Journal of Adult Development, Vol. 11, No. 4, October 2004 (© 2004)

Young and Older Adults' Expression of Emotional Experience: Do Autobiographical Narratives Tell a Different Story?

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Though autobiographical remembering is a common means of emotional expression in everyday life, rarely have autobiographical narratives been used to assess emotion. Studies rely instead on retrospective scalar measures. In this study, 87 young ($M = 20$) and older ($M = 62$) adults' scalar reports and narratives of the salience, frequency, and intensity of emotional reactions to the OJ Simpson verdict announcement were compared. Scalar measures and autobiographical narratives sometimes tell different stories about certain aspects of emotion. Supporting theory, scalars measures, and narratives both indicate greater salience of emotion in late life. In contrast to expectation, older adults more frequently expressed negative affect in their narratives, but not in scalars measures. Both types of measures did, however, show a higher intensity of sadness in older adults. Theories of emotion and aging may benefit from incorporating the role of memory, and reactions to specific negative life events.

KEY WORDS: emotion; aging; autobiographical memory.

The role that memory plays when assessing emotional experience has received little direct attention in the emotion and aging literature. With the exception of on-line reports of emotion (e.g., Carstensen, Pasupathi, Mayr, & Nesselroade, 2000) and physiological measures (e.g., Levenson, Carstensen, Friesen, & Ekman, 1991), however, most studies involve remembering emotion. Even traditional scalar measures, the most common means of assessment, involve memory. For example, participants are often asked to evaluate emotional experiences across a retrospective period (e.g., happiness over the past few weeks), though results are interpreted with respect to emotion, not memory. Only a few studies have directly assessed remembered emotion (Carstensen & Turk-Charles, 1994; Levine & Bluck, 1997; Malatesta & Kalnok, 1984). If memory for emotion is being examined in many studies of emotion and aging then this literature should benefit from studies that employ methods that embrace this memory component.

One common way of expressing emotion in everyday life is through autobiographical remembering and sharing of emotional events (e.g., Rime, Finkenauer, Luminet, Zech, & Phillipot, 1998). Despite the frequent expression of emotion through retelling events, there is no known research in the emotion and aging literature that has explored emotion through examining autobiographical narratives of a real-world event. In the autobiographical memory and aging literature (see Cohen, 1998, for a review) there are only a few studies that have examined the emotional quality of such narratives (e.g., Levine & Bluck, 1997; Pasupathi & Carstensen, 2002).

One reason this scarcity of research is methodological: it is difficult to find a single emotionally involving event that many, both young and old, people have experienced. The announcement of the acquittal verdict in the Orenthal James (OJ) Simpson double murder trial provided such an event. In the current study, we examine age differences and similarities using both retrospective scalar measures, and

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1068-0667/04/1000-0235/0 © 2004 Plenum Publishing Corporation

autobiographical memory narratives about the same emotionally involving, real-world event. In doing so, we are able to assess the extent of convergence between memory narratives and more traditionally employed scalar measures of emotion, as well as identify any potential benefits of using narratives, a more ecologically valid measure of remembered emotion. We rely on established theories of emotion and aging to provide a theoretical framework for the current study.

Theories of Emotion and Aging

Two prominent theoretical accounts highlight the role of emotion in late life (see Magai, 2001, for a review). Socioemotional selectivity theory (SST; Carstensen, 1992, 1995) situates emotion in the context of social goals associated with different life phases (Isaacowitz, Charles, & Carstensen, 2000). Labouvie-Vief's cognitive–affective developmental theory delineates the role of affect within the developing cognitive and ego processes of the adult (Labouvie-Vief, 1997; Labouvie-Vief & DeVoe, 1991). Despite different frameworks, both theories suggest that emotion becomes more salient with age: older adults are more likely than younger adults to focus on emotion in their everyday lives.

Both theories also agree that individuals become better at self-regulating the frequency and intensity of emotional experience (Carstensen, 1995; Labouvie-Vief, Hakim-Larson, DeVoe, & Schoeberlein, 1989). Through self-regulation of emotion (see Gross, 1999, for a review), older adults should more frequently experience positive affect, and less frequently experience negative affect. Beyond frequency, older adults should also self-regulate intensity of emotion in order to maintain positive affect (e.g., down-regulating negative emotion and up-regulating positive emotion; Gross et al., 1997; Levenson, 2000). These two theories thus provide persuasive, convergent frameworks for emotion and aging research.

Although neither theory directly incorporates the role of memory, both allude to its importance in relation to emotion and aging. Carstensen and colleagues suggest that the salience of emotion may be manifest through better memory for emotional information (Carstensen & Turk-Charles, 1994; Isaacowitz et al., 2000). Labouvie-Vief's theory refers to cognition, but does not make direct reference to memory. In developing her assessment scheme, however, individuals were asked to recall times they were angry, sad, afraid, and happy (Labouvie-Vief, DeVoe, & Bulka, 1989). One long-term objective of the current study is to begin to build a body of research that can be used to directly incorporate memory in theories of emotion and aging. An additional objective is to examine the ability of theoretical accounts to predict age group findings regarding specific autobiographical events.

Empirical results concerning changes in emotion across the life span do not paint as clear a picture as theoretical predictions: in fact, they provide mixed findings. One reason for this may be the lack of attention to whether studies report current or retrospective affect measures. In the following empirical review, we cite only studies that use retrospective measures of emotion. These include traditional scalar measures of past emotional experience, and, less commonly, assessments of remembered emotion through the use of text narratives.

A second reason for the ambiguity in the literature may be the range and valence of emotion-eliciting stimuli that are used. Stimuli range from general assessments of both positive and negative emotion (e.g., emotion "summed" over the past month) to assessment of emotion in response to specific positive and negative stimuli (e.g., in response to a specific laboratory event). Although the current study is about a specific event (negative event to most of our sample), we draw upon work using both general and specific, and positive and negative emotion-eliciting stimuli because this distinction has not been made in the literature before.

A third reason for the mixed empirical results is that emotion is a multifaceted construct, and has been operationalized in terms of its many aspects (e.g., experience, expression, regulation, etc.; see Lawton, 2001, for a review) leading to confusion in the literature in terms of conclusions about emotion, per se. To avoid this confusion in our review, we present research only on the three aspects of emotion for which there is theoretical agreement about predicted age differences: the salience of emotion, the frequency of types of emotion, and the intensity of emotion.

Salience of Emotion

Salience of emotion refers to individuals' focus on emotion in everyday life (Carstensen & Turk-Charles, 1994). It has been found, using scalar measures, that young adults are more likely than older adults to retrospectively report emotion as central to their life at a general level (Malatesta & Kalnok, 1984). There are no age differences, however, in

the reported salience of emotion for specific events (Bluck, Levine, & Laulhere, 1999; Cohen & Faulkner, 1988). Thus, findings regarding age differences in the salience of emotion using scalar measures are mixed. When examining narratives, however, compared to younger adults, older adults recall a higher proportion of emotional to neutral material from narrative passages (Carstensen & Turk-Charles, 1994). Older adults' focus on emotional over neutral material is also evident in narratives about everyday events performed in the laboratory (Hashtroudi, Johnson, & Chrosniak, 1990).

In summary, narrative measures have been unequivocal in their support of theory, and scalar measures often, though not always, support theoretical claims of increased salience of emotion with age. Thus, in the current study, we expect that older adults' autobiographical narratives will contain a higher degree of emotional information than younger adults' narratives. We explore whether scalar measures about the same event tell a convergent or a different story.

Frequency of Types of Emotion

Type of emotion can be examined in two ways: the frequency of experiencing positive and negative emotion and the frequency of experiencing discrete emotions (e.g., sadness, anger). The comparison of negative and positive, driven partly by theoretical predictions, has dominated the aging and emotion literature. Older adults report experiencing more positive affect and less negative affect than younger age groups over the past month (Mroczek & Kolarz, 1998) and over the past year (Kunzmann, Little, & Smith, 2001) using scalar measures. Other studies using similar measures also find a decrease in the frequency of negative affect with age (Barrick, Hutchinson, & Deckers, 1989; Charles, Reynolds, & Gatz, 2001; Stacey & Gatz, 1991). In very old age groups, however, small decreases have sometimes been noted in the frequency of positive affect (Charles et al., 2001; Stacey & Gatz, 1991). Still other studies have found no age differences in the frequency of retrospective positive affect for older and younger adults using scalar measures (Barrick et al., 1989; Pasupathi, 2003). Data regarding positive and negative affect expressed in narratives is unavailable.

Examination of discrete emotions (e.g., happy and angry) is standard in emotion research but is only seen in a few studies of emotion and aging (see Dougherty, Abe, & Izard, 1996, for a review). Gross and colleagues (Gross et al., 1997) investigated the retrospective frequency of experiencing five discrete emotions across age groups (Studies 3 and 4). In one study, older women report experiencing anger less often than younger women, but no differences for sadness, happiness, disgust, or fear. With a select sample (nuns), however, using scalar measures anger, sadness, and fear decreased with age, happiness increased with age, and disgust did not change. Finally, there were no age differences across 12 emotions assessed with scalar measures when remembering emotional autobiographical events (Strongman & Kemp, 1991). Again, as with positive and negative emotions, narrative data is unavailable. We are hesitant to draw conclusions from this limited body of research. Studies that include the measurement of discrete emotions seem a necessary step in refining the literature on emotion and aging: we thus examine measures of discrete emotions.

In sum, consistent with theory and data using scalar measures, we expect that older adults will report experiencing less negative affect to the OJ Simpson verdict announcement than younger adults (taking into account desired verdict outcome) on our scalar measures. There are no narrative data available on which to base predictions about whether the narratives will tell the same story. Although theory predicts an increase in positive affect in later life, actual research findings are mixed. We expect to find no age differences in the frequency of positive affect using either scalar or narrative measures. Because both theory and empirical findings regarding discrete emotions are scarce, their examination is exploratory.

Intensity of Emotion

Theories of emotion and aging suggest that older adults up-regulate the intensity of positive and down-regulate the intensity of negative emotion. Empirical work thus far has neither fully supported nor refuted (or refined) theoretical claims. Intensity of emotion has been assessed generally (e.g., overall intensity of emotion in one's life) and specifically (e.g., intensity of discrete emotions). Using retrospective scalar measures of general emotional intensity, there is a decline across age groups (Barrick et al., 1989; Diener, Sandvik, & Larsen, 1985; Lawton, Kleban, Rajagopal, & Dean, 1992; Malatesta & Kalnok, 1984). When asked about the intensity of six different emotions, however, no age differences emerge (Gross et al., 1997). Similarly, when individuals are asked to relive

previous emotions and report intensity using scalar measures, there are no differences between younger and older adults (Levenson et al., 1991). In addition, older adults report feeling discrete emotions, such as anger and sadness (negative emotions), as intensely as younger adults when recalling past events (Bluck & Li, 2001).

In sum, because we examine particular reactions to a specific event, we expect, consistent with previous data, no age differences in level of intensity for overall positive and negative valence of emotion, or discrete emotions for scalar measures. We recognize that this expectation is contrary to theoretical statements regarding up- and down-regulating emotional intensity to maintain positive affect (e.g., Levenson, 2000). In the case of intensity in the narratives, no data exists on which to make age predictions. Thus, we examined the narratives for the story they tell.

The Current Study: One Event, Two Measures

The goal of the current study is to compare young and older adults' emotional responses to a real-world event, the announcement of the verdict in the OJ Simpson murder case. After a year-long trial that aroused much public interest, OJ Simpson, a national football hero, was acquitted of the murders of his wife, Nicole Brown Simpson, and her friend, Ron Goldman. The verdict was announced live on television, and was an emotionally involving event for many Americans in the region (Southern California) and around the nation. The occurrence of a single event about which many individuals both young and old displayed intense emotion, offered a research opportunity: individuals' personal experience of the event was used in this study to assess age differences and similarities in emotion using two retrospective measures, scalar measures, and autobiographical narratives.

Although using a single event has limitations (as further addressed in the Discussion section), the multi-measure design and the use of an autobiographical event as the emotion-eliciting trigger, offer several benefits. First, it provides the opportunity to compare standard scalar measures to actual narratives of felt emotion within a single study. Second, even when multi-methods are used within a single study (e.g., Levenson et al., 1991) the event used to trigger emotion across measures often differs. In the present study, the emotion-triggering stimuli is the same. Third, stimuli used to trigger emotion in laboratory studies (e.g., pictures, fictional texts) may lack the meaningfulness of actual events that individuals attend to of their own volition (not in the context of an experiment). In sum, examining a single autobiographical event that was meaningful to participants allows us to test the limits of theories of emotion and aging in terms of their application to real-world events. The current study design enables us to compare the salience, the frequency, and the intensity of experienced emotion using two different retrospective methods of assessment, but holding the event constant. Using autobiographical narratives to assess emotional experience offers an ecologically valid way to investigate emotion and aging that embraces the interrelation of memory and emotion in everyday experience.

METHOD

Participants

Fifty-six younger adults ($M = 20.0$ years, $SD = 2.0$) and 37 older adults ($M = 61.9$ years, $SD = 8.5$) participated in the study. Six participants (two younger and four older) were not included in analyses due to inaudible interview tapes. Thus, analyses were conducted with 87 individuals (unless otherwise noted): 21 young men and 33 younger women, and 6 older men and 27 older women. We acknowledge that the two samples thus differ in terms of their gender distribution, and appropriately address this potential bias with further analyses.

All of the participants had watched the announcement of the verdict in the double murder trial of Orenthal James Simpson on television at 10:00 a.m. on October 3, 1995. The young adults were recruited through the subject pool at the University of California, Irvine, and received course credit for their participation. The older adults were recruited through public advertisements on campus and in the Southern California community. Older adults were compensated for their participation by being entered in a lottery with a chance to win $100.00. To avoid rehearsal of, or reflection on, the event just prior to interviews, the nature of the study was kept hidden until participants arrived for their interview. The study was conducted approximately 9 months after the verdict had been announced.

All participants spoke English as their first language. Whereas approximately half of the younger group was Caucasian (41.1%) and approximately half was Asian American (46.4%), the older group was

almost exclusively Caucasian (91.9%). There were no main effects of ethnicity (Caucasian, Asian American) for the major dependent variables; thus, ethnicity is not included in analyses. The mean health level was rated as "good" (5-point Likert-type scale; poor to excellent, $M = 4.20$, $SD = 0.76$). The groups did not differ on self-reported health (young $M = 4.22$, $SD = 0.68$; old $M = 4.27$, $SD = 0.80$). As is commonly found, older adults' ($M = 30.73$, $SD = 4.93$) WAIS-R scores (Vocabulary; Wechsler, 1981) were significantly higher than younger adults' scores ($M = 22.15, SD = 5.04$), $t(85) = 7.77$, $p < .001$. The scoring of the WAIS-R was completed using standard procedures and two raters reached 83% agreement on a random subsample (16%) of the tests. On average, the older adults had received about one more year of education ($M = 15.88$, $SD = 2.63$) than had the younger group ($M = 14.55, SD = 1.45$), $t(85) = 3.07$, $p < .01$.

Procedure

Individuals were informed that they were participating in a study about how people talk about things that happen in their lives. Participants were interviewed individually and audiotaped by trained female undergraduate experimenters who were unaware of the study hypotheses and read from standard scripts throughout the interviews. Participants' recalled the event in two parts: (a) their personal memory of their own reactions, situation, and surroundings immediately before, during, and after the verdict was announced and (b) events that occurred on television immediately before, during, and just after the verdict was announced. The order in which participants recalled the personal and televised aspects of the verdict announcement was counterbalanced. Only the results pertaining to memory for the personal aspect of the event, and the emotion relevant variables are described here. Participants' narrative memory for the televised portion of the event, including metacognitive and phenomenological memory variables, is reported elsewhere (see Bluck et al., 1999; Bluck & Li, 2001).

Before the interview, participants filled out a background questionnaire. Then they were asked to "please tell me everything you can about where you were and what you were doing, thinking, or feeling just before, during, and just after the verdict was announced. Include anything you want to about that time." Participants repeatedly told the story of their experience with the event until their memory was exhaustively probed. At the end of the interview, participants filled out a questionnaire regarding what they hoped the outcome of the trial would be and their interest in the trial. In addition, participants provided reports using scalar measures of the intensity of their specific emotional reactions upon hearing the verdict announcement. The interview session lasted approximately 1 hr.

Measures

Control Measures

To try and eliminate alternative hypotheses about any potential age group differences in emotion, we needed to examine several other variables for age relations. Event-related variables that might influence one's emotional reaction to the verdict included what participants hoped the verdict would be (guilty, not guilty, did not care), and how involved they had been with the trial in the year leading up to the verdict announcement. There were no differences by age group in what participants had hoped the outcome of the trial would be, $\chi^2(3) = 1.81$, $p > .05$. Sixty-six percent of this sample desired a guilty verdict, 17% desired an acquittal, and 16% reported that they did not care about the outcome. There was, however, an age difference in how involved individuals were in the trial. On a 5-point Likert-type scale, older adults reported greater involvement in the trial leading up to the verdict ($M = 3.45$, $SD = 0.94$) than did younger adults ($M = 2.54, SD = 0.79$), $t(85) = 4.88$, $p < .001$. The analyses were run with and without trial involvement as a covariate.

Scalar Measures of Emotion

Salience of Emotion. Salience of emotion was assessed with a single question about the overall level of emotion currently experienced when remembering the verdict announcement. Participants were asked to report how well they could "feel now what they felt at the time of the verdict." Responses were made on a 5-point Likert scale, ranging from 1 (*not at all*) to 5 (*extremely*).

Frequency of Types of Emotion. Participants reported how sad, angry, happy, and surprised they felt on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). To examine frequency of the occurrence of each type of emotion, a response of "not at all"

was coded as a "no" response (the participant did not feel that particular type of emotion) and any other response on the original scale was coded as a "yes" response (the participant felt that type of emotion to some extent). Thus, we were able to examine how frequently sadness, anger, happiness, and surprise occurred. Scales were also constructed for valence: the positive valence scale was simply the happiness scale, but the negative valence scale was constructed by counting response frequency of those who reported either anger or sadness (or both). Participants were invited to write in other types of emotions if they felt the scales did not represent their feelings well.

Intensity of Emotion. Participants reported how intensely they had felt sadness, anger, happiness, and surprise using Likert-type scales. Initial responses ranging from 1 (*not at all*) to 5 (*extremely*) were recoded so that a score of 0 indicated no intensity (1 = *a little* to 4 = *extremely intense*). In addition to measuring the intensity of discrete emotions (sad, angry, happy, surprise), we used these scales to assess the intensity of positive and negative valence. The intensity scale for positive valence was the original happy intensity scale. The negative valence scale consisted of averaging the sad and angry intensity scales into a single measure.

Narrative Coding of Emotion

Each participant's memory interview was transcribed verbatim. The narrative coding scheme was developed to capture the same categories of emotional content reflected in the scalar measures. Transcribers and coders were not the same people. Coders were blind to the participant's age and other demographic characteristics thus minimizing potential biases regarding knowledge about the participant's age. In the few cases where the participant's age was discernable via the narrative (e.g., "I was late for my class because I watched the verdict."), coder biases were also unlikely, as coders were blind to study hypotheses.

The narratives were first divided into units of meaning or idea units (Kovach, 1995). Idea units comprised phrases that communicate a unique and coherent thought, clearly differentiated from that which precedes and follows it. The units were based on earlier coding schemes designed to reliably capture the primary intent of a group of words or statements (e.g., Baker-Brown et al., 1992). Any information that did not pertain to a participant's memory about the verdict announcement was treated as uncodable. Two coders identified idea units for 20% of the transcripts. Coding decisions were agreed upon 91% of the time. The coefficient of agreement (Cohen's kappa) was .83. When all of the narratives had been divided into idea units, the total number of idea units per narrative was calculated for each participant.

Emotion Units

To identify the idea units that could be coded for frequency and intensity, idea units were coded as either emotional or neutral. Emotion units contained expressions of emotional thoughts, verbalizations, or behaviors. The neutral category included idea units that contained no emotion. Neutral units focused, for example, on description of the narrator's immediate environment, nonemotional behaviors and thoughts, or details of the event from television. A subsample of 20% of the memory transcripts was coded for emotional versus neutral content by two raters. Interrater agreement was 92% with kappa reaching .81.

Frequency of Types of Emotion

Each of the emotion units was coded for the frequency of discrete types of emotion expressed in the unit. Commensurate with the Likert-type scales used for the scalar measures, the discrete emotions included sadness, anger, happiness, and surprise. Inspection of the narratives suggested that fear, anticipation, upset, empathy, relief, and hope were also commonly reported; these were therefore added to the coding scheme. A miscellaneous category was included to capture emotions that did not clearly fall into 1 of the other 10 categories (e.g., general negative emotions with no distinct type, such as "feeling bad"). Only 10% of participants' narratives had miscellaneous emotions that fell outside of the coding scheme. Coders were instructed to concentrate on the emotions being communicated in each unit but to avoid basing decisions solely on the presence of emotion words. For example, units that contained emotion-based behaviors (e.g., "I was crying my eyes out.") were coded for types of emotion (e.g., sadness). When multiple emotions were expressed within a given emotion unit (e.g., "I was so angry, yet so sad."), each type of emotion was coded (e.g., coded as including anger and sadness). Two raters coded 15% of the memory transcripts and reached 88% agreement on type of

emotion expressed with kappa reaching .82. A frequency score for positive and negative emotion, and for each discrete emotion, was calculated for each participant.

Intensity of Emotion

After the frequency of discrete types of emotion was coded, each type of emotion was coded for intensity. This involved using a number of indicators such as physiological reactions (e.g., "I was so nervous my stomach was queasy."), adverbs and phrases that increased or decreased the strength of the emotion expressed (e.g., "The whole affair made me *very* sad"), and repetition of the same type of emotion expressed within a single idea unit (e.g., "I was so *angry* about the verdict, it made me so *mad*."). Coders rated intensity using the same 4-point Likert-type scale (1 = *a little*, 4 = *extremely*) that was used for the scalar measures. Two coders gave intensity ratings to 15% of the memory transcripts and reached interrater agreement of 85%, kappa = .79. For each participant, the mean intensity of emotion was calculated for valence and discrete types of emotion expressed in the narrative.

Self–Other Focus of Emotional Content

The scalar measures of emotion focused solely on the participants' own emotions. The memory narratives revealed, however, that participants were also concerned with other peoples' emotional reactions. Thus, in the narratives, each type of emotion was coded for whether the emotion expressed the participant's own emotions (Self) or concerned the narrator's perception of another person's emotions (Other). Two raters coded 15% of the transcripts and agreed on 98% of the coding decisions. Kappa was calculated at .95. For consistency with the scalar measures, only the self-referencing emotions are included in analyses. Regardless of age group, people were more likely to talk about their own emotions ($M = 29.50$) than another person's emotions ($M = 6.67$), $F(85) = 107.30$, $p < .001$.

RESULTS

The results are organized in four sections. In the first three sections we address age group differences in salience, frequency, and intensity of emotion, respectively. In the final section, information gleaned from the "emotionally rich" narratives about other types of emotion is reported. Within sections, for comparative purposes, findings from the scalar measures and then from the narratives are presented. Narrative data used in comparative analyses include coded variables that are commensurate with the scalar measures. Although there were not enough older men to examine Age × Gender interactions, analyses revealed two gender main effects for two emotion variables (reported below).[3] All analyses were conducted with and without trial involvement as a covariate. Including involvement as a covariate changed the results for three analyses (noted below). In cases where trial involvement changed results, we ran follow-up correlational analyses to further elucidate the relation between age, involvement in the trial, and emotional reactions to the verdict announcement. To reduce the possible number of Type I errors, we interpret our results, using traditional within analyses Bonferroni adjustments.[4] Because of large standard deviations for some variables, medians are also reported to show the extent to which means represent "typical" emotional responses. For the most part, means and medians were similar, and when discrepancies occur they exist for both old and younger adults.[5]

Salience of Emotion

To examine age group differences in salience of emotion using the scalar measures, an Analysis of Variance (ANOVA) was conducted. Older adults reported emotion as more salient ($M = 3.88$, $SD = 1.02$, $Mdn = 4.00$) than did younger adults ($M = 3.41$, $SD = 1.04$, $Mdn = 3.50$), $F(1, 85) = 4.27$, $MSE = 4.55$, $p < .05$. In fact, 67% of the older adult sample was above the younger adults' mean level of salience, whereas 50% of the younger adult sample

[3]Given that the two age groups had different gender distributions, we conducted independent sample *t* tests to examine gender differences within the young adult sample for all of the dependent variables. There were no significant gender differences on any of the dependent variables within the young adult sample, even for those measures with gender main effects. This suggests that our age results are not driven by our different gender distributions.

[4]We also examined results adjusting for the Bonferroni "experiment-wide" error rate ($p = .003$). Even when using this very stringent alpha level, we still had a significant result.

[5]Note that some medians, particularly those for positive affect/happiness, are "0." This indicates that at least half of the sample did not feel that particular type of emotion.

Table I. Observed and Expected Frequencies of Emotion by Young and Old Adults for Scalar Measures

	Valence of emotion		Discrete type of emotion			
Age	Positive	Negative	Sad	Angry	Happy	Surprise
Young	17 (14.8)	47 (46.2)	42 (43.1)	41 (41.3)	17 (14.8)	49 (46.8)
Old	7 (9.2)	28 (28.8)	28 (26.9)	26 (25.7)	7 (9.2)	27 (29.2)

was above their own average. When involved was included as a covariate, and an age group (young and old) Analysis of Covariance (ANCOVA) was conducted, the age group effect for salience of emotion using the scalar measures became nonsignificant, $F(85) = 1.31,\ MSE = 1.37,\ p > .05$. Follow-up correlational analyses revealed that trial involvement is positively correlated with scalar measures of salience, $r = .24,\ p < .05$, but that when controlling for age, this relation is no longer significant, $r = .18,\ p > .05$. This suggests that age is accounting for at least some of the relation between trial involvement and salience. In addition, a one-way ANOVA for gender revealed that women ($M = 3.77,\ SD = 1.03,\ Mdn = 4.00$) reported emotion as more salient than did men ($M = 3.19, SD = 1.00, Mdn = 3.00$), $F(1, 85) = 6.03,\ MSE = 6.29,\ p < .05$.

To standardize across narratives of various lengths, emotion in the narratives is an "emotion count" based on the absolute count of emotion codes, divided by the total number of information units in the protocol. To reflect the emotions represented in the scalar measures, the percent of the emotion units that included sad, angry, happy, and surprise was calculated. Using this measure, ANOVA showed no difference between young ($M = 15.89,\ SD = 10.94,\ Mdn = 15.45$) and older adults ($M = 20.59,\ SD = 14.63, Mdn = 18.18$), $F(1, 85) = 2.65, MSE = 284.16,\ p > .05$. Because theories of emotion seldom include surprise, the salience of emotion was next recalculated as the percent of emotion units that included only positive and negative emotions: sadness, anger, and happiness. Using this measure, ANOVA showed an age group difference between young and old adults, $F(1, 85) = 5.18,\ MSE = 435.98,\ p < .05$. Emotion was more salient in older adults' ($M = 12.05,\ SD = 12.09, Mdn = 9.09$) than younger adults' ($M = 7.43, SD = 6.83, Mdn = 6.61$) narratives. Specifically, 64% of the older adult sample, and only 43% of the younger adult sample, expressed a level of emotional salience in their narratives higher than the younger adults' mean level.

Frequency of Types of Emotion

Valence of Emotion: Frequency

Frequency of types of emotion was first examined in terms of positive and negative valence. Frequencies of emotion by type and age are presented in Table I. Using scalar data, neither positive emotion, $\chi^2(1) = 1.19,\ p > .05$, nor negative emotion, $\chi^2(1) = .27,\ p > .05$, had observed values that differed from expectancies.

The frequency of positive and negative emotion expressed in the participant's narratives was analyzed with an age (young and old) × valence of emotion (negative and positive) repeated measures ANOVA. In keeping with the salience effects, older adults' narratives were more emotional overall than younger adults' narratives, $M = 6.03$ ($SD = 6.05,\ Mdn = 4.54$) and 3.72 ($SD = 3.41,\ Mdn = 3.30$), respectively, $F(1, 85) = 5.18,\ MSE = 217.99,\ p < .001$. As expected, because most participants desired a guilty verdict (but the verdict was an acquittal), there was also a main effect for valence, $F(1, 85) = 23.58,\ MSE = 1303.37,\ p < .001$. Negative emotion ($M = 7.11,\ SD = 9.22,\ Mdn = 4.54$) was expressed more often than positive emotion ($M = 2.17,\ SD = 4.09,\ Mdn = 0.00$) regardless of age.

Of greater relevance to hypotheses, there was also a significant Age × Valence interaction, $F(1, 85) = 4.64,\ MSE = 256.73,\ p < .05$ (see Fig. 1). Both young, paired $t(53) = 2.72,\ p < .01$, and old adults, paired $t(32) = 3.54,\ p = .001$, expressed more negative than positive emotion. The older adults, however, expressed significantly more negative emotion in their memory narratives, $t(85) = 2.43,\ p < .05$, even though there were no age differences in desired verdict. In fact, 52% of the older adults expressed more negative emotion in their narratives than the average younger adult, whereas only 43% of the younger adults were above their own mean level. There were no age differences, $t(85) = 0.83,\ p > .05$ in the amount of positive emotion expressed.

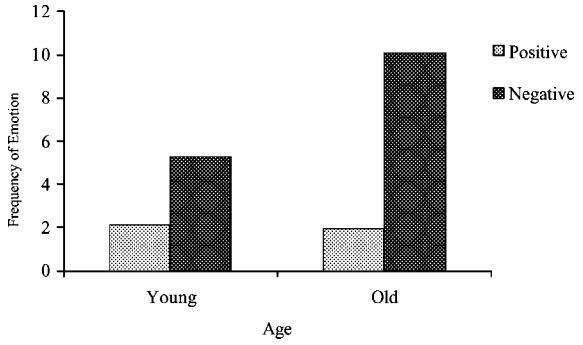

Fig. 1. The frequency of emotion units in the narratives by valence and age.

Discrete Types of Emotion: Frequency

Age differences in four discrete emotions were explored in both the scalar measures and narratives: sadness, anger, happiness, and surprise (see Table I). Regardless of age group, participants reported experiencing sadness, anger, and surprise more frequently than they reported experiencing happiness. The scalar data showed no significant age differences in expected versus observed values for sadness, $\chi^2(1) = 0.42$, anger, $\chi^2(1) = 0.02$, happiness, $\chi^2(1) = 1.19$, or surprise, $\chi^2(1) = 2.24$, $ps > .05$.

To investigate age differences in the four discrete emotions in the narratives, separate Age group ANOVAs were conducted for the frequency of sadness, anger, happiness, and surprise. To reduce the likelihood of a Type I error, the Bonferonni correction was used to ascertain an appropriate alpha level ($p < .01$). There were no age differences in the amount of anger, $F(1, 85) = 0.97$, $p > .01$, happiness, $F(1, 85) = 0.05$, $MSE = 0.79$, $p > .01$, or surprise, $F(1, 85) = 0.002$, $p > .01$. There was a significant age difference for sadness, $F(1, 85) = 8.92$, $MSE = 254.37$, $p < .01$. Older adults expressed more sadness in their narratives than younger adults, $M = 5.29$ ($SD = 7.26$, $Mdn = 3.70$) and $M = 1.76$ ($SD = 3.72$, $Mdn = 0.00$). Where only 17% of the younger adult sample expressed more sadness than their own mean level, 52% of the older adult sample expressed more sadness than the young adult's mean.

Intensity of Emotion

Valence of Emotion: Intensity

An age (young and old) × valence of emotion (positive and negative) repeated measures ANOVA was conducted for the intensity of emotion reported using scalar measures. Cell means and standard deviations are reported in the top portion of Table II. Because of missing data for one participant, the sample size for intensity is 86. There was a main effect for Valence, $F(1, 84) = 41.97$, $MSE = 92.30$, $p < .001$: negative emotion, $M = 1.98$ ($SD = 1.10$, $Mdn = 2.00$), was rated as more intense than positive emotion, $M = 0.57$ ($SD = 1.32$, $Mdn = 0.00$). There was no main effect for age, nor a significant interaction with age, $F(1, 84) = 2.69$, $MSE = 1.89$, $p > .05$ and $F(1, 84) = 3.00$, $MSE = 6.59$, $p > .05$. When including trial involvement as a covariate, an age (young and old) × valence of emotion (positive and negative) ANCOVA revealed no significant effects. That is, the main effect for the intensity of positive and negative emotion is no longer significant when controlling for how involved a person was in the trial, $F(1, 84) = 1.84$, $MSE = 4.09$, $p > .05$.

Table II. Intensity of Positive and Negative Emotion by Age for Scalar and Narrative Measures

	Positive emotion			Negative emotion		
Age	Mean	SD	Median	Mean	SD	Median
Scalar measures						
Young	0.64	1.11	0.00	1.75	1.17	2.00
Old	0.45	1.09	0.00	2.36	1.47	3.00
Narrative						
Young	0.66	1.03	0.00	1.11	1.11	1.00
Old	0.86	1.12	0.00	1.95	1.21	2.25

A similar age (young and old) × valence of emotion (positive and negative) repeated measures ANOVA assessed differences in intensity in the narratives. As with the scalar measures, there was a main effect for Valence, $F(1, 85) = 23.70$, $MSE = 24.032$, $p < .001$: intensity of negative emotion ($M = 1.43$, $SD = 1.21$, $Mdn = 1.80$) was higher than positive emotion ($M = 0.74$, $SD = 1.06$, $Mdn = 0.00$). There was also a main effect of Age, $F(1, 85) = 7.56$, $MSE = 10.89$, $p < .05$. Older adults expressed greater emotional intensity in the narratives ($M = 1.41$, $SD = 0.88$, $Mdn = 1.50$) than did younger adults ($M = 0.89$, $SD = 0.83$, $Mdn = 0.86$). These main effects were qualified by a significant Age × Valence of Emotion interaction, $F(1, 85) = 4.01$, $MSE = 4.07$, $p = .05$ (see Table II). Follow-up tests showed that, for both young and old adults, negative emotion was expressed more intensely in the narratives than positive emotion, paired $t(53) = 2.45$, $p < .05$ for young adults and paired $t(32) = 4.05$, $p < .001$ for older adults. There were no age differences in the intensity

Table III. Intensity of Discrete Emotions in the Scalar and Narrative Measures

	Sadness			Anger			Happiness			Surprise		
Age	Mean	*SD*	Median	Mean	*SD*	Median	Mean	*SD*	Median	Mean	*SD*	Median
Scalar measures												
Young	1.69	1.23	2.00	1.79	1.31	2.00	0.64	1.11	0.00	2.64	1.26	3.00
Old	2.45	1.52	3.00	2.27	1.61	3.00	0.45	1.09	0.00	2.61	1.56	3.00
Narratives												
Young	0.49	0.88	0.00	0.96	1.18	0.00	0.66	1.02	0.00	1.66	1.27	2.00
Old	1.63	1.37	2.00	1.54	1.33	2.00	0.86	1.12	0.00	1.74	1.18	2.00

of positive emotion, $t(85) = 0.85$, $p > .05$. Age differences did exist, however, for the intensity of expressed negative emotion in the narratives, $t(85) = 3.27$, $p < .01$. Older adults expressed negative emotion more intensely than younger adults. This was true for 76% of the older adult sample, whereas only 48% of the younger adult sample expressed negative emotion more intensely than their own mean level. An ANOVA for gender revealed that the intensity of negative emotion expressed by women ($M = 1.62, SD = 1.19, Mdn = 2.00$) was greater than the intensity of negative emotion expressed by men ($M = 1.00, SD = 1.17, Mdn = 0.00$), $F(1, 85) = 5.12$, $MSE = 7.15$, $p < .05$.

When controlling for how involved one was in the trial, age group differences and valence effects found for the narratives became nonsignificant. That is, an age (young and old) $\times$ valence of emotion (positive and negative) repeated measures ANCOVA revealed that there was no main effect of Age, $F(1, 85) = 3.64$, $MSE = 5.21$, no Valence main effect, $F(1, 85) = 0.76$, $MSE = 0.78$, nor any Age $\times$ Valence interaction, $F(1, 85) = 2.35$, $MSE = 2.40$, ps $> .05$. Correlation analyses were run as a follow-up and revealed that trial involvement is related to the overall intensity of negative affect expressed in the narratives, $r = .26$, $p < .01$. When partialing out age, however, this effect disappears, $r = .15$, $p > .05$, suggesting that the relation between the intensity of negative affect and trial involvement is in part related to an individual's age.

Discrete Types of Emotions: Intensity

The intensity of the discrete types of emotion assessed with scalar measures was analyzed with four separate Age group ANOVAs, for sadness, anger, happiness, and surprise ($N = 86$). The alpha level was set at .01. There were no significant age group differences for the intensity of reported happiness, $F(1, 84) = 0.58$, $MSE = 11.637$, anger, $F(1, 84) = 2.30$, $MSE = 4.69$, or surprise, $F(1, 84) = 0.01$, $MSE = 0.03$, ps $> .01$. Older adults, however, reported a greater intensity of sadness than did younger adults, $F(1, 84) = 6.37$, $MSE = 11.64$, $p < .01$ (see Table III). Sixty-seven percent of the older adults and 57% of the younger adult's reported sadness that was greater than the younger adults' mean level of sadness.

Following the above procedure, four separate Age group (young and old) ANOVAs were conducted for intensity of sadness, anger, happiness, and surprise expressed in the narratives (p set to .01). Mirroring the findings from the scalar measures, older adults' sadness was expressed more intensely than younger adults' sadness in the narratives, $F(1, 85) = 22.54$, $MSE = 26.69$, $p < .001$. Specifically, 64% of the older adult sample expressed a higher level of sadness than the younger adults' mean level, whereas only 28% of the younger adult sample was above their own mean. Anger showed a trend in the same direction, but there were no significant age group differences for the intensity of happiness, anger, or surprise, $F(1, 85) = 0.73$, $MSE = 0.82$, $F(1, 85) = 4.36$, $MSE = 6.70$, and $F(1, 85) = 0.07$, $MSE = 0.11$, respectively, ps $> .01$. Including trial involvement as a covariate in an Age group (young and old) ANCOVA for sadness however did not eliminate this age difference, $F(1, 85) = 12.73$, $MSE = 14.91$, $p < .01$. In fact, age differences in sadness remained even when controlling for experiment-wide error rate, $p < .003$, demonstrating the robustness of this age group finding.

Including trial involvement as a covariate did not completely eliminate the age group difference regarding the intensity of sadness in the narratives. To more completely understand the relation between trial involvement and sadness, however, we ran follow-up correlations. Involvement is related to the intensity of sadness ($r = .33$, $p < .05$) in narratives. When age is partialed out, the relation between trial involvement and the intensity of sadness in the narratives is no longer significant, $r = .19$, $p > .05$. Thus, age accounts for some of the relation between trial involvement and the intensity of sadness in the narratives. Involvement, however, does not completely account for age group

Table IV. Summary of Age Effects for Salience, Type, and Intensity of Emotion for Scalar and Narrative Measures

	Type of measure	
Aspect of emotion	Scalar	Narratives
Salience of emotion	Old > young[a]	Old = young (emotions in scalar measures) Old > young (basic emotions only)
Frequency of types of emotion		
Valence of emotion	No age effects	Positive emotion: no age effects Negative emotion: old > young
Discrete types of emotion	No age effects	Sadness: old > young
Intensity of emotion		
Valence of emotion	No age effects	Positive emotion: no age effects Negative emotion: old > young[a]
Discrete types of emotion	Sadness: old > young	Sadness: old > young

[a] Age effect disappeared after controlling for trial involvement.

differences in the intensity of expressed sadness. Age is related to the intensity of sadness ($r = .24$, $p < .05$), even when controlling for trial involvement ($r = .34$, $p < .05$).

A Richer Story: Frequency and Intensity of Other Emotions

Examining the emotional content of the narratives revealed that other emotions besides anger, sadness, happiness, and surprise were expressed in the narratives. These included self-references to: fear, anticipation, empathy, upset, relief, and hope. Interestingly, many of these emotions were also "written in" by participants in the space left for other emotions in the questionnaire. Of the 20 people who reported experiencing "other" emotions, 3 reported feeling fear, 3 reported feeling empathy, 6 reported feeling relief, and 2 reported feeling hopeful. These reports, however, did not provide a way to measure frequency and intensity, as was possible in the richer narrative accounts.

Separate Age group (young and old) ANOVAs were conducted to examine differences in the frequency of fear, anticipation, upset, empathy, relief, and hope expressed in the narratives. The alpha level was set at .008 to avoid inflating the Type I error. There were no significant differences between young and old adults for any of the "other" emotions expressed in the narratives, fear, $F(1, 85) = 0.20$, $MSE = 3.79$; anticipation, $F(1, 85) = 0.08$, $MSE = 1.65$; upset, $F(1, 85) = 1.82$, $MSE = 20.24$; empathy, $F(1, 85) = 0.01$, $MSE = 0.16$; relief, $F(1, 85) = 2.32$, $MSE = 9.00$; and hope, $F(1, 85) = 1.22$, $MSE = 5.50$; ps $> .008$.

Age differences in the intensity of these other emotions were also examined. Separate Age group (young and old) ANOVAs were conducted to examine the intensity of fear, anticipation, upset, empathy, relief, and hope expressed by young and old adults in the narratives (alpha set at .008). There were no age differences in the intensity of fear, $F(1, 85) = 0.17$, $MSE = 0.24$, anticipation, $F(1, 85) = 2.45$, $MSE = 2.94$, upset, $F(1, 85) = 0.01$, $MSE = 0.01$, empathy, $F(1, 85) = 0.93$, $MSE = 1.42$, relief, $F(1, 85) = 1.58$, $MSE = 1.30$, and hope, $F(1, 85) = 6.42$, $MSE = 3.95$, expressed by young and older adults in the narratives, ps $> .008$. In sum, although narratives tell a richer story about the frequency and types of emotion, the story told for young and older adults is the same.

DISCUSSION

We examined age differences in several aspects of emotion (salience, frequency, and intensity) in response to a real-world event. By comparing findings from retrospective scalar measures and autobiographical narratives we found, as expected, that autobiographical narratives sometimes offer convergent validity with scalar measures, but sometimes tell a different story. It appears that the patterns of age differences in emotion may depend on whether or not retrospective measures are employed, the range and valence of the emotion-eliciting stimuli or events, and the aspect of emotion being investigated. The specific findings are summarized in Table IV and further discussed below.

Salience of Emotion

Emotion and aging theory suggests that emotion becomes more salient with age (Carstensen, 1992, 1995; Labouvie-Vief, 1997). Previous findings using scalar measures have been mixed, with evidence for

no age differences in salience of emotion (Cohen & Faulkner, 1988), and contrary to theory, a higher importance placed on emotion in young adulthood (Malatesta & Kalnok, 1984). Narrative measures of emotion, however, have generally supported theory (Carstensen & Turk-Charles, 1994; Hashtroudi et al., 1990; cf., Bluck et al., 1999). In the present study, our results also generally support theory: older adults show greater salience of emotion than younger adults in both scalar and narrative measures. Note, however, that whether an age difference in salience is evident in the narratives depends on how salience is conceptualized.

These findings draw attention to the potential vagueness of the term salience, and suggest that salience of emotion may need to be better conceptualized in future theoretical work, so as to appropriately guide operationalization. That is, although theoretical accounts of emotion and aging propose increased salience of emotion in late life, it is not completely clear what is meant by "salience." Does this refer to salience of only the basic emotions, or to emotion in general (i.e., "emotion blends"; Averill et al., 1994; Labouvie-Vief et al., 1989)? Does salience refer to the *importance* of emotion in everyday life (e.g., Malatesta & Kalnok, 1984), increased *role* of emotion in making everyday decisions (e.g., Blanchard-Fields & Camp, 1990), or tendency to *focus* on emotional information over other types of information (e.g., Carstensen & Turk-Charles, 1994)? Theoretical refinement of the salience construct would help to deepen current theories and further guide research that aims to test existing theories of emotion and aging.

Despite a lack of clarity concerning the construct, however, the current data, using multiple measures of salience, shows convergent findings: scalar measures and autobiographical narratives tell the same story—and one that supports current theory. When we look at a different aspect of emotion (i.e., frequency), scalar measures and narratives no longer tell the same story about age differences in emotion, and support for theory becomes less clear.

Frequency of Types of Emotion

The current event drew a negative response from the majority of our participants as most had hoped for a guilty verdict in the OJ trial, regardless of age. Even though both age groups had the same hopes concerning the outcome of the event, older adults expressed more negative affect than younger adults, particularly sadness, in their autobiographical narratives. This pattern was not observed for the scalar measures.[6] Consistent with our expectations, older and younger adults did not differ in the frequency with which they reported positive affect using scalar measures, or expressed it in their narratives. The data suggest that the two measures tell different stories, with narrative measures being more sensitive to age differences in negative affect. Neither story, however, is consistent with general theoretical claims about how older adults regulate, and thereby experience, less negative emotion in every day life.

Theory suggests that older adults are more likely than younger adults to self-regulate emotion to minimize negative affect and maximize positive affect (Carstensen, 1992; Isaacowitz et al., 2000; Labouvie-Vief, 1997). As has been found in other studies (e.g., Barrick et al., 1989; Lawton, Kleban, & Dean, 1993), we however saw no age differences in positive affect. Of greater interest, and rather more surprisingly, older adults focused more on negative affect, particularly sadness, than did younger adults. Despite the fact that this was a negative event for most of the sample, we still expected to support the theoretical view that older adults optimize their emotional experience through down-regulating negative emotion. Older adults did not, however, express less negative affect than younger adults, even when recalling the event 9 months after it had initially occurred (i.e., ample time for regulating one's emotion).

We make no claim that older adults do not down-regulate negative emotion in everyday life, particularly in response to the ups and downs of daily living. We believe, however, that by examining a real-world event to which reactions were largely negative, our study provides a stringent test of theory. Examining this event, or others like it, tests the limits of current theories of emotion and aging. Do emotion effects found in the laboratory, or in response to daily activities or hassles, also apply to real-world events that elicit more intense negative reactions? That is, older adults may be able to down-regulate negative emotion for more neutral everyday life events, but not maintain a lower level of negative affect than younger adults when faced with an event that they care about,

[6]The different results found for scalar measures and narratives are related to what one is able to measure using these different techniques. That is, the scales measure the frequency of people (young and old) who reported experiencing different types of emotion, whereas the narratives provided information about the frequency with which young and older individuals expressed different types of emotions in each of their narratives.

and that does not turn out the way they hoped it would.

The contrasting of everyday emotional functioning with emotion in response to negative events may prove important to future theory development. Theory could be deepened by specifying the temporal range (i.e., general timeframes to specific events) and valence level (extremity of positive and negative) of emotion-eliciting stimuli or events to which theoretical principles are expected to apply. The current study is one of the firsts to examine affective valence in the face of a specific negative autobiographical event (see also Carstensen, Gottman, & Levenson, 1995; Knight, Gatz, Heller, & Bengtson, 2000; Levine & Bluck, 1997). Further work, examining both negative and positive events, is clearly needed to replicate and extend the current finding. In fact, an ideal event to use in future work might be one where some old and young adults have positive reactions, and other old and young adults have negative reactions (e.g., a political election; Levine & Bluck, 2004).

Intensity of Emotion

As with frequency of emotion we found that older adults expressed greater negative affective intensity than younger adults in their narratives. This was particularly true for sadness, and was evident in both measures. Although theory suggests that older adults should down-regulate emotion to minimize negative affective intensity (e.g., Levenson, 2000), our data suggests that when faced with a specific, primarily negative event, older adults do not minimize negative emotion. Does this suggest that there is a point at which, faced with negative emotional load, usual self-regulatory processes of older adults fail? Not necessarily. Examining emotion about a specific, mostly negative event (for this sample), suggests that self-regulation may be more complex than a simple minimization of negative affective intensity with age (e.g., affective complexity; Labouvie-Vief et al., 1989).

The complexity of self-regulating emotion in response to a specific event, at any age, is influenced by an individual's goals and beliefs regarding the event (Stein & Levine, 1990). That is, people experience negative emotions when they appraise events as hindering goals (e.g., Frijda, 1987; Oatley & Johnson-Laird, 1987), and negative emotion serves to evoke strategies for coping with such goal failures. As an example, sadness is typically evoked when a loss is viewed as irrevocable and the individual must give up the goal and substitute it with a new, more achievable, one (e.g., Levine, 1996; Smith & Lazarus, 1993; Stein & Levine, 1990). In the current study, the verdict was an irrevocable goal failure for those who had hoped for a guilty verdict. Consequently, intense sadness was a common emotional response across the sample. Older adults, however, expressed sadness even more intensely than younger adults did. How might we interpret this age difference?

One accommodative coping strategy (Brandstadter & Greve, 1994) for managing negative affect is to remember past emotions as less intense than they actually were (Levine, 1997; Stein & Levine, 1990). This method of down-regulation of negative emotion in the face of disappointing real-world events has been shown in older adults (Levine & Bluck, 1997). Though down-regulating emotions in order to maintain positive affect by definition promotes well-being, it did not occur in this case. Thus, we turned our attention to the potential functional role that negative emotion might play. That is, negative emotions, though they may not "feel good," can be seen as functional in directing adaptive goal pursuit, goal adjustment, and goal abandonment (Oatley & Johnson-Laird, 1987). Thus, down-regulating negative emotion is certainly helpful in creating well-being, but needs to occur in a manner consistent with an individual's goals and beliefs (Levine & Bluck, 2004).

Unfortunately, we did not fully investigate the influence of individuals' goals (beyond their desired verdict outcome) on emotion in the current study. We do however have anecdotal evidence from the narratives suggesting that the magnitude of the goal loss, hence negative affect, may have been different for older and younger adults. Post hoc examination of participants' narratives suggests that some older adults viewed the acquittal of OJ Simpson as not just a personal goal loss, but also a societal one that had consequences for the American justice system. Although we cannot say for certain whether this is the case, we do have results showing that this event may have been more important for older adults: we found that older adults were more involved in the (year-long) trial leading up to the verdict announcement than younger adults. How involved a person was partially accounted for some of our age group differences: specifically the intensity of negative affect in participant's narratives. In this way, our study provides a glimpse at the role of nonemotion variables (e.g., involvement with the event) when examining emotional reactions to real-world events.

Future work examining age differences in emotion in real-world contexts could benefit by following models in the general emotion literature (Stein & Levine, 1990) that examine goals, beliefs, and motivations leading up to and surrounding emotion-eliciting events for adults of different ages.

At first glance, it seems then that our age group differences for the intensity of negative affect might well be a cohort effect regarding trial involvement. That is, older adults in this study, who grew up in the post World War II era, may be more idealistic about the justice system than individuals from later cohorts, and thus more involved in a trial with social consequences, such as this one. An equally plausible age explanation also holds though. With age, individuals become less focused on personal goals and disappointments, and more focused on larger societal issues (e.g., Erikson, 1980); thus, older participants were more involved in the trial and its outcome than younger adults. There is no way to know from our cross-sectional study whether age group differences in the intensity of negative affect (or in trial involvement) are cohort or age related. Longitudinal work, including life-span samples (e.g., middle-aged adults), and measures of goals and motivations, would be needed to fully explore these competing explanations. Trial involvement however did not eliminate all of our age group differences (e.g., frequency and intensity of sadness in the narratives), and it did not affect results equally across measures.

This points to the main argument in this paper: regardless of whether the findings regarding higher negative affective intensity in older adults are age or cohort related, the way that emotion is measured seems to matter. That is, higher intensity of negative affect among older adults was found only in the narratives, but not for the scalar measures. Thus, there is something about telling a narrative that is sensitive to emotion differences between two age groups that is not evident when using more traditional measures. Note that age group differences also occurred for the frequency of negative emotion in narratives, but not for the scalar measures. One speculation is that expressing emotion via autobiographical narratives allows older adults to relive the emotional experience, providing contextual support for their emotion memory. Thus, the nature of autobiographical narratives leads to a lower memory load for older adults than more traditional scalar measures. This is only a speculation; one that definitely warrants further investigation. In addition to measurement sensitivity, the narrative measure also leads to robust findings: age differences in the intensity of expressed sadness in the narratives were present even when controlling for trial involvement, and even when using a stringent alpha level. Thus, the narratives provide clear evidence of age group differences in emotional experience that go beyond level of involvement with the event.

THE END OF THE STORY?

Much of our emotional experience in everyday life is related to remembered events and experiences. Although not acknowledged as such, studies of emotion and aging typically use retrospective measures of emotion, particularly retrospective scalar measures. We do not see the retrospective nature of these measures as troubling. Rather, we suggest that using measures that embrace memory for emotion as it is experienced in everyday life is a method that has yet to be fully tapped by emotion and aging researchers. Thus, in the current study we set out to determine if using an ecologically valid retrospective measure of emotion, that is, a story that would be shared in everyday life, is an informative methodological tool for assessing remembered emotion in young and older adults. How convergent are such autobiographical narratives with traditional scalar measures?

We were pleased to see that the two types of measures showed convergence on some aspects of emotion, such as the overall salience of emotion and the intensity of sadness reported and expressed by older and younger adults. Thus, age group differences in these aspects of emotion were strong enough to be tapped by both methods. It may be the case, however, that the level of convergence between measures was enhanced because participants reported their emotions on the scalar measures after producing narratives about their emotional experience. It is yet to be explored whether scalar measures given before or without narrative reinstatement of the event will show similar convergence. Even in the face of a potential bias toward finding convergence, however, we also found that the two measures told different stories. When examining the frequency of emotion reported in scalar measures there were no age differences. In narratives, however, older adults more often expressed negative affect than younger adults. These mean group differences seem to represent "typical" older adult emotional responding to this event (evident by medians and percentages). In addition, the open-ended narratives allowed the participant to define and discuss not only the basic emotions (e.g., sadness and anger), but

also any emotions that were relevant to them (e.g., regret and empathy). The narratives also showed that when talking about emotional events, individuals often focus on their own reactions, but also weave other people's reactions into their accounts in order to tell a complete story. Thus, narratives may be useful tools to stimulate new research in areas such as social process that might be ignored in studies in which responses are experimenter-guided.

The study also aimed to test the limits of emotion and aging theories by extending the range of emotion-eliciting stimuli to specific, negatively viewed, events that occur in the context of individuals' everyday goals and beliefs. Although some of our results coincide with theory (i.e., increased salience of emotion in older age groups, and no age differences in positive affect), our results were contrary to theoretical expectations of down-regulation of negative affect with age. We propose that this seeming contradiction of theory may in fact reflect that theories of emotion and aging have yet to embrace the range of everyday emotional stimuli that individuals experience. That is, when faced with a negative event, as was the OJ Simpson verdict announcement for most of our sample, theoretical predictions may need refinement. Thus, the way that we have examined emotion, that is, in response to a specific, primarily negative event, has not been seriously considered in theoretical accounts of emotion and aging, and offers an avenue for further development of current theories. Examining age differences in emotional reactions to specific negative (and positive) events is a promising direction for future research; a direction that has the potential to broaden the scope of theories of emotion and aging by extending theoretical principles to ecological contexts in which individuals goals and beliefs play a role in emotional experience. In short, this is not the end of the story.

ACKNOWLEDGMENTS

The first two authors made equal contributions to this paper. This research was supported by a Social Sciences and Humanities Research Council of Canada award to the second author. We thank Jacqueline Baron and Sarah Burrell for content coding of the memory narratives.

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