2.85, p = .09, \eta^2 = .02$), with narratives from most important self-categories being slightly longer ($M = 194.46, SD = 205.14$) than narratives from least important self-categories ($M = 176.58, SD = 174.49$). There was also a main effect of age group ($F(2,148) = 26.77, p < .001, \eta^2 = .27$) and a gender by age group interaction ($F(2,148) = 5.01, p = .008, \eta^2 = .06$). College students' narratives ($M = 304.72, SD = 226.44$) were significantly longer than middle school ($M = 133.77, SD = 151.25$) or elementary narratives ($M = 107.52, SD = 100.22$) ($ps < .01$), which did not differ from each

other. In addition, gender differences in narrative length were significant within the middle school and college age groups ($ps < .05$), with middle school females and college males talking more during the interview, but were not observed within the elementary school group (Figure 6).

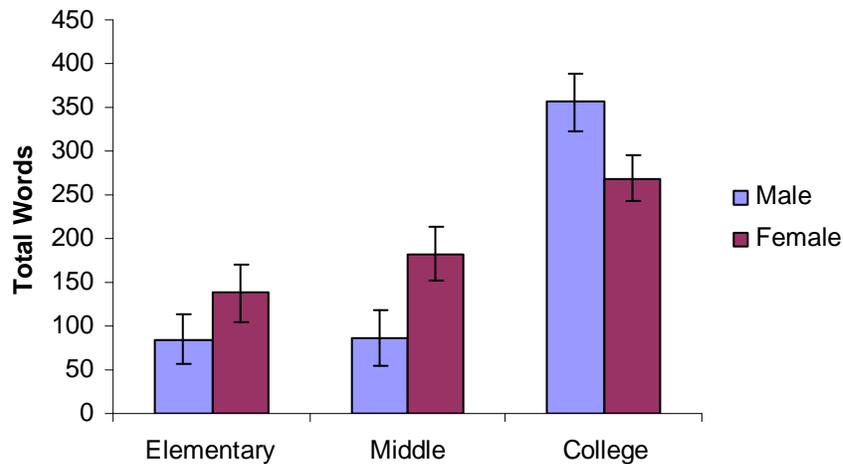


Figure 6. Total words by age group and gender

Total word usage differed by age group and gender; however, subsequent analyses examine mean percentages of internal states language in the narrative. Hence, there was no need to control for differences in total word usage.

Positive Reappraisal. Descriptive analyses considered the incidence of positive reappraisal at the end of the narrative. Figures 7 and 8 present scores for most and least important self-categories by age group separately for most and least important self-categories. Interestingly, attempts at reappraisal appeared to differ by event category (most versus least important event) at least for college and elementary participants. After examining the cell counts for usage of positive reappraisal, it was recoded on absent or

present scale since the cell numbers were zero or small for some age groups. For instance, there were only 20 instances of the positive reappraisal code “Positive Reappraisal & Personal Growth” within the whole sample (across importance categories). The absent/present coding combined “Non-use (NU)” and “Attempt at appraisal (AA)” into absence of positive reappraisal and “Positive Reappraisal (PR)” and “Positive Reappraisal & Personal Growth (PR+PG)” into presence of positive reappraisal, resulting in two versus four categories. Using this new two category variable, a chi-square analysis was conducted to examine differences in positive reappraisal reports by age group and by importance category. Across event self-categories, age groups did not differ in the presence or absence of positive reappraisal ($\chi^2 (2) = 1.38, p = .50$). An additional set of analyses examined age group differences in reports of positive reappraisal in the most important versus least important event self-categories. None of the age groups differed in their usage of positive reappraisal for most versus least important events ($\chi^2 (1) \leq 1.21, ps > .20$). Additionally, there appeared to be a developmental trend in the types of positive reappraisals, with the incidence of “PR+PG” codes (i.e., those representing personal growth or an extension of the event into the future) being non-existent in elementary narratives, slightly apparent in middle school narratives and appearing more consistently in college narratives.

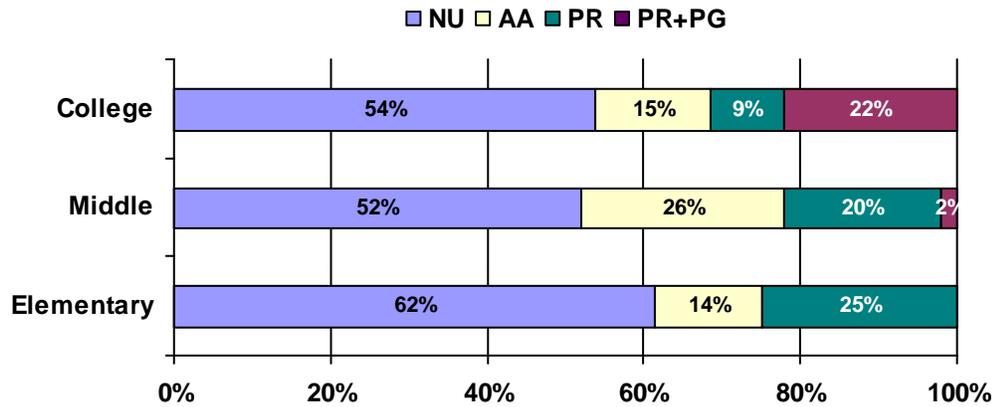


Figure 7. Positive reappraisal codes for most important event categories by age group

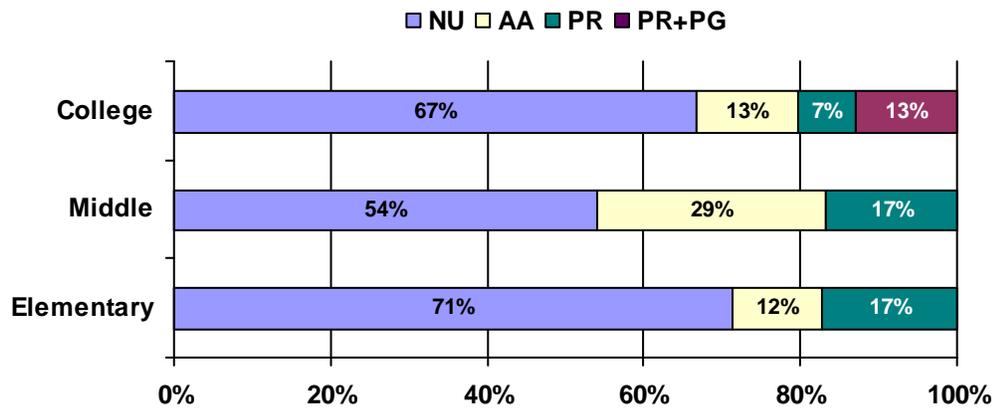


Figure 8. Positive reappraisal codes for least important event categories by age group

Summary of preliminary and descriptive analyses. Preliminary analyses established there were no demographic (e.g., ethnicity, location, community) or version differences in internal states language. In addition, means for global self-worth were average across the sample and did not differ by age group. There was one common negative relationship between global self-worth and reports of behavioral avoidance and one negative relationship for the elementary group only between global self-worth and assistance seeking. In addition,

least important self-category narratives occurred farther away in time compared to most important self-category narratives, but this pattern only held true for the college age group.

With regard to narrative content, the majority of participants discussed friendships for the most important self-category narratives and varied in their chosen events for the least important self-category. Additionally, college students provided longer narratives compared to the younger age groups, however, subsequent analyses examine density of ISL rather than total counts.

With regard to psychological functioning, the presence of positive reappraisal occurred in approximately $\frac{1}{4}$ of all narratives, with no differences by age group or importance self-category. However, the incidence of “PR+PG” codes did differ, with reports of personal growth non-existent in the elementary age group and very frequent in the college narratives.

Most importantly, events selected by interviewers and discussed by participants differed in domain importance, event-specific importance, event-specific intensity and self-relevance. These results were in the predicted direction, establishing converging evidence that participants not only discussed events from different self-categories but agreed that these events were different.

Tests of Main Hypotheses

Aim 1: Investigate age differences in language use as related to self-threatening events as related to self-threatening events varying in relevance of the domain to the self.

In order to test the main hypotheses associated with Aim 1, a mixed between-within multivariate analysis of variance was conducted for cognitive terms, positive emotion terms, negative emotion terms, physical, sensory and exclusion terms. Between-participants factors were age group and gender. The within-participants factors were importance self-category (most versus least) and internal states language (cognitive terms, positive emotion, negative emotion, physical, sensory terms). The percentages of observed ISL and exclusionary terms were consistent with those observed in other investigations (e.g., Pennebaker & Francis, 1996; Pennebaker & Stone, 2003; Reynolds et al., 2000). Beginning with main effects, there was only one significant main effect of internal states language ($F(2.62, 388.09) = 434.36, p < .001, \eta^2 = .75$).² There was a higher percentage of cognitive terms compared to all other types of internal states language ($p < .001$). In contrast, physical terms accounted for the smallest percentage of the narrative compared to all other types of internal states language ($p < .001$). There was a significant internal states language by age group interaction ($F(5.24, 388.09) = 4.88, p < .001, \eta^2 = .06$). Elementary school students included significantly more positive emotion in their narratives compared to college students ($p = .05$) and there was a trend for middle school students to include more positive emotion in their narratives compared to college students ($p = .08$). College students used significantly less negative emotion in their narratives compared to middle school and elementary school participants (p s

² Due to a violation of the sphericity assumption, Greenhouse-Geisser statistics are reported for these analyses.

< .05). With regard to cognitive terms, college students used a significantly greater percentage of cognitive terms in their narratives compared to elementary students which did not differ from middle school ($p = .02$). For sensory terms, elementary students used significantly more sensory terms compared to college students but both groups did not differ from middle school ($p = .03$) (see Figure 9).

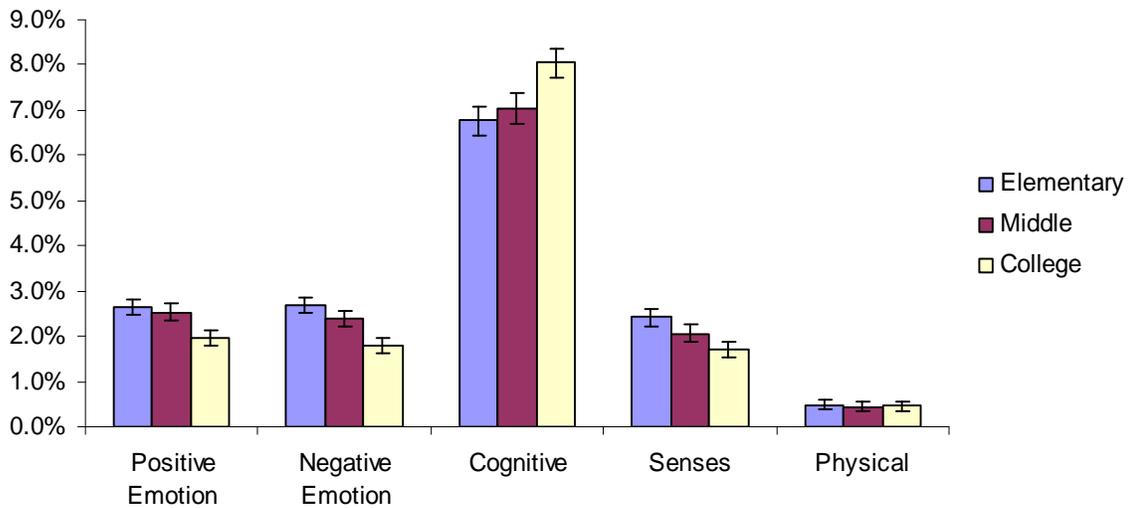


Figure 9. Internal states language differences by age group

There was a trend for the internal states language by gender interaction ($F(2.62, 388.09) = 2.35, p = .08, \eta^2 = .02$). Females tended to use a greater percentage of sensory terms in their narratives ($M = 2.37, SD = 1.99$) compared to males ($M = 1.74, SD = 1.64$) ($p = .002$), but males and females did not differ with regard to other ISL categories.

Finally, there was a significant four way (self-category importance by internal states language by age group by gender) interaction ($F(6.14, 453.96) = 2.27, p = .04, \eta^2 = .03$). However, in the absence of a predicted four-way interaction, the significance is most likely

due to unsystematic variance across groups.

Finally, exclusion terms were examined since they are a key variable in later analyses. A mixed between-within analysis of variance was conducted predicting exclusion terms. Between participants factors were age group and gender. The within-participants factor was importance self-category (most versus least). There was one trend for age group ($F(2,148) = 2.96, p = .06, \eta^2 = .04$). Elementary participants used fewer exclusions compared to college students ($p = .05$) (see Figure 10). No other main effects or interactions were significant.

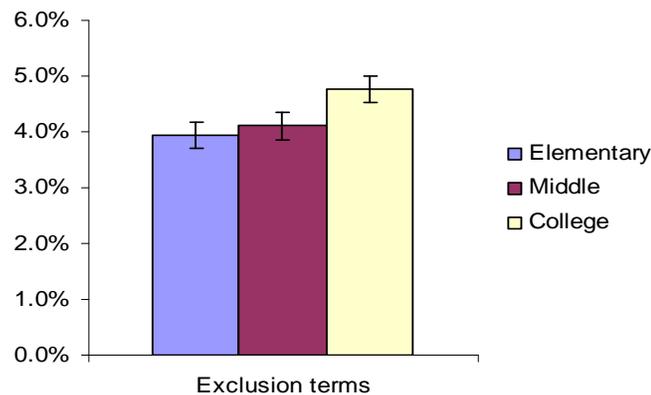


Figure 10. Percentage of exclusion terms in narratives by age group

Aim 2: Investigate age differences in language use as it relates to a specific social psychological self-protective mechanism, discounting (Harter, 1999) otherwise known as dis-identification (James, 1892/1968; Steele, 1997).

In order to examine the hypotheses associated with Aim 2, a series of hierarchical regression analyses were conducted. For each regression model, dependent variable correlations with potential confounds (e.g., gender, time since the event, narrative self-importance category, importance at the time of the event) were examined to determine variables to include in the model. In addition, in order to ensure assumptions were met,

preliminary analyses assessed the homeodasticity of each model. Violations of assumptions will be described in the text along with significant models. Continuous variables are centered in each moderation analysis. Non-significant models are described fully in Appendix F.

Hypothesis A. Exclusions will be directly related to a lessened importance of the event over time and age will moderate this relationship.

To examine change in importance over time (as retrospectively reported), analyses were conducted with the model predicting current event importance and controlling for past event importance.³ There were significant correlations between current event importance and narrative type (i.e., most vs. least important self-category) ($r = .23, p < .001$) as well as importance at the time of the event ($r = .23, p < .001$). Events from most important self-categories had higher present importance and higher levels of present importance were related to higher levels of past importance. A regression analysis was conducted to examine the extent to which predictors involving age group and exclusion terms account for individual differences in present importance. There were no significant interactions or main effects with the exception of narrative category and importance at the time which were positively related to present event importance ($ps < .01$) (see Appendix F for the full model).

Hypothesis B. Cognitive term usage will be inversely related to a lessened importance of the event over time. Age is expected to moderate this relationship, such that cognitive term usage will be more strongly related to a lessened importance for the college age group compared to the two younger age groups.

Similar to the previous model, a regression analysis was conducted to examine the extent to which predictors involving age group and cognitive terms account for individual

³ Analyses were conducted separately for importance change and the pattern of results was the same. The current model (predicting current importance and controlling for past) was chosen instead due to its strength.

differences in present importance, with past importance included in the model. In contrast to predictions, there were no significant interactions or main effects with the exception of narrative category and importance at the time (see Appendix F for the full model).

Hypothesis C. Usage of positive reappraisals will be related to a greater lowered importance of the event over time compared to non-use. Age differences will also be examined.

A hierarchical regression analysis was conducted to examine the extent to which predictors involving narrative type, importance at the time, age group and positive reappraisal (absent, present) account for individual differences in current event importance (see Table 2). In the first block, importance at the time and narrative type were added and were both significant ($p < .01$). Positive reappraisal, age group and their interactions were added in block 2 and the amount of variance increased to 21%, which was a significant ($F(5,298) = 1.82, p = .05$) increase. With the addition of block 2, the only variable to reach significance was the positive reappraisal by elementary age group interaction term (see Figure 11). For elementary students in comparison to college students, a negative relationship was observed between positive reappraisal was and present importance ($p = .008$). In addition, there was a trend for the slope of college students to be significantly different from the elementary age group ($p = .07$). Additional analyses with the same dataset and design (i.e., model predicting change in importance and controlling for narrative type) used new dummy codes comparing elementary to middle school participants and confirmed that the elementary group interaction with positive reappraisal was significantly different from middle school ($p = .01$).

Table 2. Summary of regression analysis for variables predicting current importance

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Importance at the time	0.51**	0.19	0.14	0.50**	0.19	0.14
Narrative type	0.40**	0.06	0.37	0.39**	0.06	0.36
Positive reappraisal				0.66†	0.36	0.15
Elementary				0.24	0.27	0.06
Middle School				-0.22	0.26	-0.06
Positive Reappraisal X Elementary				-1.44*	0.54	-0.20
Positive Reappraisal X Middle				0.02	0.56	0.00
R ²		.18			.21	
ΔR^2					.03*	

Note. † $p < .10$ * $p < .05$ ** $p < .01$

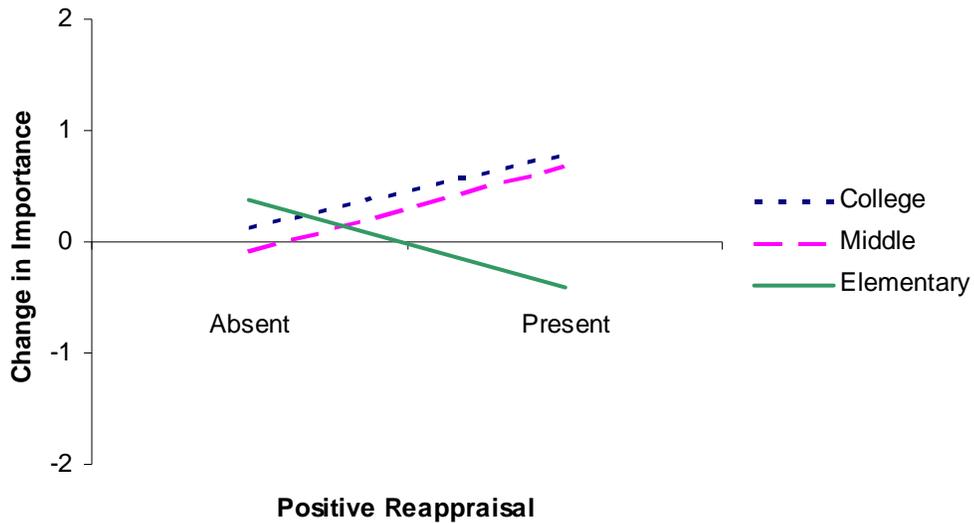


Figure 11. Interaction between positive reappraisal and age group, predicting present importance of the event (Observed range of importance change: -6 to 4)

Aim 3: Investigate age differences in language use as it relates to coping mechanisms.

In order to examine the hypotheses associated with Aim 3, a series of hierarchical regression analyses were conducted examining links between language use and coping mechanisms with age group as a moderator. For each regression model, dependent variable correlations with potential confounds (e.g., gender, time since the event, past event importance⁴) were examined to determine variables to include in the model. In addition, in order to ensure assumptions were met, preliminary analyses assessed the homeodasticity of each model. Violations of assumptions are described in the text and variables included in moderation analyses are centered. This section begins with descriptive analyses of coping variables.

Descriptive results for coping behaviors. Participants answered several questions within each coping category; however, analyses represent mean coping category scores for each participant on a 0 (Never) to 3 (Very Often) point scale. In order to determine if reports of coping differed by grade level, a multivariate analysis of variance was conducted predicting age group differences in coping behaviors (i.e., assistance seeking, cognitive behavioral problem solving, cognitive avoidance and behavioral avoidance). The model was not significant ($F(8,302) = 1.14, p = .34, \eta^2 = .03$) Means and standard deviations for assistance seeking ($M = 1.56, SD = 0.65$) and cognitive behavioral problem solving ($M = 1.51, SD = 0.59$) were highest in the sample, followed by cognitive avoidance ($M = 0.95, SD = 0.59$) and behavioral avoidance ($M = 0.76, SD = 0.62$).

⁴ Past event importance was used instead of narrative type since reports of coping were only assessed for the most important self-category.

Hypothesis. Higher use of assistance seeking and problem solving will be directly related to greater use of internal states language in the narrative whereas higher use of cognitive avoidance and behavioral avoidance will be inversely related to less use of internal states language in the narrative for all age groups. Age differences are expected to moderate this effect.

In order to examine how the relationship between internal states language and coping varies by age group, correlations were conducted to examine potential relations between different types of ISL (cognitive terms, positive emotion, negative emotion) and types of coping (assistance seeking, cognitive behavioral problem solving, cognitive avoidance, behavioral avoidance) separately for each age group (Note that coping was only assessed for the most important self-category narratives). The following represents significant correlations or trends by age group. Beginning with elementary school participants, there was a significant correlation between positive emotion usage and assistance seeking ($r = -0.36, p = .009$) and between positive emotion usage and cognitive avoidance ($r = 0.39, p = .005$). For middle school participants, there was only one significant trend between positive emotion usage and assistance seeking ($r = .26, p = .07$). As a result of this initial preliminary analysis, two regression models were conducted to assess how age moderated the relationship between coping behaviors (assistance seeking, cognitive avoidance) and the usage of positive emotion terms in the narrative.

In order to test the first model associated with Aim 3, a regression analysis was conducted to examine the extent to which predictors involving age group and assistance seeking account for individual differences in positive emotion term use. Gender was related to usage of positive emotion terms ($r = -.12, p = .04$) and was included in the model. An initial examination of the model removed one outlier with a Mahalanobis distance above the

critical value, resulting in a loss of less than 1% of the data. As can be seen in Table 3, the first predictor block accounted for 4% of the variance in positive emotion term usage. Gender was negatively related to positive emotion usage, and this relationship was statistically significant ($p = .04$), indicating that females used less positive emotion in their most important self-category narratives compared to males. Assistance seeking, age group and their interactions were added in block 2 and the amount of variance increased to 15%, which was a significant ($F(5,146) = 4.69, p = .001$) increase from Block 1. It should be noted that with the addition of block 2, gender was still significantly uniquely associated with positive emotion term usage. Turning to regression estimates, being a middle school student was associated with higher levels of positive emotion term usage ($p = .03$) versus being a college student participant. There was a trend for elementary school participants to have higher levels of positive emotion compared to college students ($p = .08$). The interaction between assistance seeking and being in elementary school was found to be significant in predicting positive emotion term usage ($p = .003$). Specifically, the relationship between assistance seeking and positive emotion term was negative, such that lower usage of positive emotion terms in the narrative was associated with higher levels of reported assistance seeking. The same relationship was non-existent in the college student population (see Figure 12). Additional analyses with the same dataset and design (i.e., same removal of outliers, model predicting positive emotion and controlling for gender) used new dummy codes comparing elementary to middle school participants and confirmed that the elementary interaction with assistance seeking was significantly different from middle school participants ($p < .001$).

Table 3. Summary of regression analysis for age group and assistance seeking variables predicting positive emotion usage

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Gender	-0.79**	0.29	-0.22	-0.71*	0.29	-0.20
Assistance Seeking centered				0.26	0.37	0.09
Elementary				0.60†	0.34	0.16
Middle School				0.74*	0.33	0.19
Assistance Seeking X Elem				-1.70**	0.57	-0.29
Assistance Seeking X Middle				0.63	0.51	0.13
R ²		.04			.15	
ΔR^2					.13**	

Note. † $p < .10$ * $p < .05$ ** $p < .01$

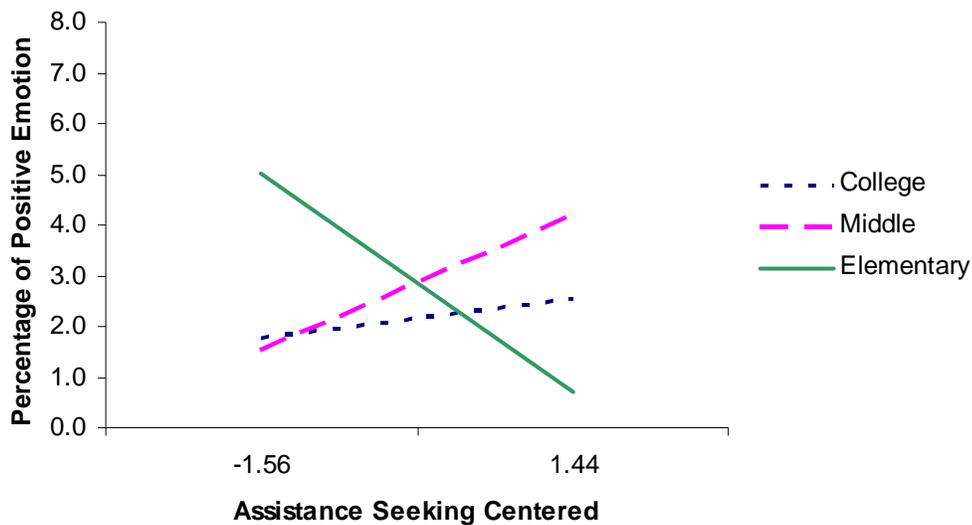


Figure 12. Interaction between assistance seeking and age group, predicting usage of positive emotion terms (Observed range reflected in the scales)

In order to test the second model associated with Aim 3, a regression analysis was conducted to examine the extent to which predictors involving age group and cognitive avoidance

account for individual differences in positive emotion term use. Since gender was related to usage of positive emotion terms ($r = -.12, p = .04$), the model controlled for gender. Further preliminary analyses tested for homeodasticity of the model and found there was one case with a standardized residual over 3 and two cases with a Mahalanobis Distance above the critical value. These outliers were removed from the analysis resulting in a loss of less than 2% of data. As can be seen in Table 4, the first predictor block accounted for 4% of the variance in positive emotion term usage. Gender was negatively related to positive emotion usage, and this relationship was statistically significant ($p = .04$). Cognitive avoidance, age group and their interactions were added in block 2 and the amount of variance increased to 11%, which was a significant ($F(5,144) = 2.32, p = .05$) increase from block 1. It should be noted that with the addition of block 2, gender was no longer uniquely associated with positive emotion term usage. Turning to regression estimates, there was one trend; being a elementary school student was associated with higher levels of positive emotion term usage ($p = .07$) versus being either an elementary school or college student participant. There was a trend for the interaction between cognitive avoidance and being in elementary school in predicting positive emotion term usage ($p = .10$). Specifically, elementary school students exhibited a positive relationship between positive emotion term usage and cognitive avoidance compared to college students only. Higher levels of positive emotion term usage were associated with greater levels of cognitive avoidance (see Figure 13). Additional analyses with the same dataset and design (i.e., same removal of outliers, model predicting positive emotion and controlling for gender) used new dummy codes comparing elementary

to middle school participants and confirmed that the elementary school interaction with cognitive avoidance was significantly different from middle school ($p = .02$).

Table 4. *Summary of regression analysis for age group and cognitive avoidance variables predicting positive emotion usage*

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Gender	-.63**	0.27	-0.18	-0.54†	0.28	-0.15
Cognitive Avoidance Centered				0.00	0.39	0.00
Elementary				0.60†	0.33	0.16
Middle School				0.52	0.33	0.14
Cognitive Avoidance X Elementary				0.94†	0.57	0.18
Cognitive Avoidance X Middle				-0.61	0.63	-0.18
R ²		.03			.11	
ΔR^2					.07**	

Note. † $p < .10$ * $p < .05$ ** $p < .01$

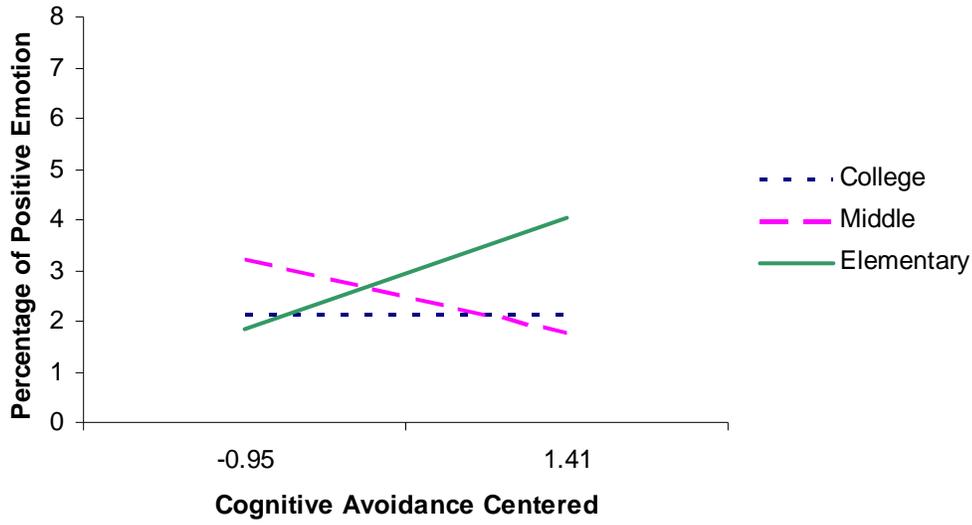


Figure 13. Interaction between cognitive avoidance and age group, predicting usage of positive emotion terms (Observed range reflected in the scales)

Since previous analyses established a link between use of positive reappraisal and subsequent reports of importance, correlational analyses were conducted investigating age differences in relations between positive reappraisal in the narrative and coping variables. For college students only, there was a trend for positive reappraisal to be related to both cognitive behavioral problem solving ($r = .23, p = .10$) and cognitive avoidance ($r = -.26, p = .06$). As a result of this initial preliminary analysis, two regression models were conducted to assess how age moderated the relationship between coping behaviors (cognitive behavioral problem solving, cognitive avoidance) and the usage of positive reappraisal in the narrative.

In order to test the first model, a regression analysis was conducted to examine the extent to which predictors involving age group and positive reappraisal account for individual differences in reports of cognitive behavioral problem solving. Importance at the

time of the event was related to cognitive behavioral problem solving ($r = .22, p = .006$) and the model controlled for past event importance. As can be seen in Table 5, the first predictor block accounted for 5% of the variance in cognitive behavioral problem solving. Past event importance was positively related to cognitive behavioral problem solving, and this relationship was statistically significant ($p < .01$). Positive reappraisal, age group and their interactions were added in block 2 and the amount of variance increased to 9%, which was not a significant ($F(5,146) = 1.10, p = .36$) increase from Block 1, however, the overall regression model was significant ($F(5,146) = 2.25, p = .04$). Turning to regression estimates, there was a main effect involving positive reappraisal. Positive reappraisal in narratives was positively related to higher levels of cognitive behavioral problem solving across age groups ($p = .03$).

Table 5. Summary of regression analysis for age group and positive reappraisal variables predicting cognitive behavioral problem solving

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Past importance	0.08**	0.03	0.22	0.07*	0.03	0.20
Positive Reappraisal				0.38*	0.17	0.29
Elementary				0.06	0.13	0.05
Middle School				0.03	0.13	0.02
Positive Reappraisal X Elementary				-0.35	0.26	-0.16
Positive Reappraisal X Middle				-0.28	0.27	-0.12
R ²		.05			.09	
ΔR^2					.04	

Note. † $p < .10$ * $p < .05$ ** $p < .01$

In order to test the second model, a regression analysis was conducted to examine the extent to which predictors involving age group and positive reappraisal account for individual differences in cognitive avoidance. Gender was related to reports of cognitive avoidance ($r = -.17, p = .04$) (females reported lower levels of cognitive avoidance), and the model controlled for gender. As can be seen in Table 6, the first predictor block accounted for 3% of the variance in cognitive avoidance. Gender was negatively related to positive emotion usage, and this relationship was statistically significant ($p = .04$). Positive reappraisal, age group and their interactions were added in block 2 and the amount of variance increased to 7%, which was not a significant increase from Block 1 ($F(5,147) = 1.33, p = .26$). It should be noted that with the addition of block 2, the effect of gender was lessened. Turning to regression estimates, there was a significant interaction between positive reappraisal and being in middle school in predicting cognitive avoidance ($p = .03$). Specifically, middle school students exhibited a positive relationship between positive reappraisal and cognitive avoidance such that the incidence of positive reappraisal was associated with higher levels of avoidance in comparison to college students. The opposite pattern was a trend for college students ($p = .06$) (see Figure 14).

Table 6. Summary of regression analysis for variables predicting cognitive avoidance

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Gender	-0.20**	0.09	-0.17	-0.18†	0.10	-0.16
Elementary				0.04	0.13	0.04
Middle School				-0.09	0.13	-0.07
Positive Reappraisal				-0.34†	0.18	-0.24
Reappraisal X Elementary				0.37	0.27	0.16
Reappraisal X Middle				0.61*	0.28	0.16
R ²		.03			.07	
ΔR^2					.04	

Note. † $p < .10$ * $p < .05$ ** $p < .01$

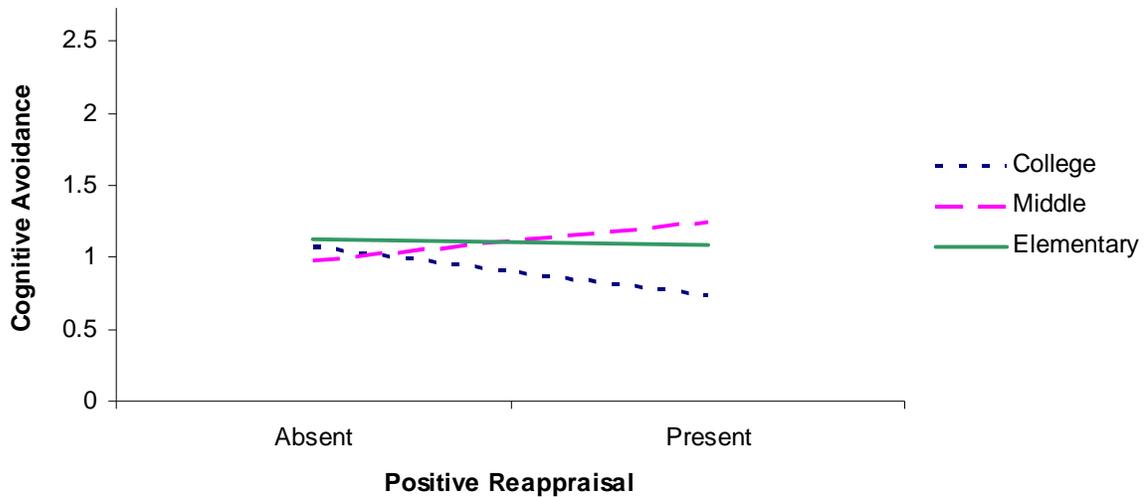


Figure 14. Interaction between positive reappraisal and age group, predicting reports of cognitive avoidance (Observed range of cognitive avoidance: 0 to 2.73)

Aim 4: Investigate age differences in language use as it relates to psychological outcomes.

In order to examine the hypotheses associated with Aim 4, a series of hierarchical regression analyses were conducted to examine relations between language use and

intrusive/avoidant thoughts with age group as a moderator. Prior to conducting these analyses, correlational analyses were conducted to determine variables to include in each model. In addition, in order to ensure assumptions were met, the principal investigator examined the homeodasticity of models.

Descriptive results for reports of intrusion/avoidance. Descriptive analyses considered mean ratings and reports for different types of intrusions and avoidance symptoms within one week of the interview (e.g., Horowitz intrusion and avoidance means). As was the case with the coping questionnaire, participants answered multiple questions concerning their level of intrusions and avoidance. However, these analyses utilize the mean intrusion and avoidance scores for each participant on a 0 (Not at all/Does not apply) to 3 (Often) point scale. In order to determine if reports of intrusion and avoidance differed by grade level, a between-within multivariate analysis of variance was conducted predicting age group differences and narrative self-category (e.g., most, least) differences in reports of intrusion and avoidance. The within-subjects factors were symptom (Intrusion, Avoidance) and narrative self-category (Most, Least). The between-subjects factor was age group (elementary, middle, college). There was a significant two way interaction between symptom and age group ($F(2,152) = 3.92, p = .04, \eta^2 = .05$). College students reported a higher mean intrusion score ($M = 0.91, SD = 0.75$) compared to middle school participants ($M = 0.60, SD = 0.78, p = .06$). In addition, college students reported significantly higher mean avoidance scores ($M = 0.90, SD = 0.70$) compared to middle school participants ($M = 0.58, SD = 0.75, p = .06$). Additionally, elementary students differed in their reports of intrusion and avoidance, such that avoidance perceptions were significantly higher ($M = 0.77, SD = 0.83$) compared to

intrusions ($M = 0.65$, $SD = 0.77$, $p = .003$). There were no additional significant interactions or main effects involving symptom (i.e., intrusion, avoidance).

Hypothesis A. Cognitive term usage will be inversely related to less intrusive and avoidant thoughts. Age will moderate this relationship, such that cognitive term usage will be more strongly related to intrusive and avoidant thoughts for the college age group, compared to the two younger age groups.

Hypothesis B. Positive emotion term usage will be inversely related to less intrusive and avoidant thoughts. Age differences will be examined; however, no a priori assumptions are made.

Hypothesis C. Negative emotion term usage will be directly related to more intrusive and avoidant thoughts. Age differences will be examined, however, no a priori assumptions are made.

Hypothesis D. Incidence of positive re-appraisals of the event will be inversely associated with a lower mean reports of intrusive and avoidant thoughts, compared to a lack of positive re-appraisals.

In order to investigate Hypotheses A-D, correlational analyses were conducted comparing language usage (cognitive term, positive emotion, negative emotion, positive reappraisal) and Horowitz scores (intrusion mean, avoidant mean, intrusion/avoidant composite variable). No significant correlations were found. Since age group was expected to moderate the relationship between language usage and intrusive/avoidant reports, correlational analyses were also conducted separately for each age group. No significant correlations analyses were found. In order to determine whether the regression models were significant, three models were tested predicting the intrusion/avoidance composite variable, the intrusion average and the avoidance average separately for each language variable, resulting in twelve separate regression analyses. Age was not a significant moderator in any model.

DISCUSSION

The current data have implications for understanding developmental patterns in language use and offer some intriguing new research directions. The results for each of the four aims will be discussed in turn. The chapter concludes with a final discussion of some of the limitations of the present research and suggestions for follow-up investigations.

Aim 1: How does internal states language differ across age and self-category?

As expected, internal states language followed developmental patterns with elementary school students using a greater percentage of positive emotion, negative emotion and sensory terms in their narratives compared to college students. In contrast, college students used more cognitive and exclusion terms compared to the younger age groups. These findings corroborate the research of Pennebaker and Stone (2003) who also found age increases in internal states language for cognitive terms. Further, they add to the Pennebaker and Stone (2003) research by examining specific age groupings that corresponded to meaningful changes in children's environments (e.g., elementary school, middle school, college) and represented transition points in the self-concept, versus the broader age groupings used by the previous researchers (2003) (e.g., 8-14, 15-24). In addition, the finding that density of ISL varied by age group goes against previous studies which have not found cross-sectional differences in the density of ISL (e.g., Bauer et al., 2005; Fivush et al., 2008). Although these researchers reported differences in total ISL usage across age, no age differences were observed when they accounted for narrative length, in contrast to the present findings. Methodological differences may account for the differences in findings regarding ISL density. Bauer et al. (2005) and Fivush et al. (2008) compared mothers' narratives of

frightening events (e.g., memory for a tornado, asthma attack) with children's narratives of the same events. In contrast, the present study compared narratives for different types of self-relevant experiences that were not shared across age groups or individuals. Regarding age group differences, Bauer et al. (2005) examined narrative reports from children ages 2.6-11.8 and compared their narratives to those of their mothers. Fivush et al. (2008) compared 8-12 year olds narratives with their mothers' accounts of the same experience. In contrast to these previous studies, the present study investigated memories of different types of events and explored differences across the late elementary, middle school and college age groups.

In the present investigation, the difference in internal states density by age group may be reflective of the different complexities of events in the worlds of children versus college students, even when those events are selected from the same domain, such as friendships. Children think about the world in more specific ways, reflecting on short one-time experiences (Harter, 2006). In contrast, young adults can consider personally-experienced events in the larger context of their lives due to an established and coherent life story (Habermas & de Silveira, 2008). Additionally, the interconnectedness of personal experiences differs across these age groups, with young adults often exploring the broader implications of the event for understanding their own lives. For example, consider the two narrative examples of a friendship conflict, the first from the elementary student:

On twin day, my friends, my best friends in the whole world, they did twin day without me. They just, did twin day, they asked each other and then they didn't ask me so then they just got all excited without me and for the rest of the day, they like ignored me and they talked all about it at recess, I was like, felt like I was like invisible. On twin day however, they seemed fine because I was wearing something that my best friend was wearing so we became triplets, and then we had fun

together so my problem was really solved...I kind of felt relieved and not that my friends forgot me and stuff, yes so I still think, so they're still my best friends.

In contrast, the following is a narrative from a college student concerning their issues with a friendship.

Friendships are very important to me because they are a way to learn new things and be able to count on other people. Um, I had a best friend named Jane in middle school and most of high school. We went to the same church and did most of the same things every weekend together. I met her in 7th grade and we became best friends up until our junior year of high school and I introduced her to a bunch of my friends from church that she didn't know, and she ended up dating one of the guys and suddenly stopped calling me and hanging out with me...She started being two-faced and lying to me all the time. Umm, I was really upset and hurt because I never ditched her for the boyfriend that I had, uh she was always still my first priority because she was my best friend and so I became a lot less trusting of other girls because I thought I could always count on her. So when she let me down, I just pretty much stopped talking to her all together and it really hurt my feelings and it still does even though this was about two years ago...and I miss her sometimes because I miss having a best friend but I don't want a best friend like that I guess because she never talked to me anymore and it hurt my feelings. I wish that she would realize why we weren't friends because she blames it on me.

The experiences across these narratives illustrate two very different pictures. For the elementary school student, the experience lasted one moment in time and the negativity surrounding the experience vanished quickly. For the college student, the troubled friendship not only affected a moment in time but carried an extended impact to the present. In addition, the college experience clearly changed the way the student viewed the self overall, especially when it came to the domain of friendships. As illustrated by these examples, the nature of friendship conflicts varied extensively by the youngest and oldest age groups.

When considering usage of internal states language in the narratives, there was only one effect of gender. Females, as a group, used more sensory terms (e.g., feel, heard) in their narratives compared to males. This finding is somewhat different from past research, which has found that adult females use more internal states overall compared to adult males for their memories of life events (Bauer et al., 2003). It is also inconsistent with additional research finding that 9- to 13-year-old females included more facts, emotions and explanations in their narratives concerning their deepest thoughts and emotions for distressing events (Fivush et al., 2007). Greater sensory term usage could be explained as a more vivid reliving of the experience, with females more clearly delving into the sensory aspects of problems and issues, whereas males tended to discuss these experiences from a different perspective. This effect has been found with different variables in previous investigations by the present author (Styers & Baker-Ward, 2006). In the previous study by Styers and Baker-Ward (2006), there was a gender difference for college students' reports of subjective time surrounding intensely negative high school experiences. Females believed the described events felt subjectively closer in time compared to male college students. This gender difference in perceptions of subjective time since the experience, may explain why females in the present study used more vivid sensory terms in their narratives compared to males. Females in the present study may also perceive events as subjectively closer, however, they were not explicitly asked about subjective perceptions. Future research should examine this possible mediator.

When considering overall internal states usage, it can be concluded that by utilizing a high density of internal states language, all individuals in this sample were thinking about

and reflecting back upon these problems and issues (Fivush & Baker-Ward, 2005). Interestingly, inspecting cross-sectional differences in internal states language suggests the younger age groups were more attentive to their emotions and sensory perceptions (e.g., feelings) compared to the older age group. The older age group was more reflective upon their cognitions and exclusions, compared to the younger age groups, suggesting a greater focus on meaning making from the experience. Park and Ai (2006) defined meaning making as viewing the situation in a new way to obtain agreement between beliefs and goals. The finding that college students utilized higher levels of cognitive and exclusion terms is certainly suggestive of reforming thoughts about an event, and it is possible that the greater use of these terms suggests greater engagement in meaning making. Additional hypotheses under later aims investigating positive reappraisal support this assumption.

Finally, even though participants did not distinguish between most and least important self-categories in terms of their language usage, it is still the case that participants acknowledged these events were different in their ratings of event intensity, importance and self-relevance. The discrepancy may lie in the need to protect the self from all types of negative experiences, not only those in their most important self-categories. James (1892/1968) suggests that individuals are motivated by a desire to be recognized in a positive light by others. This positivity bias may lead the individuals to respond to all types of threat in the same way, at least at the narrative level. Considering that mean levels of global self-worth were average and consistent across age groups, it may be the case that all age groups felt the need to express equal amounts of internal states language in response to both types of events. These events may differ with regard to their overall importance but the relevant item

to consider is that all events were still conflicts or problems. All issues may require the same types of attention, in order to protect the self from being viewed negatively in any domain.

This possibility is consistent with findings reported by Campbell et al. (2003), who examined college students' responses to major and minor threats to self-esteem and found that individuals responded to both types of threats equally by seeking social support and rationalizing the experience. In addition, Steele (1988) addresses this idea through the concept of self-affirmation, whereby adult individuals have a basic desire to see themselves as good, whole and competent beings. By addressing both types of threat (high and low in self-importance) through similar levels of internal states language, individuals in this sample may have been affirming their overall self as competent and whole.

Aim 2: Are there cross-sectional differences in narrative accounts of discounting the experience?

Contrary to expectations, cognitive and exclusive terms were not related to participants' ratings of the present importance of the event at any age level. The expected relationship for positive reappraisal was significant, such that the presence of positive reappraisal in the narrative was associated with lower levels of current importance for the elementary age group, but not for the remaining groups. The results suggest positive reappraisal may be a sensitive indicator of discounting in the narrative at least for the elementary age group. Harter (1999) notes that children begin to use discounting at the age of 8, when they begin discrediting the importance of any domain for which they perceive low personal competence levels and emphasize the importance of domains for which they perceive high competency. The present study addresses the first component of discounting,

whereby elementary children in this sample who used positive reappraisal also experienced a lowered importance surrounding the event. Interestingly, the same pattern was not evident in the middle school or college age groups. Previous studies and reviews conducted by Harter (1986, 1999, 2006) have noted that discounting occurs for children eight and older, particularly for those children high in self-worth and for those who perceive low competence in a particular area. The current finding supports the research on discounting by being the first to illustrate narrative relations to ratings of event importance. Additionally, in contrast to suggestions by Harter (1986, 1999, 2006), the only participants in this study to evidence discounting linkages between narrative reports and ratings were in the young elementary age group, rather than the sample as a whole. The results suggest future studies should examine narrative linkages to the importance surrounding specific events, in order to better understand age-related differences in narrative accounts of discounting.

Placing a quick positive spin on the situation may be sufficient for the youngest age group, who quickly crave a remedy to friendship troubles and desire the approval of significant others in their environment (Harter, 2006). In contrast, the middle school age group is supported by the creation of multiple selves (e.g., I'm different in sports than I am in school) (Harter, 2006), and as a result, a problem in one situation may not be as negative for this age group as it would be for another. The adolescent is able to fall back on other areas of the self when things do not work out as anticipated. For example, consider the following narrative from a middle school participant:

About a year ago... I tried out for the school tennis team and tryouts were three days, over the course of three days and I thought I was doing pretty well but on the last day they made cuts and I was one

of the cuts. But, it wasn't that bad for me, because I mean, I have other sports I like to play like basketball and football so it wasn't too much of a problem, but I didn't like getting cut at the time because I worked so hard and all of that was all gone for nothing and I didn't make the team.

In the above example, the adolescent is troubled by not making a team, but was able to deal with the experience by focusing on an ability to be a good athlete in another area. For the middle school student, there is no need to explicitly put a positive spin on the situation because the "self as a tennis player" is separate from the "self as a basketball or football player." As suggested by Harter (2006), this separation may serve as a buffer in the face of negative events, negating the need to put a positive spin on the situation.

The relationship between positive reappraisal and a change in importance surrounding the experience may not be present in the college age group due to a difference in environments. In contrast to the previous age groups, the college student has more freedom to seek out interactions that would enhance self-esteem (e.g., choosing a supportive group of friends or major in school) and is able to consider each experience within the realm of a coherent self-description (Harter, 2006). As a result, the college student may be able to discount the importance of a particular event by choosing another event within that same category (e.g., switching majors, finding new friends). This switch may not necessarily be positive and that is acceptable. The main concern is seeking an area that is self-bolstering rather than self-hindering. In addition, for college students, negative events may be considered in the context of a full life story (Habermas & Bluck, 2000) and as a result, may not be as negative as they would be for younger age groups, who are unable to put a small negative event into perspective. The utilization of positive reappraisal may signify that

college students have recovered from the event, but the present importance of the experience may still remain at a high level. Consider the following reappraisal from a college student who noted that she learned from the experience of not studying:

I realized I need to spend less time just sitting around or not prioritizing and study more often and study correctly, a little bit more efficiently because the way I do it now, waiting a day or two before the test and really the night before the test to do anything within class, really it is just not a good idea.

The described experience was negative, yet the specific incident taught the college participant something about their self and study behaviors. Learning something from the experience does not discount the present importance of the event and may instead elevate the present importance to a higher level. This assumption is also partially supported by self-reveal ratings, whereby college students rated their events as more self-revealing than the other age groups in this sample. Simply saying that the negative experience was ultimately positive does not discredit the current importance of that event in the context of a life story (Habermas & Bluck, 2000).

Aim 3: How does age group moderate the relationship between language use and coping?

In contrast to expectations, higher usage of positive emotion terms was associated with lower levels of assistance seeking and higher levels of cognitive avoidance at the time of the experience for the elementary age group. This pattern of results is especially interesting given that greater usage of positive emotion words in college students has been associated with fewer health center visits, better health and lower heart rate (Pennebaker & Francis, 1996; Pennebaker, 1997; Pennebaker et al., 1997) and in children (ages 3 to 4) has been associated with lower PTSD symptomatology six years later (Sales et al., 2005).

Generally, the consensus is that the inclusion of positive emotions may help individuals cope with stressors in a more effective manner (Pennebaker & Francis, 1996; Pennebaker, 1997; Pennebaker et al., 1997; Sales et al., 2005). Given that the relationship for elementary participants in this study was seemingly in contrast to previous studies, one would assume that higher levels of positive emotion for elementary students was associated with maladaptive coping responses. However, this may not necessarily be the case. The elementary school children's usage of positive emotion may be a positive coping strategy in response to the events in question.

Harter (2006) notes that elementary school children are developing an increasing realization that events may evoke both positive and negative emotions. In addition, children are beginning to evaluate situations without the assistance and immediate presence of other individuals (Harter, 2006). Rather than exclusively relying on an external source for evaluation (e.g., parents, teachers), children at this age are becoming their own judge of situations. While they may base their decisions on how they believe others might view them, the decision making/evaluation process is becoming increasingly internal (Harter, 2006). Considering that children in this age group utilize an internal evaluation with a consideration for how they believe others view the situation, it is not surprising that elementary school children might try to deal with a situation on their own, by using a high degree of positive emotion and perhaps exhibiting cognitive avoidance in order to dismiss the negative aspects of the situation.

Results from the original developer of the coping questionnaire (Brodzinsky et al., 1992) also seem to counter the finding relating positive emotion to lower assistance seeking

and higher cognitive avoidance. Brodzinsky et al. (1992) suggest that peer and school issues may call upon greater assistance seeking and less cognitive avoidance due to a “perception that these types of stressors are directly controllable” (p. 207). It should be noted that participants in the present study *did* discuss peer and school related issues in 83% of their most important self-category narratives. It is intriguing then to find this seemingly counterintuitive pattern of results. Additional examination of the preliminary analyses revealed a significant correlation for elementary school students, with higher levels of global self-worth being associated with lower levels of assistance seeking behavior. It may be the case that elementary school students who had higher global self-worth were more likely to own experiences and say in effect, “Others may evaluate this situation negatively but I’m good. I can handle the situation positively as others would expect.” In addition, the elementary school children are in Harter’s (2006) early stages of social comparison, where they are just beginning to appreciate the expectations of significant others and the growing salience of peer groups. Children of this age may feel that it is of critical importance to maintain positive friendships and to present their selves in a socially acceptable manner. If the elementary school students were truly discounting the experience, it makes sense that higher levels of positive emotion might be related to less assistance seeking and higher cognitive avoidance. The child is expressing present levels of high positive emotion and this is related to past levels of low assistance seeking and high cognitive avoidance as a result of the child quickly discounting the importance of the experience. By avoiding the situation and discrediting the importance, the elementary student may be able to move on from the situation in a positive manner. Though certainly not the most effective coping strategy, this

may be what works for elementary students, at least in certain situations, allowing them to overly view the positive aspects surrounding the situation and perhaps avoid the negative.

With consideration to age differences in appraisal, presence of positive reappraisal was associated with higher levels of cognitive avoidance for the middle school age group and lower levels of cognitive avoidance for the college age group. In addition, presence of positive reappraisal was associated with higher levels of cognitive behavioral problem across age groups. The finding relating positive reappraisal and cognitive avoidance is similar to the finding for positive emotions, suggesting that these types of language use may offer two similar but independent processes. Both relate to functioning following the experience, however, positive reappraisal may allow for a more sensitive measure of present functioning as the narrative is examined as a whole rather than piecemeal (i.e., only pulling out positive emotion words). It is interesting to note that middle school students evidenced the same pattern as elementary school participants for the relation between positive reappraisal and cognitive avoidance (positive emotion and cognitive avoidance for elementary). By placing a positive spin on the situation, participants at the two younger age levels this may have been able to quickly minimize the negative aspects of the problem experience. The elementary age group was able to protect their self from disapproval by significant others and the middle school age group may have turned quickly to the importance of another self (i.e., multiple selves in adolescence) (Harter, 2006).

The link between positive reappraisal and cognitive behavioral problem solving is an interesting one. The use of positive reappraisal may be reflective of more in-depth coping with the experience, either through the use of a positive spin or perceptions of personal

growth. The difference in positive reappraisal codes is also relevant. Consider that the majority of positive reappraisal codes (70%) across narratives for college students were original codes of “PR+PG,” which is indicative of levels of personal growth or some extension of the event forward in time. For college students, using positive reappraisal or personal growth involves a different process than quickly adding something positive to the narrative. The greater significance may be explained by the life story approach (Habermas & Bluck, 2000). Unlike the two younger age groups, college students are able to utilize thematic coherence and create some type of thematic similarity between multiple life events (Habermas & de Silveira, 2008). Consider the differences in positive reappraisal in the following elementary and college narratives:

It was not the guy’s fault but I really felt, really mad about it. I got over it. I thought it was actually pretty cool at first, it was basically the first bad injury I ever had, so that was pretty good. (Elementary narrative)

It is not fun to lose your best friend after that long but it was also an eye opener to a lot of things, like how the person really is and things about yourself. So, overall, even though it was negative, I think it has had a positive effect on my life. (College narrative)

In the above examples, the elementary student places a quick positive label on the event whereas the college student takes greater time and effort to describe the event and the positive implications on his or her life as a whole. This age-related change in cognition has been documented in several studies examining developmental increases in cognitive complexity in coping (Altshuler & Ruble, 1989; Band & Weisz, 1988; Levine & Pizzaro, 2007; Wilson et al., 2004), language use (Pennebaker & Stone, 2003) and self-development (Harter, 2006). Thematic coherence and an ability to view the self in the context of the larger

life story requires a greater level of cognitive abstraction, whereby the individual must be able to view the current self as a coherent and whole (Harter, 2006). This possibility in addition to other studies finding age-related increases in cognitive responses for coping and language use (Altshuler & Ruble, 1989; Band & Weisz, 1988; Levine & Pizzaro, 2007; Pennebaker & Stone, 2003; Wilson et al., 2004) support the current finding that positive reappraisal would be more strongly associated with higher levels of cognitive behavioral problem solving for the college age group. The overall process to higher levels of problem solving remains the same (i.e., placing a positive spin), but the pathway to that process may be different at various points in development.

Aim 4: How does age group moderate the relationship between language use and intrusions/avoidance?

Contrary to expectations and previous findings, no links were found between language use and reports of intrusive and avoidant thoughts. It is important to consider that mean levels of intrusion and avoidance were low for the sample, which is not surprising given the everyday nature of the issues and problems discussed by participants. Previous studies finding a relationship between language use and intrusion/avoidance in adult populations examined narratives dealing with the death of a loved one (Pennebaker et al., 1997) and intensely negative experiences from high school (Styers & Baker-Ward, 2008). In the childhood literature, previous studies finding a relationship between intrusion/avoidance and language explored narratives concerning: injuries requiring hospitalization (O'Kearney et al., 2007) and memory for Hurricane Andrew (Sales et al., 2005). The nature of these previous investigations were notably more traumatic and intense compared to the events

described in the present study. In the present investigation, participants discussed everyday problems, issues and conflicts which were more normative of daily life. It is not surprising then (and perhaps a relief), that participants were not overly troubled or stressed by the events described in this study. All participants may have dealt with these events in different ways, but their choice of coping lead them down positive pathways as their current levels of stress at the time of the interview were minimal.

Limitations and Future Directions

The current study illustrated cross-sectional differences in the ways in which individuals describe and understand everyday problem experiences. Cross-sectional differences were observed in the density of internal states language as well as the relations between language use and present importance of the event, in addition to relations between language and coping with everyday experiences.

It is important to consider that this study was the first to explicitly link internal states language in narrative reports with specific indicators of coping (e.g., assistance seeking, cognitive behavioral problem solving, cognitive avoidance, behavioral avoidance), with age group as a moderator. It was also the first study to systematically examine age group differences in internal states language for the period from middle childhood to young adulthood. The original study by Pennebaker and Stone (2003) examined age differences with arbitrary age cutoffs (8-14, 15-24) and involved a meta-analysis using a multitude of different narrative events and prompts. In the present study, age groups were specifically chosen due to their relations to stages of self-development (Harter, 2006) and all participants

were administered the same questionnaire and instructions, with only minor modifications accommodating changes in circumstances across age groups.

Whereas the results are intriguing, certain limitations should be taken into consideration. First, the results for elementary school students in the relation between positive reappraisal and current importance appear to suggest that discounting (Harter, 1999) took place; however, the current study did not examine the full definition of discounting. Questions that assess whether participants diminished the importance of one domain and increased the importance of another domain could be added, such as a Likert scale and open ended questions asking them if they emphasized the importance of another domain following the disappointing experience.

Second, these reports were both retrospective and cross-sectional. Individuals' reports of coping with the experience and descriptions of events may be biased by current perceptions of the experience. In addition, age differences were cross-sectional in nature and may represent cohort-related rather than true developmental differences. Future studies should follow individuals prior to a negative experience to several months afterward in order to fully appreciate developmental differences in meaning making following a potentially self-threatening experience.

Third, since described events involved moderate and everyday issues and problems, some may wonder whether this study was truly an investigation into self-threat. This study did investigate potential everyday threats to self, in that they were problems, issues or conflicts in important domains. However, future studies should investigate greater threats to self-worth by examining failures in domains of greater importance to individuals. For

example, future studies could examine narrative reports of children and adolescents who do not make it past the *American Idol* auditions, individuals who do not succeed in other competitive tryouts (e.g., beauty pageants, Olympic tryouts, movie/theater auditions) or individuals who are halted in their career pathway (e.g., not making it into college, graduate or medical school). These events may offer a clearer picture of developmental differences in response to a true threat to self.

Fourth, participants in this sample evidenced average to high levels of global self-worth. However, some correlational analyses detected relationships between high levels of global self-worth and lower assistance seeking. Future studies should obtain a larger sample to better understand the relationship between level of self-worth and responses to events.

These limitations notwithstanding, the present investigation establishes the importance of examining age group differences in language use and responses to everyday negative experiences. Further investigations of the real-time process of change to these recollections and coping patterns are needed. Such work is important in understanding developmental differences in meaning making and promises to better elucidate the relationship between language use and psychological functioning.

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APPENDICES

Appendix A. Parent letter and consent forms

Dear Parent or Guardian,

The [insert name of group] is cooperating with my doctoral dissertation research, which examines how children maintain a positive outlook. I am writing to describe this study and to invite your child to participate.

The research examines age differences in perspectives on everyday, disappointing experiences. The work is based on previous studies that indicate that how we interpret major life events affects our health and adjustment. At this time, however, little is known about developmental changes in the ways in which we interpret more minor and usual disappointing experiences (e.g., losing a sports game or having a disagreement with a friend). In doing so, we hope that this research will help us learn more about typical memory and emotional development. We also hope that this research will contribute to the identification of positive coping strategies at different ages.

All of the procedures in this study are completed in one session requiring 30 minutes. With your permission, your child will be interviewed individually at [insert name of group here]. Each child will be asked to discuss two moderately disappointing experiences from the past six months. Then, your child will be asked to recount the story of each event, as well as their thoughts and feelings pertaining to that event, into a tape recorder. Following this, your child will rate several aspects of the impact of the events selected. Your child's participation in this study is voluntary, and he or she may withdraw at any time. The children's responses are identified only by number to protect their privacy.

With regard to benefits, there is some research which has found that writing or talking about stressful experiences is associated with positive psychological outcomes, such as decreased anxiety and higher academic and work motivation. Additionally, each child will be given a \$5 Target gift card to thank them for their participation.

Of course, we cannot interview your group without your permission and your child's permission. If your child has permission to take part, please sign the accompanying consent form and have your child return it to their teacher.

Please call me or email me at Mary_Styers@ncsu.edu if you have any questions about this study. You may also contact my supervising professor, Dr. Baker-Ward. Thank you very much for your consideration.

Sincerely,

Mary Styers, M.S.

North Carolina State University
INFORMED CONSENT FORM for RESEARCH

(This consent form is valid from December 15, 2008 through December 15, 2009)

Title of Study: Narrative accounts of everyday problem experiences

Principal Investigator: Mary Styers, M.S.
Baker-Ward

Faculty Sponsor: Dr. Lynne

What are some general things you should know about research studies?

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

What is the purpose of this study?

Your child is invited to participate in a research study. The purpose of the study is to investigate children's reports of everyday events that are moderately negative and to explore their perceptions of these experiences.

What will happen if you take part in the study?

If you agree to allow your child to participate in this study, they will be asked to meet individually with a researcher on one occasion that will last approximately 30 minutes. Your child will be asked to select two recent life experiences, one a disappointing experience in an important domain and one a disappointing experience in a non important domain. The reports will be audio-recorded. Participants will also complete ratings scales that summarize their perceptions of the impact of these experiences and answer some background questions so that we can describe the sample as a whole.

Risks

Although there is minimal risk involved in this study, it is possible that describing past experiences could exacerbate pre-existing stress in some children. In the event that you observe symptoms of anxiety in your child following the interview and would like our assistance in obtaining counseling, please contact us for referral assistance. However, there is no provision for free services.

Benefits

Previous research has suggested that talking about stressful experiences is associated with positive outcomes, such as reductions in anxiety and increases in academic and work motivation. It is also hoped that the results of this experiment will contribute to the understanding of children's interpretation and reactions to their experiences.

Confidentiality

Confidentiality will be strictly maintained unless a participant's narrative describes plans to harm him- or herself or others or discloses child abuse. These circumstances would necessitate breaching confidentiality and alerting the appropriate authorities. Audiotapes and transcriptions of these tapes, identified only by a number, will be kept in a locked office and available only to the researchers. The master list linking names and numbers will be stored separately in a locked file in a faculty office and destroyed when interviews are transcribed.

Compensation

For participating in this study your child will receive a five dollar Target gift card. If your child withdraws from the study prior to its completion, your child will receive a five dollar Target gift card.

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, Mary Styers, M.S., at NCSU, Department of Psychology, 2310 Stinson Drive, Raleigh, NC 27695.

What if you have questions about your rights as a research participant?

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514), or Joe Rabiega, IRB Coordinator, Box 7514, NCSU Campus (919/515-7515).

Consent To Participate

“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.”

Parent’s Signature: _____ Date: _____

Child’s Name _____ Date of Birth (Month/Day/Year): _____

Investigator’s Signature: _____ Date: _____

Assent Form

You are being invited to take part in a project that will help psychologists know more about how children your age remember experiences. You will be asked to talk about some recent problems that you have had into a tape recorder. You will also be asked to rate how you remember and dealt with these problems. If you choose to participate, you will receive a \$5 Target gift card as a token of our appreciation. If you feel uncomfortable answering any questions, you may choose to skip them. If you want to stop, you can do so at any time. You may still keep the Target gift card if you do not complete the interview. The interview should take about 30 minutes.

Would you like to take part? Circle YES or NO

Teen Signature: _____

Investigator Signature: _____

North Carolina State University
INFORMED CONSENT FORM for RESEARCH

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Baker-Ward

Faculty Sponsor: Dr. Lynne

What are some general things you should know about research studies?

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

What is the purpose of this study?

You are being invited to participate in a research study. The purpose of the study is to investigate age differences in reports of everyday moderately negative events and to explore age differences in perceptions of these experiences.

What will happen if you take part in the study?

If you agree to participate in this study, you will be asked to meet individually with a researcher on one occasion that will last approximately 30 to 45 minutes. You will be asked to select two recent life experiences, one a disappointing experience in a important domain and one a disappointing experience in a non important domain. The reports will be audio-recorded. Participants will also be asked to complete ratings scales that summarize their perceptions of the impact of these experiences and answer some background questions so that we can describe the sample as a whole.

Risks

Although there is minimal risk involved in this study, it is possible that describing past experiences could exacerbate pre-existing stress in some individuals. In the event that you experience symptoms of anxiety following the interview and would like our assistance in obtaining counseling, please contact us for referral assistance. However, there is no provision for free services.

Benefits

Previous research has suggested that talking about stressful experiences is associated with positive outcomes, such as reductions in anxiety and increases in academic and work motivation. It is also hoped that the results of this experiment will contribute to the understanding of individual's interpretation and reactions to their experiences.

Confidentiality

Confidentiality will be strictly maintained unless a participant's narrative describes plans to harm him- or herself. These circumstances would necessitate breaching confidentiality and alerting the appropriate authorities. Audiotapes and transcriptions of these tapes, identified only by a number, will be kept in a locked

office and available only to the researchers. The master list linking names and numbers will be stored separately in a locked file in a faculty office and destroyed when interviews are transcribed.

Compensation

For participating in this study you will receive 2 credits for PSY 200 in Experimatrix. If you withdraw from the study prior to its completion, you will receive 2 credits for PSY 200 in Experimatrix. Other ways to earn the same amount of credit are to participate in another experiment or to write a course paper.

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, Mary Styers, M.S., at NCSU, Dept. of Psychology, 640 Poe Hall, 2310 Stinson Drive, Raleigh, NC, 27695.

What if you have questions about your rights as a research participant?

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514), or Joe Rabiega, IRB Coordinator, Box 7514, NCSU Campus (919/515-7515).

Consent To Participate

“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.”

Subject's signature _____ **Date** _____
Investigator's signature _____ **Date** _____

Appendix B. Full questionnaire for participants

Self-Perception Profile

We are interested in what each of you is like; what kind of a person you are like. This is a survey, not a test. There are no right or wrong answers. There is a sample question at the top. This question talks about two kinds of teens, and we want to know which teens are most like you.

- (1) Decide first whether you are more like the teens on the left side who would rather play outdoors or whether you are more like the teens on the right side who would rather watch T.V. Don't mark anything yet, but first decide which kind of teen is most like you, and go to that side of the sentence.
- (2) Now, 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.
- (3) For each sentence you only check one box. Sometimes it will be on one side of the page, and other times it will be on the other side of the page but only check one box for each sentence. You don't check both sides, just the one side most like you.
- (4) Now go ahead and check the other boxes based on the statement that is most like you.

REALLY TRUE FOR ME	SORT OF TRUE FOR ME		SORT OF TRUE FOR ME	REALLY TRUE FOR ME		
		Some people would rather play outdoors in their spare time	BUT	Other people would rather watch TV.		
		Some people are pretty pleased with themselves	BUT	Other people are often unhappy with themselves.		
		Some people don't like the way they are leading their life	BUT	Other people do like the way they are leading their life.		
		Some people are often not happy with themselves	BUT	Other people are happy with themselves as a person.		
		Some people often wish they were someone else	BUT	Other people like the kind of person they are.		
		Some people are very happy being the way they are	BUT	Other people wish they were different.		
		Some people are not very happy with the way they do a lot of things	BUT	Other people think the way they do things is fine.		

A. Sports

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

B. Friendships

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

C. School

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

D. Having a boyfriend/girlfriend

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

E. Having a job

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

Now that you have described this experience, please fill out the ratings below to let us know more about the experience you just described.

Please circle the term that best describes your reaction.

1) How bad did this event make you feel at the time that it happened?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

2) How bad do you feel about this event now?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

3) How important was this event to you at the time that it happened?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

4) How important is this event to you now?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

5) How much did this event reveal something about who you are?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

Try to think back, when did the event that you described happen? If you cannot remember the exact date, please write the month and year that it happened in. If you are having trouble remembering, please write your best guess.

Date: _____

Listed below are some ways that children and teenagers try to deal with their problems. Please tell us how often each of these statements has been true for you when you tried to deal with the problem you described. (Check the box that best describes your response)

	Never	Sometimes	Often	Very Often
1. I asked someone in my family for help with the problem.				
2. I got advice from someone about what I should do.				
3. I shared my feelings about the problem with another person.				
4. I kept my feelings to myself.				
5. I thought about the problem and tried to figure out what I could do about it.				
6. I took a chance and tried a new way to solve the problem.				
7. I made a plan to solve the problem and then I followed the plan.				
8. I went over in my head some of the things I could do about the problem.				
9. I thought about the problem in a new way so that it didn't upset me much.				
10. I learned a new way of dealing with the problem.				
11. I tried to figure out how I felt about the problem.				
12. I figured out what had to be done and then I did it.				
13. I tried not thinking about the problem.				
14. I went on with things as if nothing was wrong.				
15. I pretended the problem wasn't very important to me.				
16. I knew I had lots of feelings about the problem, but I just didn't pay any attention to them.				
17. I tried to get away from the problem for a while by doing other things.				

Please tell us how often each of these statements has been true for you when you tried to deal with the problem you described. (Check the box that best describes your response)

	Never	Sometimes	Often	Very Often
18. I pretended the problem had nothing to do with me.				
19. I tried to pretend that the problem didn't happen.				
20. I hoped that things would somehow work out so I didn't do anything.				
21. I tried to pretend that my problem wasn't real.				
22. I realized there was nothing I could do. I just waited for it to be over.				
23. I put the problem out of my mind.				
24. I stayed away from things that reminded me of the problem.				
25. I tried not to feel anything inside me. I wanted to feel numb.				
26. I went to sleep so I wouldn't have to think about it.				
27. When I was upset about the problem, I was mean to someone even though they didn't deserve it.				
28. I tried not to be with anyone who reminded me of the problem.				
29. I decided to stay away from people and be by myself.				

Below is a list of comments made by people after stressful life events. For each sentence, circle an answer to tell how much it has been true for you **WITHIN THE PAST WEEK**. If the statement doesn't describe what you did or felt during the past seven days, please circle "A" in the "not at all" column.

Note: Please do not include the time you thought about the event within this session.

	Not at All/ Does not Apply	Rarely	Sometimes	Often
I thought about it when I didn't mean to.	A	B	C	D
I avoided letting myself get upset when I thought about it or was reminded of it.	A	B	C	D
I tried to remove it from memory	A	B	C	D
I had trouble falling asleep or staying asleep because of pictures of thoughts about it that came into my mind.	A	B	C	D
I had waves of strong feelings about it.	A	B	C	D
I had dreams about it.	A	B	C	D
I stayed away from reminders of it.	A	B	C	D
I felt as if it hadn't happened or wasn't real	A	B	C	D
I tried not to talk about it.	A	B	C	D
Pictures about it popped into my mind.	A	B	C	D
Other things kept making me think about it.	A	B	C	D
I was aware that I still had a lot of feelings about it but didn't try to deal with them.	A	B	C	D
I tried not to think about it.	A	B	C	D
Any reminder brought back feelings about it.	A	B	C	D
My feelings about it were kind of numb.	A	B	C	D

Now we are going to do something a little different. We are also interested in how you can use words. Below we have different categories and we want you to write the first three things you can think of that go within that category. Such as fruits, and you write orange, and then you write two other fruits you can think of.

1) Fruits

2) Zoo animals

3) Clothing

4) Furniture

5) Vacation

Please STOP HERE and talk to the interviewer.

Now that you have described this experience, please fill out the ratings below to let us know more about the experience you just described.

Please circle the term that best describes your reaction.

1) How bad did this event make you feel at the time that it happened?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

2) How bad do you feel about this event now?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

3) How important was this event to you at the time that it happened?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

4) How important is this event to you now?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

5) How much did this event reveal something about who you are?

Not at all	A little	Some	Medium	A lot	A whole lot	Extremely
------------	----------	------	--------	-------	-------------	-----------

Try to think back, when did the event that you described happen? If you can't remember the exact date, please write the month and year that it happened in. If you're having trouble remembering, please write your best guess.

Date: _____

Below is a list of comments made by people after stressful life events. For each sentence, circle an answer to tell how much it has been true for you **WITHIN THE PAST WEEK**. If the statement doesn't describe what you did or felt during the past seven days, please circle "A" in the "not at all" column.

Note: Please do not include the time you thought about the event within this session.

	Not at All/ Does not Apply	Rarely	Sometimes	Often
I thought about it when I didn't mean to.	A	B	C	D
I avoided letting myself get upset when I thought about it or was reminded of it.	A	B	C	D
I tried to remove it from memory	A	B	C	D
I had trouble falling asleep or staying asleep because of pictures of thoughts about it that came into my mind.	A	B	C	D
I had waves of strong feelings about it.	A	B	C	D
I had dreams about it.	A	B	C	D
I stayed away from reminders of it.	A	B	C	D
I felt as if it hadn't happened or wasn't real	A	B	C	D
I tried not to talk about it.	A	B	C	D
Pictures about it popped into my mind.	A	B	C	D
Other things kept making me think about it.	A	B	C	D
I was aware that I still had a lot of feelings about it but didn't try to deal with them.	A	B	C	D
I tried not to think about it.	A	B	C	D
Any reminder brought back feelings about it.	A	B	C	D
My feelings about it were kind of numb.	A	B	C	D

Please fill out the following information. Remember that you can choose not to answer any question.

The Basics:

A) I am in the _____ grade.

B) My gender is: MALE FEMALE

C) My date of birth is: (MM/DD/YYYY) __ __/ __ __/ __ __ __ __

D) I describe my racial/ethnic background as: _____

E) My hometown is best described as: RURAL SUBURBAN URBAN

F) My school is: K-5 K-6 6-8 7-8 K-8 I am home schooled

G) My school is: PUBLIC PRIVATE CHARTER

Please STOP HERE and talk to the interviewer.

Appendix C. Preliminary analyses: Demographic differences in language use

In order to determine if language use differed by demographic characteristics, four mixed between-within analyses of variance were conducted separately for cognitive terms, positive emotion terms, negative emotion terms and exclusions in the narrative. Between participants factors were ethnicity and community. The within-participants factor was self-importance category (most versus least) for all analyses. Beginning with the analysis of variance for cognitive term usage, none of the interactions were significant, however there was a main effect of ethnicity ($F(3,150) = 3.82, p = .01, \eta^2 = .07$) (see Table 7 for means). The main effect of ethnicity was between Caucasian participants ($M = 6.82, SD = 3.08$) and those who varied in their racial/ethnic descriptions (e.g., American, offering no answer, Hispanic) ($M = 8.33, SD = 3.50$). Since the other racial/ethnic group in itself has a large amount of variance in ethnicity, subsequent analyses will not control for ethnicity. An additional analysis examined cognitive term differences with location⁵ as the within subjects factor and self-category importance as the within-subjects factor. There were no significant effects of location. Subsequent analyses examining cognitive terms will not control for demographic differences.

⁵ Location was examined in a separate analysis in order to investigate differences in location for the two younger age groups. College students were all recruited from the same location (university campus) and were not included in the analysis.

Table 7. Means and standard deviations of cognitive terms by importance category and demographic variables

Location	Most Important	SD	Least Important	SD	<i>n</i>
After School Clubs	6.18%	(.03)	6.56%	(.03)	56
University Campus	7.47%	(.04)	7.59%	(.04)	14
Personal Connections	7.39%	(.04)	7.74%	(.04)	30
Ethnicity					
Caucasian	6.94%	(.03)	6.78%	(.03)	104
African American	8.58%	(.03)	7.92%	(.03)	16
Asian	7.08%	(.03)	8.52%	(.04)	10
Other	7.73%	(.03)	8.93%	(.04)	24
Community					
Rural	7.19%	(.03)	7.48%	(.03)	33
Suburban	7.19%	(.03)	7.36%	(.03)	105
Urban	7.71%	(.03)	6.80%	(.03)	15

Note. Means represent percentage of the narrative

Next, when examining demographic differences in positive emotion terms (Table 8), there were no significant main effects or interactions for ethnicity or hometown. An additional analysis examined positive emotion term differences with location as the within subjects factor and self-category importance as the within-subjects factor. There were no significant effects of location.

Table 8. Means and standard deviations of positive emotion terms by importance category and demographic variables

Location	Most Important	SD	Least Important	SD	<i>n</i>
After School Clubs	2.91%	(.02)	2.62%	(.02)	56
University Campus	2.81%	(.02)	2.49%	(.02)	14
Personal Connections	2.27%	(.02)	2.41%	(.02)	30
Ethnicity					
Caucasian	2.41%	(.02)	2.33%	(.02)	104
African American	3.07%	(.02)	2.70%	(.02)	16
Asian	1.32%	(.01)	1.80%	(.02)	10
Other	2.29%	(.02)	2.63%	(.02)	24
Community					
Rural	2.27%	(.02)	2.81%	(.02)	33
Suburban	2.38%	(.02)	2.35%	(.02)	105
Urban	2.71%	(.02)	1.77%	(.01)	15

Note. Means represent percentage of the narrative

After exploring demographic differences in negative emotion terms (Table 9), there was one significant main effect of event importance ($F(1,151) = 4.20, p = .01, \eta^2 = .03$) and no significant interactions. The main effect of event importance was in the expected direction, such that most important self-event narratives contained a higher percentage of negative emotion (2.5%) compared to least important self-event narratives (2.1%). An additional analysis examined negative emotion term differences with location as the within subjects factor and self-category importance as the within-subjects factor. There were no significant effects of location.

Table 9. Means and standard deviations of negative emotion terms by importance category and demographic variables

Location	Most Important	SD	Least Important	SD	<i>n</i>
After School Clubs	2.90%	(.02)	2.33%	(.02)	56
University Campus	2.64%	(.02)	2.65%	(.02)	14
Personal Connections	2.57%	(.02)	2.16%	(.01)	30
Ethnicity					
Caucasian	2.50%	(.02)	2.18%	(.02)	104
African American	1.99%	(.01)	1.90%	(.01)	16
Asian	3.24%	(.02)	2.56%	(.01)	10
Other	2.49%	(.02)	1.71%	(.02)	24
Community					
Rural	2.71%	(.02)	2.06%	(.02)	33
Suburban	2.45%	(.02)	2.20%	(.02)	105
Urban	2.21%	(.02)	1.47%	(.01)	15

Note. Means represent percentage of the narrative

Finally, when examining demographic differences in exclusive terms (Table 10), there were no significant main effects or interactions when examining ethnicity and community. An additional analysis examined negative emotion term differences with location as the within subjects factor and self-category importance as the within-subjects factor. There were no significant effects of location. Subsequent analyses examining exclusion terms will not control for demographic differences.

Table 10. Means and standard deviations of exclusion terms by importance category and demographic variables

Location	Most Important	SD	Least Important	SD	<i>n</i>
After School Clubs	3.96%	(.03)	4.29%	(.02)	56
University Campus	3.58%	(.03)	5.02%	(.03)	14
Personal Connections	4.36%	(.02)	3.93%	(.02)	30
Ethnicity					
Caucasian	4.02%	(.02)	4.42%	(.02)	104
African American	5.50%	(.03)	4.59%	(.02)	16
Asian	3.99%	(.01)	6.35%	(.04)	10
Other	4.06%	(.02)	4.33%	(.02)	24
Community					
Rural	3.60%	(.02)	4.74%	(.02)	33
Suburban	4.32%	(.02)	4.48%	(.03)	105
Urban	4.31%	(.02)	4.60%	(.02)	15

Note. Means represent percentage of the narrative

Appendix D. Preliminary analyses: Language differences in questionnaire order

In order to determine if language use differed by questionnaire version, four mixed between-within analysis of variance were conducted separately for cognitive terms, positive emotion terms, negative emotion terms and exclusions in the narrative. The between participants factor was questionnaire version. The within-participants factor was importance self-category (most versus least) for all analyses.

Across all analyses, examining cognitive terms, positive emotion terms, and exclusive terms, none of the main effects or interactions were significant. Means and standard deviations are presented in Table 11. There was only one significant main effect for the model predicting negative emotion terms ($F(1,152) = 4.51, p = .03, \eta^2 = .03$). There was a higher percentage of negative emotion terms in most compared to the least self-category narratives. Subsequent analyses will not control for questionnaire version.

Table 11. Means and standard deviations of key language variables by importance category and questionnaire version

Version		Most Important	SD	Least Important	SD
Most-Least	Cognitive terms	7.30%	(.03)	7.09%	(.03)
	Positive emotion terms	2.22%	(.02)	2.23%	(.02)
	Negative emotion terms	2.36%	(.02)	1.87%	(.01)
	Exclusive terms	4.24%	(.02)	4.35%	(.02)
Least-Most	Cognitive terms	7.21%	(.03)	7.56%	(.03)
	Positive emotion terms	2.54%	(.02)	2.52%	(.02)
	Negative emotion terms	2.59%	(.02)	2.32%	(.02)
	Exclusive terms	4.12%	(.02)	4.74%	(.03)

Note. Means represent percentage of the narrative

Appendix E. Manipulation check for different types of events

Ratings of Overall Event Category Importance

As a manipulation check, a mixed between-within analysis of variance was conducted to analyze differences in ratings of event self-category importance. These were the ratings from the beginning of the questionnaire which the interviewer used to determine the events the participant would discuss, by asking them to talk about events from these highest and lowest rated self-categories. The between-participants factors were gender and age group (Elementary, Middle, College). The within-participants factor was event importance self-category (most versus least important category). There was a main effect of importance ($F(1,149) = 631.46, p < .001, \eta^2 = .81$), such that the interviewer appropriately asked the participant to discuss events from categories differing in importance to the self. In other words, the participants discussed events from two distinct self-importance categories, one being more important and the other less important. There was also a main effect of grade level ($F(2,149) = 4.74, p = .01, \eta^2 = .06$). Elementary school participants discussed events from more important self-categories ($M = 4.26, SD = 1.58$) compared to middle school ($M = 3.86, SD = 1.96$) and college participants ($M = 3.80, SD = 2.01$) ($ps < .05$). There was also a significant importance by grade level interaction ($F(2,149) = 13.83, p < .001, \eta^2 = .16$) and a significant importance by gender interaction ($F(1,149) = 7.76, p < .006, \eta^2 = .05$). For the least event category only, elementary school participants discussed events with a significantly higher importance rating ($M = 3.23, SD = 1.46$) compared to middle school ($M = 2.27, SD = 1.37$) and college participants ($M = 2.04, SD = 1.24$) ($ps < .01$). With regard to gender, males and females differed in their ratings of the most important event, with females discussing events with a slightly higher rating (5.5 versus 5.3) ($p = .05$). The three way interaction was not significant. Means and standard deviations are presented in Table 12. Interviewers succeeded in choosing events that differed in

categorical importance. The differences in categorical ratings by grade level and gender will be considered in the event of similar patterns of results in tests of the main hypotheses.

Table 12. Means and standard deviations of event categories by importance level, gender and age group

		Most Important	SD	Least Important	SD	n
Male	Elementary	5.23	(.86)	3.13	(1.41)	30
	Middle School	5.26	(.96)	2.78	(1.00)	23
	College	5.36	(.73)	2.27	(1.39)	22
Female	Elementary	5.36	(.85)	3.36	(1.56)	22
	Middle School	5.58	(.90)	1.81	(1.47)	26
	College	5.69	(.47)	1.88	(1.13)	32

Note. Event self-category importance ratings were assessed on a 0 to 6 point scale, with 0 indicating “Not at all important” to 6 indicating “Extremely important.”

Ratings of chosen event importance at the time of the event

A mixed between-within analysis of variance was conducted to analyze differences in ratings of the discussed event importance at the time of the event. After providing a narrative, participants rated how important the discussed event was to them at the time that it happened. Ratings of importance at the time of the event were assessed on a 0 to 6 point scale, with 0 indicating “Not at all important” to 6 indicating “Extremely important.” The between-participants factors were gender and age group (elementary, middle, college). The within-participants factor was event type (most versus least important self-category). There were no significant interactions but there was one significant main effect of event type ($F(1,147) = 23.52, p < .001, \eta^2 = .14$). Participants classified their most important self-event narratives ($M = 4.48, SD = 1.43$) as more important at the time that they happened compared to their least important event narratives ($M = 3.71, SD = 1.72$). Not only did participants discuss events from their most and least important self-categories, but these specific events differed in their importance at the time of the experience.

Ratings of event intensity at the time of the event and the interview

A mixed between-within analysis of variance was conducted to analyze differences in ratings of event intensity at the time of the event. The between-participants factors were gender and age group (elementary, middle, college). The within-participants factor was event self-category (most versus least important). There was a main effect of event self-category ($F(1,148) = 16.67, p < .001, \eta^2 = .10$). Across all participants, events from the most important self-event category were rated as more intense at the time of the event ($M = 4.22, SD = 1.54$) compared to events from the least important self-category ($M = 3.55, SD = 1.74$). Additionally, there was a main effect of age group ($F(2,148) = 10.59, p < .001, \eta^2 = .13$). Across both event types, college students rated their events as more intense at the time ($M = 4.53, SD = 1.42$) compared to middle school ($M = 3.64, SD = 1.72$) and elementary school participants ($M = 3.43, SD = 1.67$).

Since there were main effects of gender and grade level on intensity at the time of the experience, an additional mixed between-within analysis of variance was conducted to analyze differences in perceptions of event intensity at the time of the interview. The between-participants factors were gender and age group (elementary, middle, college). The within-participants factor was event type (most important versus least important category). There was only one significant main effect and no interactions. Participants reported that the event from the most important self-category ($M = 2.38, SD = 1.73$) was more intense in the present than the event from the least important ($M = 1.72, SD = 1.56$) self-category ($F(1,148) = 11.57, p = .001, \eta^2 = .07$).

Ratings of self-relevance

A mixed between-within analysis of variance was conducted to analyze differences in ratings of self-relevance. Participants rated how much each experience “revealed something about who you are” on a 0 (Not at all) to 6 (Extremely) point scale. The between-participants factors were gender and age group (elementary, middle, college). The within-participants factor was event importance self-

category (most versus least important). There were two significant main effects and no interactions. Across all participants, narratives from most important self-categories were rated as more self-revealing ($M = 2.90$, $SD = 1.82$) compared to narratives from least important ($M = 2.57$, $SD = 1.71$) self categories ($F(1,148) = 4.23$, $p = .04$, $\eta^2 = .03$). Interestingly, there was also a main effect for age group. College students reported their events as more self-revealing compared to middle school and elementary school participants ($F(2,148) = 9.09$, $p < .001$, $\eta^2 = .11$)

Appendix F. Non-significant hierarchical models for Aim II

Hypothesis A. Exclusions will be directly related to a lessened importance of the event over time and age will moderate this relationship.

Individuals may experience a change in importance but the relative change in importance does not account for where they started. In order to deal with this issue, analyses were conducted again, with the model predicting current event importance and controlling for past event importance. Preliminary analyses utilized Pearson correlations to assess potential relationships between the dependent variable (present importance) and potential confounds (gender, actual time, narrative importance self-category, importance at the time of the event). There was a significant correlation for narrative importance self-category ($r = .23, p = .01$) and for importance at the time ($r = .23, p = .01$). Events from most important self-categories had higher present importance and higher levels of present importance were rated to higher levels of past importance. A regression analysis was conducted to examine the extent to which predictors involving age group and exclusion terms account for individual differences in present importance. As can be seen in Table 13, the first predictor block accounted for 19% of the variance in present importance. Narrative type and past event importance were both significant covariates ($ps < .01$). Exclusive term use, age group and their interactions were added in block 2 and the amount of variance increased to 20%, which was not a significant ($F(5,297) = 0.60, p > .10$) increase from Block 1. Turning to regression estimates, there were no significant interactions or main effects with the exception of narrative category and importance at the time.

Table 13. Summary of regression analysis for exclusion and age variables predicting present importance

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Narrative type	0.55**	0.19	0.15	0.55**	0.19	0.15
Importance at the time	0.41**	0.06	0.37	0.39**	0.06	0.36
Elementary				-0.54	0.52	-0.14
Middle				-.075	0.53	-0.20
Exclusive terms				-0.09	0.08	-0.11
Exclusive terms X Elementary				0.09	0.10	0.11
Exclusive terms X Middle				0.10	0.10	0.13
R ²		.19			.20	
ΔR^2					.01	

Note. † $p < .10$ * $p < .05$ ** $p < .01$

Hypothesis B. Cognitive term usage will be inversely related to a lessened importance of the event over time. Age is expected to moderate this relationship, such that cognitive term usage will be more strongly related to a lessened importance for the college age group compared to the two younger age groups.

Analyses were conducted, with the model predicting current event importance and controlling for past event importance. Preliminary analyses utilized Pearson correlations to assess potential relationships between the dependent variable (present importance) and potential confounds (gender, actual time, narrative importance self-category, importance at the time of the event). There was a significant correlation for importance self-category ($r = .23, p = .01$) and for importance at the time ($r = .23, p = .01$). Events from most important self-categories had higher present importance and higher levels of present importance were rated to higher levels of past importance. A regression analysis was conducted to examine the extent to which predictors involving age group and cognitive terms account for individual differences in present importance. Further preliminary analyses tested for homeodasticity of the model and found there was one case with a standardized residual over 3. The

case was removed resulting in a loss of less than 1% of the data. As can be seen in Table 14, the first predictor block accounted for 19% of the variance in present importance. Narrative type and past event importance were both significant covariates ($ps < .01$). Cognitive term use, age group and their interactions were added in block 2 and the amount of variance increased to 20%, which was not a significant ($F(5,297) = 0.60, p > .10$) increase from Block 1. Turning to regression estimates, there were no significant interactions or main effects with the exception of narrative category and importance at the time.

Table 14. *Summary of regression analysis for cognitive term and age variables predicting present importance*

Predictors	Block 1			Block 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Narrative type	0.55**	0.19	0.15	0.56**	0.19	0.16
Importance at the time	0.41**	0.06	0.37	0.40**	0.06	0.36
Elementary				0.07	0.64	0.02
Middle				-0.22	0.66	-0.06
Cognitive terms				0.04	0.06	0.08
Cognitive terms X Elementary				-0.18	0.08	-0.04
Cognitive terms X Middle				-0.01	0.08	-0.01
R ²		.19			.20	
ΔR^2					.01	

Note. † $p < .10$ * $p < .05$ ** $p < .01$