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USING THE PAST TO ENHANCE THE PRESENT: BOOSTING HAPPINESS THROUGH POSITIVE REMINISCENCE

ABSTRACT. Two studies explored relations between positive reminiscing and emotional experience – a survey of naturally occurring reminiscence (Study 1) and a field experiment testing the affective consequences of two styles of reminiscing (Study 2). In *Study 1*, frequency of positive reminiscing predicted perceived ability to enjoy life, and students who reminisced using cognitive imagery reported a greater ability to savor positive events than those who reminisced using memorabilia. In *Study 2*, students were randomly assigned either to reminisce about pleasant memories using cognitive imagery, reminisce about pleasant memories using memorabilia, or think about current concerns (control condition) for 10 min twice daily for a week. Both reminiscence groups reported greater increases in the percent of time they felt happy over the past week than the control group; and happiness increased more in the cognitive imagery group than in the memorabilia group.

KEY WORDS: cognitive imagery, happiness, memorabilia, positive affect, reminiscence

INTRODUCTION

> For he lives twice who can at once employ
> The present well, and ev'n the past enjoy.
>
> — Alexander Pope (1730)

Although the relationship between reminiscence and subjective adjustment has been studied extensively among older adults (for reviews of this work, see Merriam, 1980; Molinari and Reichlin, 1985; Thornton and Brotchie, 1987), relatively little research has examined the functions of reminiscence in the everyday lives of younger people. Despite evidence that reviewing one's life retrospectively promotes well-being among older adults (Butler, 1963; Coleman, 1974; Fallot, 1980), it is unclear whether reminiscence serves a comparable function for younger adults, or

whether indeed they engage in reminiscence in the same ways. Accordingly, in this research we first used a cross-sectional survey to explore how, when, and why young people reminisce about pleasant memories (Study 1). We then conducted an experiment to examine the impact of different styles of reminiscence on positive affect (Study 2). Below we first consider conceptual distinctions among different types of reminiscence and their functions, and then briefly review prior research conducted using both elder and non-elder samples, as a foundation for the present research.

The Functions of Positive Reminiscence

Previous theorists have regarded reminiscence as having many possible functions for older adults. For example, some writers have suggested that reminiscence helps establish and maintain personal identity (Erikson, 1963), either by affirming oneself through a sense of temporal continuity (Fallot, 1980) or by making oneself and one's past seem unique (Revere and Tobin, 1980). Other theorists have argued that reminiscence serves predominantly as a source of positive experience for the elderly, either by bolstering self-esteem (Lewis, 1971; McMahon and Rhudick, 1967) or by generating pleasure and enjoyment for its own sake (Hughston and Merriam, 1982; Thornton and Brotchie, 1987). A third function that reminiscence may serve is as a mechanism for coping with negative experience. For example, some writers (Fink, 1957; Havighurst, 1959) have suggested that reminiscence can be either an unhealthy sign of deteriorating interest in the external world or an ineffective attempt to cope with present stress by escaping into the past. Other theorists, in contrast, consider reminiscence to be an adaptive coping response in older adults that provides comfort (Butler, 1963; Revere and Tobin, 1980), reduces negative affect (Butler and Lewis, 1982; Fallot, 1980), and helps resolve problems and conflicts (Coleman, 1974; Lieberman and Falk, 1971). Finally, reminiscence can be used as a means to an end of obtaining closure on difficult events in one's life, as seen in O'Leary and Nieuwstraten's (2001) development of Gestalt reminiscence therapy. In this context, reminiscence in a therapeutic milieu can help foster a sense of closure in relation to painful unresolved events before one's life ends.

Reminiscence in Younger Adults – Broadening Construct Validity

While there is certainly a paucity of research on reminiscence in non-elder adults, recent research suggests a trend toward a more developmental approach to the study of reminiscence, including work with younger adults and even young infants (e.g., Fivush and Reese, 2002; Webster, 2002). Thus, while traditionally reminiscence has been conceptualized as a gerontological phenomenon, recent research is moving to expand its construct validity across the lifespan.

The work of Haberman and Paha (2000), for example, represents an interesting consideration of the use of memorabilia (or "souvenirs") to aid reminiscence and promote adjustment in college students' transition to university life. A substantial proportion of their sample reported using personal objects to remind them of people (12.1%) and the past (7.7%), and to elicit feelings of "fun and enjoyment" (12.5%). These findings not only support the existence of reminiscence in younger adults, but also add to the evidence suggesting that external aids may serve as an enhancement strategy for reminiscing. Haberman and Paha's (2000) work also expands on previous research emphasizing the importance of reminiscence in transitional periods or transitional crises (e.g., Hormuth, 1990; Webster and Haight, 1995; Parker, 1999). Although younger and older adults obviously face different life transitions, adjustment remains a relevant construct across the lifespan.

More recent research by Pasupathi and Carstensen (2003) actually included a sample incorporating both younger and older adults, to investigate the nuances of mutual or social reminiscence (i.e., engaging in reminiscence with another person). Results revealed that social reminiscing was an effective emotion regulation strategy in enhancing positive emotions, which occurred equally often among younger and older adults. However, the general experience of positive emotion in response to reminiscing about positive events appeared to increase with age. Additionally, when the authors examined mutual reminiscence about negative events (as well as positive ones), the age-related differences diminished. These results suggest that older adults are more capable of extracting powerful positive

feelings from mutual reminiscence than younger adults, but mainly in regards to positive rather than negative events.

The Current Study

One purpose of our first study was to extend the generalizability of past work on reminiscence among older adults by (a) assessing whether reminiscence serves the same functions for younger adults and (b) determining whether these functions are positively or negatively associated with the perceived ability to enjoy life.[1] Because college students are more readily accessible than the elderly as a research population, not surprisingly a large portion of the existing literature on emotional adjustment has focused on young adults. Yet we know relatively little about the role that reminiscence plays in their lives.

Previous research in older adults (Havighurst and Glasser, 1972) has found that those who spend more time reminiscing report greater positive affect than those who spend less time reminiscing. Assuming reminiscence serves an adaptive function, it was expected that frequency of reminiscence would likewise be positively related to young people's positive affective experience. Furthermore, based on earlier speculation (Butler, 1963; Havighurst, 1959), it seemed likely that individuals who used reminiscence either to gain self-insight or solve ongoing problems would report a greater capacity to enjoy life than would those who used reminiscence simply to try to escape from present difficulties.

Study 1 was also designed to address the question of whether certain styles of reminiscence are more effective than others in promoting positive emotional experience (cf. Thornton and Brotchie, 1987). In studying different forms of retrospection, previous researchers have distinguished between individual vs. group (Butler and Lewis, 1982; Perotta and Meacham, 1981), silent vs. oral (Havighurst and Glasser, 1972), cognitive/intrapersonal vs. conversational/interpersonal (Romaniuk and Romaniuk, 1981), and purposive vs. spontaneous (Havighurst and Glasser, 1972) reminiscence. Although these distinctions have been suggested as different forms that reminiscence may take, virtually no empirical work has examined the particular strategies individuals use to intensify their recall of the past in the course of their everyday

lives and whether or not such strategies differentially promote positive affect.

There are, however, several clues in the literature regarding cognitive and behavioral techniques people might use to intensify reminiscence. For example, some clinicians (Butler and Lewis, 1982; Lewis and Butler, 1974) have assumed reminiscence is adaptive and have therefore designed clinical interventions aimed at teaching older adults to stimulate the process of reminiscence, either by reviewing photographs, scrapbooks, and other memorabilia or by making pilgrimages back to important places from their past. Related anecdotal evidence (Sherman and Newman, 1977) suggests that institutionalized older adults often rely on cherished possessions to remind themselves of pleasant memories. Additionally, Kelly and Mosher-Ashley (2002) found that combining journal writing with reminiscence enhanced well-being in older adults, in addition to enhancing the experience of reminiscence itself. Clearly, people who use some specific strategy to stimulate or intensify recall of the past may be better able to reminisce in a vivid, engaging way than people who lack specific strategies for intensifying recall.

Related experimental research (Strack et al., 1985) indicates that thinking about past events is most likely to elicit affect when one tries to reexperience these events as vividly and with as much detail as possible. Thus, using a specific strategy to vividly recreate the details of pleasant memories may enable people to obtain more affective benefits from reminiscence than simply reminiscing without using such strategies. Theoretical work in the field of guided imagery (Finke, 1985) further suggests that strategies for stimulating reminiscence primarily based on cognitive (mental) imagery will generally be more effective than externally based (physical) imagery in generating affective and physiological states. If this difference is so, then individuals who rely on some form of cognitive strategy to reminisce (e.g., trying to re-create the details of a pleasant memory in one's mind) should report stronger affective consequences than those who rely mainly on external aids to reminisce (e.g., trying to re-enact a pleasant memory by putting oneself in similar surroundings or by looking at memorabilia). Our research was designed to test this reasoning using both correlational (Study 1) and experimental (Study 2) methods.

A final objective of Study 1 was to explore possible differences between men and women in the frequency, purpose, content, and style of reminiscence. Unfortunately, little work has focused directly on the issue of sex differences in reminiscence variables (cf. Thornton and Brotchie, 1987). Nevertheless, some intriguing hints in the literature suggest men and women may reminisce at different times, for different reasons, and about different things. For example, in one of the few studies examining reminiscence across a wide range of ages, Merriam and Cross (1982) found that women, relative to men, reminisced more frequently, reminisced about interpersonal relationships from childhood more often, and were more likely to use reminiscence to understand themselves better. Other work on the dimensions of inner experience (Huba, Aneshensel, and Singer, 1981) indicates women have a greater tendency than men to engage in "positive-constructive" daydreams, which they use to help them solve problems and gain new perspectives on present situations. In addition, research with older populations (Hughston and Merriam, 1982) has found that women report more enjoyment from reminiscence than men do. Finally, research with young adults has revealed that women use objects more for enhancing reminiscence and less instrumentally than men, and women and men differ in the actual choice of personal objects used. This contrast is believed to be at least partially explainable by differences in interpersonal orientation across gender, with women typically scoring higher on this dimension (Habermas and Paha, 2000). Considered together, this evidence suggests that women reminisce more often than do men and are more likely to reminisce in ways that provide positive affect and constructive insights in their present lives.

STUDY 1

Hypotheses

1. Paralleling research with older populations, we hypothesized that positive reminiscence would primarily serve an adaptive function for college-aged adults, by helping them gain self-insight, solve problems, and generate positive affect.

2. Based on this adaptive function, we hypothesized that the more time young adults spent reminiscing about positive memories, the more capable they would feel of savoring their lives.
3. Based on earlier theoretical speculation (Butler, 1963; Havighurst, 1959), we hypothesized that people who reminisced primarily to gain self-insight would feel more capable of savoring their lives, compared to people who reminisced primarily to escape from the present.
4. Based on the notion that reminiscing serves primarily an adaptive function, we hypothesized that having a personal strategy for intensifying recall would be associated with a greater perceived capacity to savor positive outcomes, relative to having no particular strategy to intensify recall.
5. Based on work in the field of guided imagery (Finke, 1985), we hypothesized that relying primarily on mental imagery to intensify recall would be associated with a greater perceived savoring capacity than relying primarily on behavioral strategies to intensify recall.
6. Based on past theory and research, we hypothesized that women, relative to men, would report spending more time reminiscing about positive memories and having a greater capacity to savor positive experience, would be more likely to use reminiscence constructively to gain self-insight, and would be less likely to use reminiscence to escape from the present.

METHOD

Participants

The sample consisted of 180 students (74 males, 106 females) from two midwestern universities, who participated to partially fulfill an introductory psychology course requirement. Mean age was 19.48 (SD = 2.12) years, with no significant sex difference or sample difference in age. Because the samples did not differ significantly across dependent measures, the data from both colleges were pooled for analysis. Exact sample sizes varied across items due to incomplete or non-codeable data for some respondents.

Procedure

Groups of 10–15 students completed an anonymous questionnaire containing the dependent measures. Five closed-ended items were used to assess positive affective experience and one's perceived ability to enjoy life. These self-report items were taken from Bryant (1989) and included the frequency of feeling overjoyed (never, rarely, sometimes, often) and feeling on top of the world (never, once in a while, sometimes, many times), the intensity of pleasure obtained from good things (none at all, a little bit, some, a lot, a great deal), the duration of positive feelings in response to good events (1 = not for very long, 7 = for a very long time), and the overall capacity to enjoy good things (not at all, a little bit, some, a lot, a great deal).These items were standardized and averaged to create an index of perceived ability to savor positive experiences (see Bryant, 1989). Reliability analysis indicated that this composite index had acceptable internal consistency (Cronbach's alpha = 0.81).

Additional items were designed to measure variables pertaining to reminiscence. A 7-point scale (1 = very little, 7 = a great deal) was used to measure how much time one typically spent reminiscing about pleasant memories (see Havighurst and Glasser, 1972). Six open-ended items were designed to elicit spontaneous, unguided responses about how, when, and why people reminisce about pleasant memories, as well as the content of reminiscence.[2] Responses were coded by two independent analysts using a coding scheme developed by Bryant et al. (1991). Rates of agreement for open-ended codes ranged from 90 to 100%, with a median agreement rate of 94%. [3]Disagreements were resolved through discussion to achieve consensus.

RESULTS AND DISCUSSION

Characteristics of Self-Reported Reminiscence

Initial analyses examined content, antecedents, consequences, and styles of positive reminiscence.

Content

The theme most commonly reported (50%) as a source of positive reminiscence was personal relationships (i.e., with family, friends, or romantic partners). Thus, young people seem to reminisce most often about relationships with other people, rather than about objects, places, or events. Furthermore, nearly four times as many people (62% vs. 16%) reported reminiscing about relatively recent experiences (i.e., within the past 5 years) as reported reminiscing about experiences that happened longer ago, $\chi^2(2, n = 180) = 68.43, p < 0.0001$.

Antecedents

Respondents most often mentioned three types of antecedents as typical situations in which they reminisced about pleasant memories: (1) when alone (20%); (2) when feeling down (17%); and (3) when both alone and feeling down (19%).[4] Thus, over three times as many respondents (36% vs. 10%) typically reminisce when they are experiencing *negative* affect (i.e., feeling sad or feeling sad and alone) as when they are experiencing *positive* affect (i.e., having fun with family or friends). These findings suggest that, for the college sample, positive reminiscence serves primarily as a coping strategy for reducing or eliminating subjective distress.

Consequences

Consistent with this interpretation, the primary consequences of positive reminiscence most often mentioned were: (1) new perspective and self-insight toward present problems (29%); (2) positive affect (19%); and (3) escape from the present (18%). Only three respondents (2%) reported that reminiscence did nothing for them.

Styles

When asked if they consciously did or thought anything to help them *store* pleasant memories for later recall, 8 out of 10 people (80%) said "yes." Of these respondents, about half (45%) reported that they consciously tried to store the memory *during* the actual pleasant experience; and about half (49%) reported that they consciously tried to store the memory *after* the actual

experience. Of those who reported consciously using a specific strategy to store memories, about half (55%) said that they made conscious *behavioral* efforts to preserve the moment by sharing it with others, by taking photographs, or by collecting memorabilia; and about half (45%) said that they made conscious *cognitive* attempts to acknowledge, highlight, and capture the essential details of pleasant experiences for later reminiscence.

When asked if they consciously did or thought anything to help them intensify their *recall* of pleasant memories, 7 out of 10 people (71%) responded "yes." Of these respondents, about two-thirds (61%) mentioned that they primarily used *behavioral* strategies to intensify recall, including: (a) looking at memorabilia (23%); (b) sharing memories with others (14%); (c) playing music associated with the memory (audio memorabilia) (13%); and (d) reenacting the pleasant memory (13%). About one-third (39%) of respondents, in contrast, mentioned that they primarily used *cognitive* imagery to intensify their recall of pleasant memories.

Reminiscence and Positive Affective Experience

Consistent with research using elderly samples (Havighurst and Glasser, 1972), the more time that college students reported reminiscing about pleasant memories, the more they felt able to enjoy their lives, $r(137) = 0.27$, $n = 139$, $p < 0.001$. As predicted, those who used reminiscence primarily to gain perspective or self-insight reported a greater capacity to savor positive outcomes than did those who used reminiscence primarily to escape from the present, $t(60) = 1.68$, $p < 0.05$.In addition, the more sensory stimuli that participants mentioned as triggers of intense spontaneous reminiscence, the more they felt able to enjoy their lives, $r(135) = 0.20$, $p < 0.05$.

Our results suggest that the adaptive value of reminiscence is not so much as a form of escape from present problems, but rather as a constructive tool for increasing awareness and providing a sense of perspective in the present. As a male respondent, who reminisced primarily for escape, stated:

> I reminisce when I'm bored or really stressed-out. I think about when I was a kid and had no problems or worries...This helps me stop worrying

> for awhile, but then I've always got to come back to the here and now. And when I do, I feel worse. I end up asking myself why it has to be like this, why it can't be like it was when I was a kid, and I get angry and depressed.

A female respondent, who reminisced primarily to gain perspective and self-insight, on the other hand, commented:

> Thinking of good times from the past makes me feel better about the present. It helps me appreciate things more. It gives me an idea of where I was then, where I am now, and where I ultimately want to be. It helps me understand the present and deal with it...These memories also give me a sense of confidence kind of a "you did it before, you can do it again" type of thing. If things are bad, I use my memories to start thinking of ways to make it better rather than thinking about how bad it is.

Whereas reminiscing about pleasant memories to escape present problems may be maladaptive because it makes one's current situation seem even worse in contrast to the more pleasant past; reminiscing to gain motivation, perspective, or self-insight may be more adaptive because it provides something constructive that one can bring back to the present to help solve ongoing problems.

With respect to styles of reminiscence, there were no significant differences in beliefs about savoring ability associated with the particular type of strategy one used to *store* positive memories, $F(5,147) < 1$, *ns*. As predicted, however, people who consciously used some particular technique to intensify their *recall* of positive memories felt better able to savor positive outcomes than did those who lacked specific recall-intensification strategies, $F(1,136) = 4.44$, $p < 0.01$. Further confirming predictions, people who relied primarily on cognitive strategies (such as mental imagery) to intensify their recall tended to report a greater savoring capacity than did those who relied primarily on behavioral strategies (such as looking at memorabilia), $F(1,137) = 3.27$, $p < 0.10$. Perceived savoring ability was unrelated to the reported antecedents and content of reminiscence, Fs < 1, *ns*.

Using a concrete strategy to intensify memory recall may actually promote personal beliefs in savoring ability by helping people re-create pleasant memories in ways that are more vivid

and involving (cf. Strack et al., 1985). Moreover, using cognitive imagery to intensify recall is associated with greater reported savoring capacity, compared to using behavioral re-enactment or memorabilia to intensify recall. These results suggest that mental imagery is more effective than external cues in promoting vivid recall of pleasant memories.

One explanation for this result is that externally based aids to reminiscence tend to restrict one solely to details of the past event that are represented by the particular external object (memorabilia) or environmental situation (behavioral re-enactment), making one less likely to recall other details, such as thoughts and feelings, that are not represented externally. Cognitive imagery, on the other hand, may allow one more freedom to actively embellish memory and to recall a wider range of details about the past event through free-association or active fantasy. Alternatively, relying on memorabilia to reminisce requires one to have the physical object at hand, unlike relying on cognitive imagery, which is always present. There have even been some intriguing suggestions in the literature (cf. Finke, 1985) that imagining an object or situation can activate the same perceptual mechanisms used in perceiving the object or situation. Thus, it is conceivable that using cognitive imagery to stimulate reminiscence may actually create a more vivid mental experience, which may in turn produce greater perceptual or emotional "after-effects."

Sex Differences

Replicating research on perceived control and subjective well-being (Bryant, 1989, 2003), women reported a greater capacity to savor positive outcomes than did men, $F(1,137) = 16.04$, $p < 0.0001$. Further confirming earlier findings (Merriam and Cross, 1982), women also reported spending more time reminiscing than did men, $F(1,139) = 6.40$, $p < 0.05$; and a greater proportion of women (16%) reported reminiscing about memories of childhood relationships than did men (0%), Fisher's exact $p = 0.002$. This latter finding is consistent with prior research on sex differences in early memories (Adcock and Ross, 1983).

TABLE I
The reported primary function of purposeful positive reminiscence for males ($n = 38$) and females ($n = 59$)

Functions of positive reminiscence	Males		Females	
	n	%	*n*	%
To generate positive affect	14	36.8	11	18.6
To escape the present	14	36.8	10	16.9
To gain perspective and self-insight	6	15.8	32	54.2
To experience "bittersweet" feelings	4	10.5	6	10.2

Note. The above responses are from a subset of 53.8% of the total sample of respondents who reported that they purposefully reminisced about positive memories for a specific reason. Analysis revealed that the primary function of purpose reminiscence varied for males and females, Fisher's exact $p = 0.0009$, Cramer's $v = 0.40$.

There were also differences in the primary function that purposeful positive reminiscence served for men and women, Fisher's exact $p = 0.0009$. As seen in Table I, women were three times more likely than men to gain perspective and self-insight from reminiscence (54% vs. 16%), whereas men were twice as likely as women to use reminiscence to escape from the present (37% vs. 17%). Women also reported more stimuli (particularly smells) that triggered spontaneous reminiscence than did men, $F(1,130) = 4.68$, $p < 005$.

An important limitation of Study 1 concerns its internal validity (Cook and Campbell, 1979), or the degree of confidence we can have in using results to draw inferences about cause and effect. In particular, the cross-sectional design of Study 1 provided correlational data that are inherently incapable of establishing cause-and-effect relationships. Although we have tentatively argued that reminiscence about pleasant memories can make one feel better able to enjoy life, it is also the case that feeling able to enjoy life may promote reminiscence about pleasant memories (cf. Blaney, 1986; Bower, 1981). In addition, it may be that feeling better able to enjoy life makes one more skilled at using cognitive imagery to stimulate and intensify reminiscence, rather than vice versa. A randomized true experiment is necessary, in order to demonstrate cause and effect more unequivocally.

STUDY 2

Study 2 was designed to address these limitations and to test hypotheses about the causal effects of reminiscing on positive emotional experience. To overcome problems in drawing causal inferences, we conducted a field experiment in which participants were randomly assigned to engage in reminiscence sessions twice daily over the course of 1 week using either cognitive imagery or memorabilia to stimulate recall of positive memories. A control group spent a comparable amount of time thinking about current concerns in their everyday lives. At both a pretest and posttest, respondents completed dependent measures assessing the percentage of time they had felt happy during the past week. Based on prior theory and research and on the results of Study 1, we hypothesized that: (a) reminiscing about positive memories using either cognitive imagery or memorabilia would increase the reported frequency of happiness relative to the control condition; and (b) reminiscing about positive memories using cognitive imagery would produce a greater increase in the reported frequency of happiness, compared to reminiscing about positive memories using memorabilia.

METHOD

Participants

Participants were 65 students at a private midwestern university who were enrolled in one of three intermediate-level undergraduate psychology classes and volunteered to participate for extra credit. There were 24 males (37%) and 41 females (63%). Mean age was 19.98 (SD = 3.30). Sample sizes were 22 in the cognitive imagery condition, 21 in the memorabilia condition, and 22 in the control condition, with equivalent proportions of males and females in each condition.

Procedure

Participants were told the research was intended to investigate how people think about their lives while located in personally familiar surroundings. They were asked to set aside 10 minutes

twice a day for 1 week (starting the following day), during which they were to sit quietly alone in their place of residence and think about their life, following a set of written instructions. After each ''thinking session,'' they completed an open-ended form describing the session and then answered some closed-ended questions about the experience. After the week of 14 ''thinking sessions,'' participants completed a posttest questionnaire and returned their experimental materials to a collection box outside the experimenter's office.

Pretest

In an initial experimental session within each classroom, participants first provided information about gender and age and then answered a question assessing the frequency of their happy, unhappy, and neutral feelings during the past week (Fordyce, 1987). Respondents were instructed to estimate the percent of time they had felt happy, unhappy, and neutral over the course of the preceding week, by providing a number between 0 and 100 for each feeling, with the total of percentages required to sum to 100%. To link responses within individuals over time, each respondent received a unique identification number printed at the top of the pretest form.

Participants were then given a booklet (with matching identification number) containing: (a) an initial inventory of personal memorabilia and associated positive memories, (b) experimental instructions, (c) a set of questions to complete after each ''thinking session,'' and (d) a final page of posttest measures to complete at the end of the one-week experimental period. The initial inventory was a two-page questionnaire in which participants listed in a table as many personal mementos (e.g., memorabilia, photographs, gifts, awards, and souvenirs) of happy times from the past that they readily had physical access to each day. They were instructed to list in the left-hand column of the table each piece of memorabilia, and then briefly describe in the right-hand column the specific positive memory associated with the particular object.

Experimental manipulation

According to a random schedule, participants received one of three different sets of experimental instructions. They were asked to review these instructions before each "thinking session." In the *cognitive imagery* condition, participants were instructed as follows:

> First, turn to your list of positive memories and choose one to reflect upon. Then sit down, take a deep breath, relax, close your eyes, and begin to think about the memory. Allow images related to the memory to come to mind. Try to picture the events associated with this memory in your mind. Use your mind to imagine the memory. Let your mind wander freely through the details of the memory, while you are imagining the memory.

In the *memorabilia* condition, participants were instructed for each "thinking session" to turn to the initial inventory of memorabilia and associated positive memories and choose one of these pieces of memorabilia to reflect upon. Participants in both experimental groups were told they could either choose the same or a different object (or memory) for each "thinking session." For each "thinking session," participants in the memorabilia condition were instructed as follows:

> First, turn to your list of mementos and choose one to reflect upon. Next, retrieve this object from where you keep it. Then sit down with it, take a deep breath, and relax while holding the object in front of you. Begin to think about the memory associated with the memento. Allow images related to the memory to come to mind. Try to keep focusing on the object. Let your mind wander freely through the details of the memory, while you are looking at the memento.

Note that both the cognitive imagery and memorabilia groups reminisced about memories associated with personal mementos in their "thinking sessions." However, the former group relied on mental images in reminiscing, whereas the latter group relied on a personal memento itself in reminiscing. In this way, we equated the two experimental groups in terms of the recency, content, and richness of the particular memories they recalled.

In the *control* condition, participants were instructed as follows:

> First, think about any event, circumstance, or issue that is of interest or concern to you these days. Then sit down, take a deep breath, relax, close your eyes, and begin to think about the event, circumstance, or issue that you've chosen to focus on. Allow any thoughts to come to mind while you think about the topic you've chosen to focus on. Let your mind wander freely through the details of the topic, while you are thinking about your chosen topic.

We incorporated this control condition in the design so as to include a group of participants who spent an equivalent amount of time sitting quietly by themselves, relaxing, and thinking about life events in general, compared to the two reminiscence groups.

Posttest

Following each "thinking session," participants were instructed to list briefly the content of their thoughts and to indicate the number of minutes the session lasted. After each "thinking session," participants in the cognitive imagery and memorabilia groups also answered additional questions assessing the amount of detail (1 = not at all detailed, 7 = very detailed) and vividness (1 = not at all vivid, 7 = very vivid) of the positive memories they had recalled. Following the last "thinking session," all participants completed a posttest questionnaire that contained the same questions as they has answered at the pretest assessing the frequency of happy, unhappy, and neutral feelings during the past week (Fordyce, 1987).

RESULTS AND DISCUSSION

Description of Thinking Sessions

There were no significant differences among the three experimental conditions in the average amount of time spent in the 14 "thinking sessions" across the one-week period, $F(2, 60) = 2.39$, $p < 0.11$. The average length of each session was 12.85 min (SD = 9.63). Inspection of the content of thoughts recorded after each session indicated that participants in the two reminiscence groups restricted their thoughts exclusively to the memories associated with the particular objects of memorabilia they

selected for each session. Thoughts of participants in the control condition were primarily focused on the present and the future, and encompassed a wide range of concerns, including academic, romantic, family, health, financial, and job-related issues. In addition, the cognitive imagery group reported relying on mental images in reminiscing, whereas the memorabilia group reported relying on physical mementos. Thus, participants in each condition appear to have followed experimental instructions.

Experimental Effects on Changes in Reported Frequency of Happiness

Reminiscing about Positive Memories vs. Thinking about Present or Future Concerns

Our first hypothesis was that participants who used either cognitive imagery or memorabilia to reminisce would show greater increases in the reported frequency of happiness over the past week, compared to respondents in the control group who did not engage in positive reminiscence. To test this hypothesis, we conducted a mixed-model analysis of variance (ANOVA) with reported percentages of happy feelings during the past week as the dependent variable, using gender and experimental condition as between-groups independent variables and time (pretest vs. posttest) as a within-subjects independent variable. Results revealed statistically significant main effects of gender, $F(1,59) = 7.63$, $p < 0.01$, $\eta^2 = 0.12$, and time, $F(1,59) = 4.70$, $p < 0.04$, $\eta^2 = 0.07$, as well as a significant time $\times$ condition interaction, $F(2,59) = 3.22$, $p < 0.05$, $\eta^2 = 0.10$. No other effects were statistically significant, Fs > 2.36, ps > 0.10.

Interpreting these main effects, descriptive statistics revealed that compared to males (mean = 48.54, SD = 5.61), females (mean = 52.20, SD = 5.60) reported feeling happy a higher overall percentage of time collapsing across pretest and posttest estimates; and collapsing across the three experimental conditions, posttest estimates of the percent of time feeling happy during the past week (mean = 53.08, SD = 8.32) were higher than pretest estimates (mean = 50.85, SD = 5.83).

We next probed the significant time $\times$ condition interaction. Figure 1 presents mean estimates of the percent of time one felt

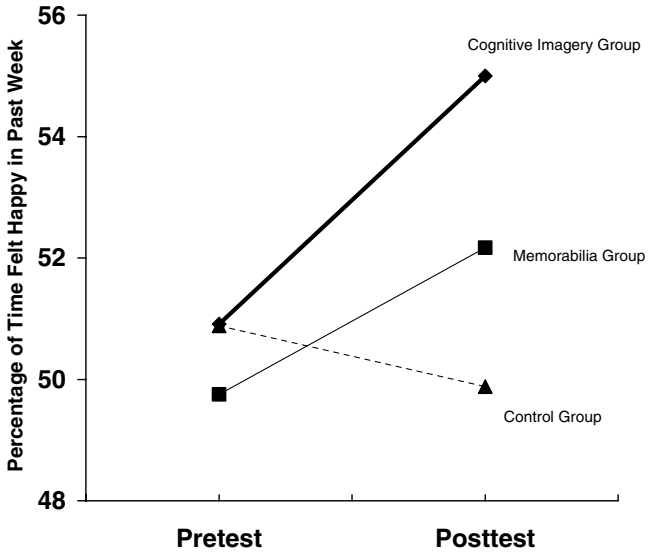

Figure 1. Participants' pretest and posttest estimates of the percentage of time they felt happy during the past week, displayed separately for the cognitive imagery ($n = 22$), memorabilia ($n = 21$), and control ($n = 22$) groups.

happy during the past week at the pretest and posttest for each of the three experimental groups. Examining temporal changes in reported happiness for each condition, follow-up pairwise t tests revealed a statistically significant increase in the percentage of time participants reported feeling happy for both the *cognitive imagery* condition, $t(21) = 5.72$, $p < 0.0001$, Cohen's $d = 1.25$, and the *memorabilia* condition, $t(20) = 3.22$, $p < 0.003$, $d = 0.70$, but not for the control condition, $t(21) = 0.10$, $p < 0.92$, $d = 0.02$. Confirming the first *a priori* hypothesis, these results indicate both forms of reminiscence increased the frequency of happy feelings over the weeklong study, whereas the control treatment did not.

Reminiscing via Cognitive Imagery vs. Memorabilia

Our second hypothesis was that reminiscing about positive memories using cognitive imagery would increase the reported frequency of happiness more than would reminiscing about positive memories using memorabilia. To test this hypothesis,

we conducted a mixed-model ANOVA using the data for the two experimental groups only, with reported percentages of happy feelings during the past week as the dependent variable, gender and experimental condition as between-groups independent variables, and time (pretest vs. posttest) as a within-subjects independent variable. Results revealed statistically significant main effects of gender, $F(1, 39) = 8.73$, $p < 0.01$, $\eta^2 = 0.18$, and time, $F(1, 39) = 41.27$, $p < 0.0001$, $\eta^2 = 0.51$, as well as a significant time × condition interaction, $F(1, 39) = 4.17$, $p < 0.05$, $\eta^2 = 0.10$. No other effects were statistically significant, Fs > 1.38, ps > 0.24. Confirming the a priori hypothesis, the significant time × condition interaction indicated that participants who used cognitive imagery to reminisce about positive memories showed a greater increase in the reported frequency of happy feelings over the past week than did participants who used memorabilia to reminisce about positive memories (see Figure 2).

Differences in the Vividness and Detail of Positive Memories Between Reminiscence Groups

Mean between-group Differences

We hypothesized that using cognitive imagery to stimulate reminiscence would produce more vivid positive memories,

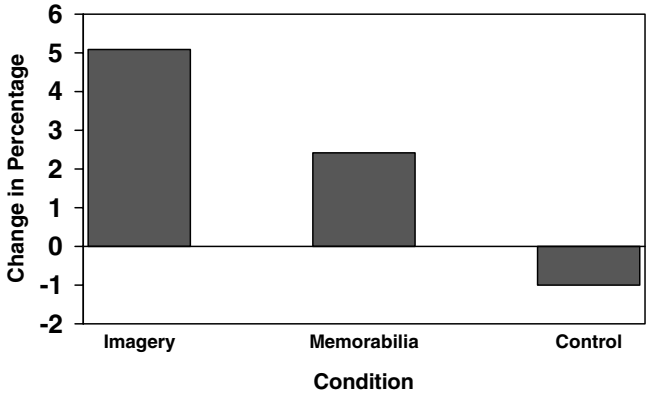

Figure 2. Pretest–posttest change in percentage of time during the past week that respondents reported feeling happy during the past week, as a function of experimental condition (cognitive imagery, $n = 22$; memorabilia, $n = 21$; control, $n = 22$).

compared to using memorabilia to stimulate reminiscence. To test this hypothesis, we first averaged the vividness ratings of recalled positive memories across the 14 "thinking sessions" for each participant in the cognitive imagery and memorabilia groups. Confirming the *a priori* hypothesis, participants in the cognitive imagery group (mean = 5.43, SD = 0.50) reported more vivid positive memories on average than did participants in the memorabilia group (mean = 5.17, SD = 0.47), $t(41) = 1.89$, one-tailed $p < 0.05$, $d = 0.58$.

It was also conceivable that using cognitive imagery to reminisce might stimulate greater mental elaboration of positive memories and thus a great amount of detail in memories, compared to using memorabilia to reminisce. To examine this possibility, we averaged ratings of the amount of detail in recalled positive memories across the 14 "thinking sessions" for the participants in each reminiscence group. Contrary to prediction, however, there was no statistically significant difference between ratings of detail in recalled memories for participants in the cognitive imagery group (mean = 4.05, SD = 0.67) vs. the memorabilia group (mean = 4.00, SD = 0.45), $t(41) = 0.27$, one-tailed $p < 0.40$, $d = 0.08$.

Vividness as a Mediator of the Impact of Reminiscing

We also used multiple regression to test whether perceived vividness of recall mediated the greater increase in frequency of happiness found in the cognitive imagery group relative to the memorabilia group. Because the experimental groups perceived equivalent amounts of detail in recalled memories, and perceived detail was unrelated to changes in happiness ($\beta = 0.03$, one-tailed $p < 0.49$), we did not pursue amount of detail in memories as a potential mediating variable. To form a dependent variable for mediational analyses, we first computed happiness change scores for each participant, by subtracting pretest reported frequency of happiness from posttest reported frequency of happiness. To establish mediation, we followed the procedures of Baron and Kenny (1986), using multiple regression to assess the statistical significance of: the association between: (a) experimental condition [cognitive imagery (1) vs.

memorabilia (0)] and change in level of happiness, $\beta = 0.30$, one-tailed $p < 0.05$; (b) experimental condition and perceived vividness of recall, $\beta = 0.28$, one-tailed $p < 0.05$; and (c) perceived vividness of recall and change in happiness, when controlling for the effect of experimental condition, $\beta = 0.63$, one-tailed $p < 0.0001$ (see Holmbeck, 1997; MacKinnon and Dwyer, 1993).

Having met these three necessary conditions, we tested the statistical significance of the indirect effect of experimental condition on change in happiness as mediated by perceived vividness (Sobel, 1988). This indirect effect was statistically significant, $\beta = 0.17$, $z = 1.78$, one-tailed $p < 0.05$, indicating that the perceived vividness of recalled memories mediated the impact of reminiscing on changes in happiness. Decomposing the effects (see Kline, 2005), this mediating pathway explained 59% of the total effect of experimental condition on changes in happiness. These results support the conclusion that vividness of recalled memories, but not the amount of recalled detail, partially mediates the greater impact of cognitive imagery, relative to memorabilia, on increases in happiness.

GENERAL DISCUSSION

This research advances current knowledge about the impact of reminiscence on positive affective experience in several important ways. First, in both Studies 1 and 2, the more often college students reminisced about pleasant memories, the more positive was their reported emotional experience. This finding extends earlier research in older populations (Havighurst and Glasser, 1972) to a younger population and suggests that positive reminiscence largely serves an adaptive function for college-aged adults. Findings from Study 1 also indicate that using reminiscence to gain perspective and self-insight toward the present is associated with a greater perceived ability to savor positive outcomes, whereas reminiscing simply to escape from the present is associated with a lower perceived savoring ability. Evidently, the adaptive value of positive reminiscence lies not in

its use as a form of escape from present problems, but rather as a constructive tool for providing a sense of perspective in the present.

Study 1 also revealed important differences in the way men and women use reminiscence. Women were more likely than men to reminisce in ways that were associated with a greater perceived savoring capacity. Women, relative to men, not only reminisced more often and felt better able to enjoy their lives, but also were more likely to reminisce to gain perspective and self-insight. Men were more likely to reminisce to escape from the present – a purpose associated with a lower perceived savoring ability.

These sex differences may stem from sex-role stereotypes about appropriate masculine and feminine behavior that are learned through differential socialization. The emphasis on achievement that dominates the masculine stereotype (Bem, 1981) may lead sex-typed males to view reminiscence as a counterproductive form of "dwelling on the past" that detracts from goal-directed actions in the present (cf. Bryant et al., 1991). Indeed, further examination of the data reveals that nearly one-quarter (23%) of the men, but none of the women, in Study 1 spontaneously mentioned this belief, Fisher's exact $p < 0.0001$. The feminine stereotype, in contrast, permits more introspection and self-contemplation (cf. Maccoby and Jacklin, 1974) and may thus make women better able or more willing than men to use reminiscence in ways that enhance their enjoyment of life.

Additionally, the recent trend in lifespan perspectives on reminiscence may further illuminate the observed gender differences. For example, parents have different patterns of interaction with daughters and sons, which may socialize children from a young age into different styles of reminiscing. Reese et al. (1996) found that parents engaged in a more elaborative style of reminiscence with pre-school aged daughters as opposed to same-aged sons – a behavior true of both mothers and fathers. In fact, the authors suggest that, from a young age, girls are socialized to believe that reminiscence is an important part of the self-concept, and this activity is thus reinforced. Similarly, Buckner and Fivush (2000) found girls as young as age 8 to have more vivid, coherent, and elaborated reminiscence narratives compared to same-aged boys,

likely due to socialization differences among parents. Such literature also supports current findings that women are more likely to reminisce about childhood relationships, and do so for interpersonal reasons, compared to men who reminisce for more instrumental, intrapersonal reasons (Adcock and Ross, 1983; Merriam and Cross, 1982). In short, evidence from the present research concurs with past work to support the contention that sex differences in styles of reminiscence are socialized from a young age.

The present research also contributes to our understanding of how different styles of reminiscence relate to positive affective experience. In Study 1, respondents who had specific strategies for intensifying memory recall reported that they enjoyed life more, compared to people who lacked these specific strategies. Testing hypotheses about the influence of positive reminiscence on reported frequency of happiness, Study 2 demonstrated that students who reminisced twice daily for a week about positive memories using either cognitive imagery or memorabilia reported greater increases in happiness over the course of the week, compared to students who merely thought about their present life situation twice daily for a week. This result provides experimental evidence that increasing the frequency of positive reminiscence can increase people's levels of happiness.

The current findings are encouraging, because reminiscence is important not only for enhancing subjective well-being, but also in terms of developing the self-concept. Erikson (1963) has characterized the period from adolescence to early adulthood as a time of great import for identity development, and in recent years, researchers have begun to examine the role that reminiscence plays in such development. McAdams (1985, cf. Thorne and McLean, 2002) has argued that identity becomes a salient concern when young adults notice incongruities between present and past selves and when they try to imagine possible future selves. One way to alleviate such cognitive dissonance is to reflect back on one's life so far, making reference to autobiographical memories to gain insight and constellate a more cohesive sense of self. In terms of the current findings that women were more likely to gain perspective and self-insight from reminiscing whereas men were more likely to use reminiscence to escape the present, what we may be observing are

differences in attempts at identity cohesion (Bluck, 2003; Conway, 1996). That is, early socialization may lead females reflect on autobiographical memories, incorporate such self-knowledge into existing identity structures, and develop a new, evolving sense of future self. Conversely, because males may not have been as adequately socialized in how to face vulnerability in their self-structure, their use of past-self reminiscence during difficult times may reflect a desire to hold onto to an earlier period of greater cohesion.

Study 2 further identified one particular means of intensifying positive reminiscence – i.e., cognitive imagery – that boosted levels of happiness more effectively than another – i.e., memorabilia. This result is important because it provides evidence that people can learn to use their minds in ways that help them better harness the adaptive benefits of positive reminiscence. Picturing pleasant memories in the mind's eye appears to facilitate the positive affective consequences of reminiscence more than merely reflecting on external objects associated with these memories.

The present data also shed light on the mechanism through which cognitive imagery has its greater impact on happiness. In particular, cognitive imagery produced more vivid recall, but did not increase the amount of recalled detail, compared to memorabilia; and vividness predicted increases in happiness, whereas amount of recalled detail did not. Thus, perceived vividness, but not perceived detail, partially mediated the influence of experimental condition on changes in happiness. Mental imagery seems to help one relive positive memories more vividly, and these vividly rekindled positive feelings appear to "rub off" on the individual over time (cf. Finke, 1985; Strack et al., 1985). Our findings suggest that interventions aimed at increasing the frequency of positive reminiscence will increase levels of happiness most effectively when they encourage participants to use vivid, cognitive imagery in recalling positive memories.

Such findings regarding the differential effects of cognitive and behavioral strategies for reminiscence are intriguing. For young adults, cognitive strategies appear to provide the most powerful effects. This relationship is especially interesting in light of the wealth of literature suggesting that behavioral strategies (i.e., memorabilia, journaling) are a key component of

reminiscence therapy in older adults (Buchanan et al., 2002; Kelly and Mosher-Ashley, 2002; Ott, 1993). Why should there be such a difference in salience of the strategy used between older adults and young adults? It may be explainable in terms of memory capacity and general differences in cognitive functioning across the two groups. The neuropsychology literature has long established that there is a normative age-related decline in cognition (Ratcliff and Saxton, 1998), which would predictably make free recall of autobiographical memories more challenging. Thus, behavioral aids are necessary to promote reminiscing and enhance retrieval of self-defining memories (Ott, 1993). However, in healthy young adults, such cognitive difficulties are typically not an issue, and they can engage in free recall of personal memories in a potent and vivid manner.

Of course, at the other end of the cognitive spectrum are young children, whose cognitive faculties are not yet fully developed. Continuing research into developmental aspects of reminiscing may reveal a comparable need for behavioral rather than cognitive strategies to facilitate reminiscing strategies among young children. In line with much of the psychodynamic literature on reminiscing in older adults (see Buchanan et al., 2002, for a review), behavioral strategies in the young could be conceptualized as the use of ''transitional objects'', objects that a child can use to promote a sense of continuity of self and reduce anxiety in the face of changing environments (Winnicott, 1951). In short, in taking a lifespan perspective on self-concept, future research may reveal a reminiscence continuum, where optimally functioning young adults can engage in cognitive strategies, while their younger and older counterparts must rely on behavioral strategies in light of their reduced cognitive capacities.

Based on these findings, we can begin to weave a nomological net of key constructs related to the effective use of positive reminiscence in everyday life. We can speculate that a mindful awareness of positive experiences while they are unfolding enables a more vivid cognitive representation of these pleasant memories during later recall. Consciously attending to the specific aspects of an ongoing positive experience one finds pleasurable would facilitate active memory-building, a primary means through which people strive to capture the joy of happy moments (Bryant, 2003).

Experiencing positive events more mindfully and vividly would help one encode these memories more vividly, thereby enabling more vividness in the later recall of these pleasant memories. Cognitive imagery may help one recreate the same feelings one originally had at the time the memories were first formed more effectively than external memorabilia.

Although we have explored the antecedents, consequences, content, and style of naturally occurring positive reminiscence and have demonstrated that reminiscing can boost happiness, we have largely ignored the role of personality in reminiscence and have not included personality measures in this research. However, other researchers have directly examined reminiscence as a function of personality, primarily in terms of the ''Big Five'' personality traits of neuroticism, psychoticism, openness to experience, agreeableness, and conscientiousness. Clearly, certain personality types may be more likely to engage in positive reminiscence or to benefit from it. For example, Webster (1994) found that adults who were high on openness to experience tended to reminisce more frequently, and were more philosophical when doing so. In addition, Bryant (2003) found that people high in dispositional affect intensity felt more capable of deriving joy through positive reminiscence. Thus, future research on positive reminiscing might include measures of personality to improve conceptual and statistical precision.

We must also be aware of the limitations of our data. One potential problem with our conclusion about the superiority of cognitive vs. behavioral strategies in positive reminiscence concerns the nature of our experimental instructions. Notice that we instructed the cognitive imagery group to ''picture the events associated with the memory'' when they reminisced, whereas we instructed the memorabilia group to ''think about the memory associated with the memento'' when they reminisced. By restricting the memorabilia group to details related to the physical object at hand, we may have exaggerated the differences between these two ways of reminiscing. Although we instructed the memorabilia group to ''allow images related to the memory to come to mind'' and ''let your mind freely wander through the details of the memory,'' we also asked them to ''try to keep focusing on the object.'' By nature, it may be harder to think about a mem-

ory vividly when one has the competing cognitive task of focusing on an external object. Had we instructed participants to begin by reviewing memorabilia but allowed them to switch to cognitive imagery if they wished, the differences between the two experimental conditions might well have vanished.

Similarly, our cognitive imagery instructions asked participants to choose a positive memory associated with a cherished memento and then "sit down, take a deep breath, relax, close your eyes, and begin to think about the memory." But it did not explicitly instruct participants to keep their eyes closed during the entire experimental session. While they used cognitive imagery, people may also have opened their eyes, looked around the room, and seen a memento associated with that particular memory. In this case, the effects of physical memorabilia would add to the effects of cognitive imagery, making it appear that imagery is more effective in boosting happiness than memorabilia alone. We do not know whether any cherished objects associated with the memories that participants in the cognitive imagery condition chose to recall were actually in the room with them when they reminisced, though it is likely that some memorabilia were present. Future field studies could prevent visual feedback in the imagery condition by instructing participants to keep their eyes closed during the entire session. Nevertheless, our results provide compelling evidence that recalling happy memories can enhance present happiness.

Future research is needed to investigate the impact of different styles of deliberate memory-building and memory-recall on the vividness and consequences of positive reminiscence. Being more mindful of specific sources of pleasure during positive experiences, explicitly attending to these pleasurable stimuli and consciously storing vivid details about them, and frequently recalling these positive memories as vividly as possible may help people savor their lives more effectively. Yet, unless one finds some pleasure in the moment, there will be no positive details to memorize and no pleasant memories to recall. In this sense, savoring the moment is truly a necessary precondition for savoring the past (cf. Bryant, 2003). Clearly more work is needed to expand our understanding of the ways in which people strive to appreciate positive experiences in their lives.

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NOTES

[1] Although we use the terms "positive affect," "happiness," "perceived capacity to enjoy or savor life," and "subjective well-being" to reflect different interrelated forms of positive experience, these concepts are not interchangeable. Subjective well-being is the broadest of these constructs and encompasses affective, behavioral, cognitive, and psychophysical self-assessments of the quality of one's life (cf. Bryant and Veroff, 1984; Diener, 1984). Positive affect is one form of subjective well-being that includes multiple dimensions of positive emotion, one of which is happiness (Fordyce, 1987). Perceived capacity to savor life is a distinct form of perceived control over positive emotions reflecting personal beliefs about one's ability to derive pleasure in response to positive experience (Bryant, 1989, 2003).

[2] The present research focused exclusively on "positive reminiscence" (Hedgepeth and Hale, 1983; Lewis, 1973) in which individuals recall pleasant memories. There are, however, several other types of reminiscence that have also been studied in elderly populations. For example, Butler (1963) has elaborated on the process of life-review, whereby older adults reflect on their life as a whole and strive to integrate past and present. This is contrasted with Lowenthal and Marazzo's (1990) process of milestoning, which differs from life-review in that it can be used with cognitively impaired individuals, does not require resolution, and is primarily positive in valence. Milestoning takes place in a group format and prompts positive emotions through guided discussion and use of multi-sensory stimuli designed to invoke memories and facilitate group communication of experiences (Ott, 1993). McMahon and Rhudick (1967) have also identified two other kinds of public (as opposed to private) reminiscence: storytelling (i.e., imparting knowledge and experience to entertain and educate listeners), and glorifying the past (i.e., exaggerating the qualities of the past to impress listeners). Finally, Lo Gerfo (1980) has distinguished among three types of reminiscence: informative (i.e., retelling past events to others); evaluative (i.e., making subjective judgements about past actions and decisions); and obsessive (i.e., ruminating about negative past experiences). The present

study's exclusive focus on positive reminiscence was chosen because it seemed more closely linked to positive affective experience than these other forms of reminiscence. In addition, initial pilot testing revealed that the other types of reminiscence were relatively infrequent among college-aged individuals.

[3] When participants provided more than one codeable answer to a particular open-ended question, we categorized only the first-mentioned response. The sole exception to this rule involved the question about stimulants of spontaneous reminiscence, for which we also coded the number of stimuli mentioned.

[4] Unless otherwise noted, response percentages reported in the text are those based on codeable, non-missing cases.

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