Dissertation Proposal

Using Autobiographical Memory to Maintain Intimacy across the Lifespan

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The purpose of the present investigation is to explore the use of autobiographical memory (AM) to maintain intimacy in relationships across the lifespan. Two factors related to using AMs to maintain intimacy are age (e.g., Webster, 1995) and the emotional quality of the memory being shared (Pillemer, 1998; see also Alea & Bluck, 2002 for a review). Before reviewing how these factors exert their influence, the theoretical perspective from which this study developed is reviewed.

Ecological approach and the function of AM

This study is grounded in the ecological approach to the study of memory (Bruce, 1989; Neisser, 1978). Advocates of the ecological approach emphasize exploring not only how memory works (i.e., memory mechanisms) but also the uses of memory in everyday life: the function of memory (e.g., Baddeley, 1987; Bruce, 1989). Researchers agree that people use AM to serve three broad functions (self, directive, and social; e.g., Bluck & Alea, 2001; Pillemer, 1998). The self function includes instances where memories are used to promote continuity or development of the self (e.g., Conway & Pleydell-Pearce, 2000). Using memories to solve current problems or to guide future behaviors are examples of the directive function of AM (Baddeley, 1987; Cohen, 1998). In the social domain, AMs can be used in conversation for initiating relationships, for maintaining and enhancing intimacy, and for eliciting empathy or reassurance (Bluck, Habermas, & Rubin, 2002; Cohen, 1998).

Despite the theoretical importance of function, only three studies have empirically investigated the function of AM. Hyman and Faries (1992) had adults report memories that were often talked or thought about and why these memories were frequently accessed. Participants reported using AMs primarily to serve self and social functions. Bluck, Habermas, and Rubin
(2002) used a self-report questionnaire with young adults. They found evidence for a self-continuity (self) function, a problem-solving (directive) function, and two distinct social functions: intimacy and reassurance. Recent research has substantiated the existence of the three functions through qualitative coding of older couple’s conversations about relationship events (Pasupathi, Lucas, & Coombs, 2002). Thus, using AMs for self, directive, and social functions is evident in both global self-report and conversational analyses, and across age groups.

More research his needed to compliment and extend this work on the function of AM. For instance, there is a limited amount of research directly investigating age differences and similarities in the use of AM for various purposes (c.f., Webster, 1995; Webster & McCall, 1999). There is also no work investigating what features of the AM sharing process (e.g., the characteristics of AM being told) heighten or hinder the extent to which a function is served. The present study begins this more fine-grained exploration of function by focusing exclusively on one social function: intimacy maintenance.

The present research focuses on the social function of remembering for several reasons. It has been suggested that using AMs for social purposes, such as intimacy maintenance, are the most fundamental (e.g., Bruce, 1989; Nelson, 1993). Neisser (1988), for example, suggests that using AMs is adaptive in that it encourages the development of social relationships crucial for evolutionary success. Regardless of which function is most fundamental the social function warrants independent attention due to its ubiquity in everyday life (e.g., Hyman & Faries, 1992). Individuals report sharing personal memories with others not present at the original event (e.g., Hyman & Faries, 1992), as well as reminiscing and co-constructing memories with those present at the original event (e.g., Edwards & Middleton, 1986; Gould & Dixon, 1993). In fact, people often talk about the past
and share their experiences with others in order to fulfill social goals (e.g., Baumeister & Newman, 1994; Hirst & Manier, 1996; Pasupathi, et al., 2002), such as developing intimacy or group rapport (Norrick, 1997). Thus, the frequency of remembering in social contexts and the potential fundamentality of social uses of AM, such as intimacy maintenance, suggest that a research project focused solely on the social function of intimacy in relationships is appropriate. Focusing on the social function however also reveals the importance of considering lifespan variation in the use of AM to maintain intimacy.

Lifespan variation in the use of AM to maintain intimacy

Researchers have only recently incorporated a life span developmental approach (Baltes, Staudinger, & Lindenberger, 1999) into the study of AM. Taking a life span perspective involves understanding how changes in developmental tasks and life contexts associated with each life phase (e.g., social networks), and gains and losses associated with chronological age, influence how AM is used (Bluck, 2000; Bluck & Habermas, 2001).

Lifespan theorists describe age periods that are characterized by specific developmental tasks and life contexts (e.g., Erikson, 1980; Havigurst, 1972; Levinson, 1986). The importance and utility of using AMs to maintain intimacy should change in conjunction with these tasks and contexts. For example, tasks in young adulthood revolve around developing intimacy, such as finding a spouse, (e.g., Havigurst, 1972; Neugarten, 1979). Thus, during early adulthood AMs may be used for initiating relationships. In late life, maintaining intimacy in established relationships and gaining social support from close others may be paramount for dealing with the losses that occur in old age (Neugarten, 1979), such as widowhood and retirement (Havigurst, 1972). Thus, tasks and contexts at each life phase influence the relative importance of using the past to establish and maintain intimacy in relationships.
One life context especially relevant to using AMs to maintain intimacy is the individual’s social context. Adults of all ages have social networks made up of important, close relationships (Kahn & Antonucci, 1980). In late life, however, individuals become increasingly selective about whom they interact with (Carstensen, 1993) and are typically more satisfied with the quality of their relationships than younger adults (Antonucci & Akiyama, 1995). Thus, using AMs for social purposes, such as maintaining intimate ties that have developed over a lifetime, may be used more frequently and become particularly important in old age (Cohen, 1998).

In addition to considering how lifespan tasks and contexts (e.g., social contexts) influence the use of AM to maintain intimacy, a life span perspective also involves understanding how gains and losses that occur with development, and the adaptive behaviors that individuals use to obtain optimal functioning (Baltes, 1987; Baltes & Baltes, 1990) influence the use of AM to maintain intimacy. For instance, although some basic cognitive processes decline with age (see Zacks, Hasher & Li, 2000, for a review of age-related changes in memory), the use of AM to maintain intimacy may not be affected by age-related changes in cognition. Well-rehearsed AMs may be the kind of pragmatic knowledge that does not show decline with age (e.g., Bluck, Levine, & Lauhler, 1999; Cohen & Faulkner, 1988). In fact, by old age, individuals have presumably spent a lifetime sharing their memories with others and using AMs for social purposes, such as intimacy maintenance. Thus, the ability to use AMs to maintain intimacy in relationships may actually be better in late life than in young adulthood.

While the above suggestions regarding lifespan variation in using AMs for maintaining intimacy in relationships is speculative, a limited amount of empirical work supports these assumptions. Older adults are more likely than younger adults to self-report reflecting on the past to maintain intimacy in relationships (Webster, 1995; Webster & McCall, 1999). The present
study extends this work in two ways. First, by examining the use of AMs to maintain intimacy in relationships in young and older adults during specific instances of AM sharing, rather than through self-report measures. Second, the present study addresses how differences in way that individuals remember the past, particularly age differences in the emotional quality of AMs, influence the extent to which AMs are used to maintain intimacy in relationships.

**Emotional quality of AM**

Autobiographical memories have a number of qualitative characteristics (e.g., accuracy, detail, emotion; see Larsen, 1998 for a review). The present research focuses exclusively on the emotional quality of AMs because when remembering personally meaningful events and surprising national events (e.g., flashbulb memories), individuals frequently remember emotional information (e.g., Bohannon, 1988; Bluck, et al., 1999; Brown & Kulik, 1977; Cohen, Conway, & Maylor, 1994). Further, while other memory characteristics (e.g., detail) are important, the amount of emotion expressed during recall may be particularly important when using AMs to maintain intimacy in relationships. In reviewing the functions of AM, Pillemer (1998) suggests that AMs that are more emotional may be more useful in serving important interpersonal goals, such as intimacy maintenance. The present research represents a modest first attempt at exploring the relation between level of emotion in autobiographical recall and feelings of intimacy as a function of remembering past relationship events. The extent to which AMs are emotional however is partially driven by characteristics of the person who is sharing the memory, such as the person’s age.

Age is one personal characteristic that may influence how events are remembered. There is some evidence to suggest that there are differences with respect to the emotional quality of older and younger adult’s memories. Older adults are more likely than younger adults to recall a
greater proportion of emotional material than neutral material. Carstensen and Turk-Charles (1994) find that the proportion of emotional material recalled about a moderately emotional narrative text passage increases across the adult lifespan: older adults recall more emotional material than neutral material from the narratives. Similarly, when recalling a neutral event previously performed in the laboratory, older adults are more likely than younger adults to focus on how they felt compared to setting features (Hashtroudi, Johnson, & Chrosniak, 1990). In contrast, when the event is particularly emotionally arousing there are no age differences in the amount of emotional material recalled about a salient event, such as the televised verdict announcement of the OJ Simpson trial (e.g., Bluck, et al., 1999; Bluck & Li, 2000). Thus, although results are somewhat equivocal, older adults often recall more emotional material, especially when recalling mild to moderately emotionally material. This suggests that older adults will remember and retell AMs in a manner that better serves the social function of intimacy maintenance, that is, with more emotion. Thus, taking a lifespan perspective and including young and old adults in the present study provides a way of examining the relation between the emotional quality of memory and using AM to maintain intimacy. The emotional quality of a memory however may depend on the valence of the event being remembered.

The events recalled in AM research include positive, negative, and neutral events. Participants in the present study however will be recalling positive memories only. Positive memories were chosen as the focus of the present investigation for a few reasons. First, recalling only positive memories allows for more experimental control because the valence of an event can influence the reasons why people talk about the past (Pasupathi, et al., 2002). Second, while people frequently share negative emotional events with others (e.g., Pennebaker, Zech, & Rime, 2001), when asked to recall important AMs, individuals frequently remember positive events
Using AM to Maintain Intimacy (Hyman & Faries, 1992). While sharing and working through negative events may enhance intimacy in relationships in therapeutic settings (e.g., during marital therapy; Schaefer & Olson, 1981), it is expected that positive memories are more likely to be used in every day life to maintain intimacy in long-term relationships. Finally, the focus of the present investigation is on how AM sharing is used to maintain intimacy in the relationship that is being remembered, and not with the person whom one is talking to. It is thought that while recalling negative memories might make you feel closer to the person you are talking to, recalling positive memories more than likely makes you feel closer to the person you are talking about. It is the second scenario, intimacy toward the person one is remembering, that is the focus of the present investigation.

Given that the present study is a novel investigation of how AMs are used to maintain intimacy, focusing exclusively on positive memories seems an adequate starting point.

Before reviewing the specific aims and hypotheses of the study, it should also be noted that although not a major aim of the study, it is possible that there may also be gender differences with respect to using AMs to maintain intimacy in relationships. Women reminisce about the past more often than men (deVries & Watt, 1996; Webster, 1995), recall a greater number of memories, particularly for emotional important life events (Davis, 1999), and use the past more often than men to maintain intimacy (Webster, 1995). Further, women have a systematic advantage with respect to the emotional quality of their AMs (e.g., Harvey, Flannery, & Morgan, 1986; Ross & Holmberg, 1992). Wives often report relationship memories that are more clear and vivid than their husbands (i.e., including more emotional content; Ross & Holmberg, 1992). Together this work suggests that women, in general, may be at an advantage when using AMs to maintain intimacy in relationships.
Specific Aims and Hypotheses

The present investigation will explore the social function of remembering the past to maintain intimacy in relationships, during specific instances of AM sharing. There are two major aims of the study. The first aim is to investigate if levels of intimacy increase as a function of recalling relationship AMs, and whether this occurs differentially for younger and older adults. The second aim is to explore whether the proportion of emotional material shared during autobiographical remembering mediates changes in levels of intimacy. Though not a major goal, the proposed study also extends previous AM work by contributing to the small literature on age differences in the emotional quality of AMs, establishing the validity of previous findings that used narrative texts as analogues of AM.

The specific aims and hypotheses of the study are:

1. To investigate changes in self-reported levels of intimacy as a function of recalling past meaningful relationship memories for young and older adults. The primary aim of the study is to determine whether AM serves the social function of intimacy maintenance, and whether it does so differentially by age. This will be tested by comparing intimacy levels as a function of AM sharing (i.e., from pre to post autobiographical remembering), using narrative text recall as a control. That is, half of the participants will be recalling a non-autobiographical memory (i.e., a narrative text passage) to demonstrate that changes in intimacy occur only after sharing AMs.

   **Hypothesis 1:** It is expected that intimacy will increase as a function of memory sharing, but only for those individuals remembering an autobiographical event. No change in intimacy is expected from pre to post memory sharing for those individuals remembering a narrative text passage.
Hypothesis 2: It is expected that older adults in the AM condition will show the greatest increases in self-reported levels of intimacy as a function of recalling AMs.

2. To examine the relation between the emotional quality of AM and the use of AM to maintain intimacy in young and older adults. A secondary aim of the study is to examine if the emotional quality of AM influences the extent to which AMs are used to maintain intimacy, and whether this relation differs by age. This will be accomplished by content coding the AMs for the proportion of emotional material remembered and examining the mediating effects of emotional quality on changes in levels of intimacy as a function of AM sharing. It is important to note that only the emotional quality of AMs are expected to be related to levels of intimacy after AM sharing, since recalling a narrative text passage is not expected to influence levels of intimacy regardless of the quality of the memory.

Hypothesis 3: It is expected that AMs that are more emotional will better serve the function of intimacy (i.e., better predict increases in intimacy as a function of AM sharing).

Hypothesis 4: It is expected that the relation between the emotional quality of AM and intimacy will differ by age. Older adults are expected to retell AMs with more emotion than younger adults. Thus, the way older adults remember and retell AMs (e.g., more emotion) will better serve the function of intimacy maintenance and result in higher levels of intimacy as a function of recalling AMs for older adults than for younger adults.

3. To compare the emotional quality of self-selected AMs to memory for narrative text passages for young and older adults. An additional aim of the study is to clarify results about age differences and similarities in the emotional quality of older and younger adult’s AMs. Much of the confusion in past AM and aging work is because some studies have
individuals remember emotionally charged autobiographical events, others have participants remember mundane autobiographical events, and others narrative text passages. Since narrative text recall is being used as a control condition in the present study, age differences and similarities in the emotional quality of memory for these two types of material (i.e., autobiographical events and non-autobiographical narrative material) will be compared for the first time within a single study (c.f., Holland & Rabbitt, 1990)

**Hypothesis 5:** It is expected that the participant’s AMs will contain more emotional information than their recall of the narrative text passages. Regardless of type of material, older adults’ memories will contain more emotional information than younger adult’s memories.

**Hypothesis 6:** It is expected that the age differences will be larger in the narrative text condition than in the AM condition. That is, regardless of type of material, older adults are expected to recall more emotional material, while younger adults are expected to recall emotional information only in the AM condition.

**Method**

**Design**

The study is a 2 (Age) X 2 (Type of Memory) X 2 (Time) design. Age is a between subjects factor and consists of young and old adults. Type of Memory is also a between-subjects factor: half of the participants will be asked to recall an autobiographical memory (AM) and the other half will be asked to recall a narrative text passage (NT). Individuals in the AM condition will be recalling personal past memories; those in the NT condition will be recalling a previously presented narrative passage. Both groups will be asked to recall the same two topics a vacation and a date with their spouse. The NT condition is used as a comparison task that controls for the
act and the topic of remembering.\textsuperscript{1} The NT task can also be used to evaluate the utility of NT materials as an analogue for AM researchers. If Type of Memory was a within-subjects factor, feelings of intimacy associated with recalling an AM might carry over when recalling NT. In order to independently compare the effects of each type of material on feelings of intimacy, the Type of Memory variable is between-subjects. The central interest in the study is to measure intimacy levels as a function of autobiographical remembering, thus Time is a within-subjects factor consisting of pre and post memory sharing.

Participants

There will be 128 participants, including 64 participants in two gender-balanced age groups: young adults will range in age from 20 to 30 years old and older adults will range in age from 65 to 85 years old. The young adult age range was chosen so that the sample will not be biased towards young college students. The age range of the older sample includes individuals who are “young-old” and “old-old”, but excludes the “oldest-old” age group. This age range is typical in work exploring AM in late life (e.g., Bluck, et al., 1999; Cohen & Faulkner, 1988). Efforts will be made to include participants of various ethnic categories. Estimates for minority inclusion are based on the 2000 US Census for Alachua County, Florida, which includes individuals 18 and older (www.factfinder.census.gov). A breakdown of the proposed minority inclusion by gender reflecting the census proportions is shown in Table 1.

Participants will be currently married (for a minimum of two years). Intimacy in marital relationships will be the focus of the present study because of the salience of the spousal relationship, especially in late life (Antonucci & Akiyama, 1990), and the importance of intimacy in maintaining such relationships (e.g., Waring, 1984). It is recognized that including only married individuals introduces a sample bias: marriage may be associated with positive
well-being (e.g., Thompson & Heller, 1990). In order to control for the content of the memories (i.e., about a relationship-based event) however the loss in the generalizability of the sample seemed warranted. Both members of the spousal couple (e.g., both husband and wife) will not be included in the study in order to insure that there are no dependent observations.

Participants will be recruited from several sources. A portion of the young adult sample will be recruited from the Psychology Department’s participant pool. These participants will receive two research credits for participation. Contacts have already been made with several community organizations, and the names of approximately 40 senior adults who have agreed to participate in the proposed study are currently available. The UF Institute on Aging participant database, which consists of community dwelling adults ranging in age from 24 to 87 will be used to recruit the remainder of the participants. There will be no compensation for participation for participants coming from the community. Benefits however are likely: individuals often enjoy remembering the past and sharing their stories with others.

*Power Considerations.* Effect sizes ($f$; Cohen, 1988) from similar, previous work vary. Research on age differences in self-reported uses of AM to maintain intimacy show medium effect sizes (e.g., $f=.29$; Webster’s 1995). Work on age differences in the qualitative features of AM and narrative text show effect sizes ranging from $f=.10$ for AM (Gould & Dixon, 1993) to $f=.43$ for NT (Dixon & Gould, 1998). Pilot data indicate a medium ($f=.24$) effect size for changes in intimacy as a function of AM sharing. Given this variability, a “medium” effect size ($f=.25$; Cohen, 1988) was used to calculate the sample size needed with power equal to .80 and an alpha of .05. In order to detect the main and interaction effects ($k = 2$ for all variables, $u = 1$ for all effects), the estimated cell sample size was 16 per cell, or a total of 128 participants. This
sample size has adequate power ($\beta > .90$) to detect changes in levels of intimacy as a function of memory sharing, age differences in the emotional quality of memory, and any interaction effects.

**Measures**

A summary of the measures can be found in Table 2. These include (1) a screening measure, (2) general covariates, (3) relationship covariates and intimacy measures, and (4) memory covariates and memory characteristic measures. The contribution of each to the study is further described below.

**Screening measure.** Participants will complete a screening instrument assessing their cognitive status (Mini-Mental State Examination - MMSE; Folstein, Folstein, & McHugh, 1975), thus excluding individuals with impairment that may affect their ability to participate in a study on memory. Scores on the MMSE range from 0 to 30, with the average for “normal” individuals being 27.6. For the purposes of the present study, those individuals that score below a 26 will be excluded from further participation in the study.

**Covariate measures.** Demographic questions (e.g., age, gender, and ethnicity; see Appendix A) and self-rated health status (Maddox, 1962) will be assessed. Measures of fluid and crystallized intelligence (vocabulary and reasoning sub-scales of the Wechsler Adult Intelligence Scale – Revised; Wechsler, 1981) will also be given. These measures are expected to show typical age-related differences and will be used as covariates in subsequent analyses.

An additional covariate measure will be the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). This scale will be given to investigate changes in the individual’s positive and negative affective state as a function of AM sharing (see Appendix B). Including the PANAS ensures that changes on the intimacy measures as a function of memory sharing are independent of general changes in affective state. The PANAS assesses two
dimensions. Positive Affect (PA) reflects the extent to which a person feels enthusiastic and alert. Negative Affect (NA) is a general dimension of subjective distress and includes a variety of unpleasurable moods (e.g., irritable, afraid). Participants indicate on a 5-point Likert-scale, ranging from not at all to extremely, the extent to which a list of 20 adjectives describes how they feel at the present moment. Scores on the PANAS range from 10 to 50 for each sub-scale (PA and NA).

**Relationship measures.** Characteristics of the participant’s marital relationship (e.g., length of relationship) will be obtained (see Appendix C). Two major types of relationship measures will be used: a relationship covariate measure, and measures assessing changes in intimacy as a function of AM sharing.

**Relationship Covariate Measure.** In order to control for global levels of marital quality the Quality Marriage Index (QMI; Norton, 1983) is included. The QMI is a global, stable measure that asks spouses to rate how much they agree with statements about their marriage (Appendix C). There are five items that asks participants how they feel about their marriage, in general (e.g., “Our marriage is strong”) and to rate their response on a 7-point Likert-scale from 1 (very strong disagreement) to 7 (very strong agreement). The sixth item is an overall measure of satisfaction assessed on a 10-point Likert-scale (“All things considered, how happy are you in your marriage?”). Scores on the QMI range from 6 to 45. This measure has high consistency across waves of measurement (i.e., $r = $ approximately .97; Karney & Bradbury, 1997) and is suitable as a control measure of global marital quality.

**Intimacy Measures.** Two measures will be used to assess intimacy as a function of memory sharing: the Personal Assessment of Intimacy in Relationships (PAIR; Schaefer & Olson, 1981) questionnaire, and a semantic differential scale (SMD; Osgood, Suci, & Tennenbaum, 1957).
The PAIR is a 60-item measure of perceived intimacy (see Appendix D for a portion of the scale). Participants indicate agreement-disagreement on a 5-point Likert-scale. Sub-scales include: Emotional Intimacy, Social Intimacy, Sexual Intimacy, Intellectual Intimacy, and Recreational Intimacy. Directions ask participants to focus on how they are feeling at the present moment about their relationship. Raw scores on the PAIR are translated into a score similar to a percentile, with a range from 0 to 96. This measure is reliable (ranging from \( r = .70 \) to \( r = .90 \) across the various subscales; Schaefer & Olson, 1981), but sensitive to change, in that it has been used to demonstrate changes in intimacy after marital interventions (e.g., Hickmon, Protinsky, & Singh, 1997).

A semantic differential scale (SMD) will also be given to assess feelings and emotions about the marital relationship as a function of memory sharing (see Appendix E). The scale asks individuals to indicate how well a list of adjectives describes how they feel about their relationship. Although the scale measures affect toward the relationship, per say, the SMD has been used in other studies as a measure of marital satisfaction (e.g., Karney & Bradbury, 1997), and will be used in the present study as an indicator of marital intimacy. The adjectives are listed as oppositions (e.g., full – empty). Participants rate 15 items on a 7-point Likert-scale, positioned between the adjectives, the degree to which the words describe their feelings based on their “first impression and immediate feeling” about their relationship. Total amount of positive affect toward the marriage is summed across the scales and scores range from 15 to 105. Researchers have used this scale to investigate the relationship between the qualitative features of short marital interactions and changes in marital satisfaction (e.g., Karney & Bradbury, 1997).
**Memory measures.** Memory measures include a covariate measure, the Auditory Verbal Learning Task (AVLT; Rey, 1941), and two measures assessing memory characteristics, a memory characteristics questionnaire, and the emotional quality of the memory material.

*Memory covariate measure.* The Auditory Verbal Learning Task (AVLT; Rey, 1941) is an episodic memory task. Participants study a list of 15 semantically unrelated words for 1 minute, and after a delay period, write down as many of the words as they can. This measure will serve as a covariate measure to demonstrate that the sample has typical age-related memory differences irrespective of AM and narrative recall performance.

*Memory characteristics questionnaire.* A measure regarding judgments about the characteristics of the memories will be administered (adopted from Bluck, et al., 1999; Ross & Holmberg, 1992). There will be separate sets of questions for the two types of memories (AMs and NTs) and for the two events (vacation and date). An example of the questionnaire for an individual recalling an autobiographical vacation event can be found in Appendix F. The same questionnaire will be given for the date memory. A modified version of these questions will also be given to individuals in the NT condition. These questionnaires will be used to explore the relation between self-reported memory characteristics (e.g., vividness) and changes in levels of intimacy as a function of memory sharing.

*Emotional quality of memory.* Memories produced in both conditions will be content-coded for the amount of emotion expressed as opposed to neutral information expressed. Procedures for content coding the memories are described below under coding.

**Procedure**

The study measures and procedures are outlined in Figure 1. Participants will be tested individually in a comfortable interview room in the Psychology building. At the beginning of
each interview, participants will read and sign an Informed Consent. The order of presentation of the preliminary measures is: the demographics questionnaire, the PANAS, the marriage characteristics and QMI questionnaire, and the relationship intimacy measures (PAIR and SMD). The self-rated health measure (Maddox, 1962) will be given next for two reasons. First, I do not want participants to begin recalling AMs directly after completing the relationship questionnaires to minimize biasing memories in the direction of levels of intimacy. Second, in order to maximize the possibility of detecting changes in intimacy after recall, the amount of time between pre and post intimacy measures needs to be sufficient so that answers on preliminary questionnaires are not easily recalled. Pilot data indicates that even a shorter duration between pre and post memory sharing (e.g., the omission of the health questionnaire) was sufficient time to ensure that participants could not recall their previous responses. Extending this time period strengthens the manipulation.

Participants will be randomly assigned to either the AM condition or the NT condition (see Figure 3). The entire memory session will be audiotaped. The memory session will consist of either talking about AMs or recalling NT, both about the same topics. The two topics include a positive vacation shared with a spouse and a positive date shared with a spouse. These scenarios have been previously used in the AM and NT literatures (e.g., Dixon & Gould, 1998; Gould & Dixon, 1993; Ross & Holmberg, 1992) and are events that are likely to have been experienced by young and old couples. The order of the events (i.e., vacation and date) will be counterbalanced across participants. In both conditions, individuals will be encouraged to talk for 10 minutes about each memory. Standard probes and requests for additional information will be used if participants are reluctant to talk. The interview script for the AM condition and NT condition can be found in Appendix G.
**AM condition.** For the AM session, participants will be given 3 minutes to think about the memory that they want to share. This procedure is used so that the recall sessions between the AM and the NT remain as similar as possible given the two different types of material. Participants will be asked to describe a positive meaningful memory from a particular **(vacation)** they shared with their spouse and to tell the experimenter everything they remember about the **(vacation)**. Participants will be given 10 minutes to recall each AM. Young and old adults are typically finished recalling by the end of this time period (e.g., Gould & Dixon, 1993) and the average length of recall in pilot work was approximately 5 minutes. The same procedure will be repeated with the second AM (e.g., date memory).

**NT condition.** The narrative passages are adopted from a battery of stories developed for use in memory research with older adults (Dixon, Hultsch, and Hertzog, 1989). The narrative text passages can be found in Appendix H. The narratives are long, personal texts written in colloquial style and describe a single event (one about a vacation, the other about a date), including information about the character’s intentions, plans, evaluations, outcomes, behavior, and ruminations. Young and older adults report that these narratives are moderately emotional stories that illicit positive feelings, and are somewhat interesting and true-to-life (see Dixon, et al., 1989). The NTs are a suitable analogue to AM sharing because they require the use of free recall, contain a narrative structure, and are about the same topics as the AMs. They are a suitable control for AM however because the narratives are non-autobiographical.

The NT will be presented to the participants via audiotape. After a 3-minute presentation, participants will be given up to 10 minutes to recall the event. Participants will be instructed to describe the **(vacation)** that they just heard about and to tell the experimenter everything they remember about the **(vacation)**. Directions will be similar to those given in the AM condition,
and will emphasize that the person is to remember everything they can about the NT passages. The second narrative passage (e.g., about a date) will be presented and recalled in the same manner. The AM and NT conditions are procedurally equivalent, except the former has a 3 minute decision period and the latter a 3 minute presentation period.

At the end of both recall sessions participants will immediately be given the intimacy measures again (PAIR and SMD) in a counter balanced order. This will ensure that the memories are accessible to the participants while they are completing these measures. The memory characteristics questionnaires will be given next, followed by the presentation of the AVLT memory task list of words. The reasoning subscales of the WAIS-R will be given, followed by the recall portion of the AVLT task. The vocabulary sub-scale of the WAIS-R will be given next, followed by the PANAS to assess changes in the individuals overall affective state. At the end of the session, participants in both conditions will be given debriefing questions to assess the influence of possible confounds (see Appendix I). Those in the AM condition will be asked how comfortable they were sharing their memory with the interviewer, and if they would have told their memory differently if sharing it with someone of a similar gender and age (i.e., interviewer confound). Participants in the NT condition will be asked the extent to which they thought of a personal experience when recalling the narrative text passage (i.e., AM intrusion confound). The entire interview session is expected to take about 90 minutes. Data from a pilot study is available in Appendix J. The pilot study was conducted to provide information about the feasibility of the procedures and sensitivity of the measures.

**Interviewers**

All interviewers will be trained, young, female research assistants. Using females enhances the possibility that participants will disclose personal information (e.g., Shaffer, Pegalis, &
Bazzini, 1996). It is recognized that characteristics of the listener (e.g., age, gender, responsiveness, and familiarity) can influence what is shared during autobiographical remembering (Alea & Bluck, 2002; Pasupathi, 2001). Taking the listener into consideration, level of the listener’s responsiveness (i.e., the interviewer) will be controlled: interviewers will respond similarly, with interested eye contact and facial expressions but no verbal responses. Thus, the interaction will not be collaborative. Listener familiarity (known versus unknown) will also be controlled: interviewers and participants will be strangers.

**Coding**

All of the audio-taped interviews will be transcribed using standard transcription machines and computer voice-recognition software (Dragon, Naturally Speaking). Memories will be first categorized into information units (Warren, Nicholas, & Trabasso, 1979), which will form the basis for analyses. This procedure has been successfully used in previous research (e.g., Bluck, et al., 1999; Gould & Dixon, 1993). Both the AMs and the NT passages will be coded for emotional quality, that is, the information units will be coded as either emotional or neutral. No distinction will be made between positive and negative emotional information units. Similar procedures have been used in other studies (e.g., Carstensen & Turk-Charles, 1994). A codebook is currently available to assess the emotional quality of young and older adult’s personal memories for a salient event (Alea, Semegon, & Bluck, 2002). The procedures outlined in this manual for identifying emotionally charged or neutral information in AMs will be applicable to the present work. For example, an emotionally focused unit for the vacation event in the AM condition might include a statement such as, “We were so happy on our trip.” A neutral unit might simply say, “We took a trip.” Similar emotional and neutral statements might be given
about the NT passages (e.g., “They were happy on their trip” and “They took a trip”, respectively).

Variables will consist of the total number of information units, the number of emotional information units, and the number of neutral information units. These variables will be calculated for each participant across the two events. The dependent variables for the analyses will consist of: (1) the proportion of emotional information units of the total number of units, and (2) the proportion of neutral information units of the total number of units. As is common in coding scheme development, exact categories may change slightly based on pilot work and data obtained.

**Inter-rater agreement.** Inter-rater agreement will be assessed on a random subsample of 20% of the protocols. Two raters who are blind to the study hypotheses will code the protocols independently. Disagreements will be discussed and the codebook refined. Inter-rater agreement will be assessed using Cohen’s kappa ($k$; Cohen, 1960), which is appropriate for nominal variables, such as those being coded here (i.e., emotion or neutral), and corrects for chance agreement between raters. After reaching reliability (minimum of 80% agreement), both raters will score all remaining protocols and a third coder will resolve any disagreements. Only the variables for which the coders reach 80% inter-rater agreement will be used in analyses.

**Proposed Analyses**

**Preliminary Analyses**

Preliminary analyses will be conducted to:

(1) Identify any participants that should be excluded from subsequent analyses. Individuals with unusually poor health, medication usage known to affect memory and cognition, or a score below the cut-off criterion on the MMSE will be excluded from analyses.
(2) Examine if the sample demonstrates typical age-related findings for WAIS verbal and reasoning ability, and for the AVLT episodic memory task. Independent t-tests will be conducted to determine if there are age differences in these variables. Variables where age differences exist will be used as covariates in subsequent analyses.

(3) Determine if gender should be included as a variable in subsequent analyses. Gender differences may exist. Women may be more likely than men to report using AMs to maintain intimacy (Webster, 1995) and share AMs with more emotion (Ross & Holmberg, 1992). Thus, differences between genders for the dependent variables will be examined through independent t-tests. Gender will be included in subsequent analyses, if necessary.

(4) Identify any additional variables that should be used as covariates in subsequent analyses. A full correlation matrix of all of the measures and variables will be explored. Expected covariates include: overall marital satisfaction (measured by the QMI), the PANAS, questions from the metacognitive memory questionnaire (e.g., length of memory, vividness of memory, frequency of thinking or talking about the memory), and length of recall session. Any variables that vary by age or with the dependent variables (i.e., intimacy measures, emotional quality of memory) will be included as covariates.

The remainder of the analyses will be conducted to address the specific aims and corresponding study hypotheses. They are discussed below with general reference to covariates; covariates will be included as described above.

**Aim 1: To investigate changes in self-reported levels of intimacy as a function of recalling past meaningful relationship memories for young and older adults.**

An Age (young, old) X Type of Material (AM, NT) X Time (pre and post memory sharing) multivariate analysis of variance (MANOVA) will be conducted, including necessary covariates.
In addition, simple main effect and pair-wise follow-up comparisons will be conducted where necessary, controlling for the appropriate alpha level. Dependent variables include: intimacy scores on the PAIR and SMD for those individuals in the AM and NT condition both before and after memory sharing. Two interactions are expected. A Type of Material X Time interaction is expected and will provide support for Hypothesis 1.

**Hypothesis 1:** It is expected that intimacy will increase as a function of memory sharing, but only for those individuals remembering an autobiographical event. No change in intimacy is expected from pre to post memory sharing for those individuals remembering a narrative text passage.

An Age X Type of Material X Time three-way interaction is expected, with older adults in the AM condition showing larger increases in intimacy levels from pre to post memory sharing than younger adults in the AM condition. This will provide support for Hypothesis 2.

**Hypothesis 2:** It is expected that older adults in the AM condition will show the greatest increases in self-reported levels of intimacy as a function of recalling AMs.

**Aim 2: To examine the relation between the emotional quality of AM and the use of AM to maintain intimacy in young and older adults.**

Multiple linear regression analyses will be used to predict changes in levels of intimacy as a function of AM sharing. Predictors of intimacy levels include: the proportion of emotion information units coded from the AMs and age. The dependent variable will be the level of intimacy reported as a function of recalling AMs. Covariate measures may be included in the regression model (e.g., verbal ability, PANAS), if necessary. Two regression models will be conducted. The first model will investigate the independent effect of the emotional quality of AM on predicting changes in intimacy. Pre-memory sharing intimacy levels will be entered into
the model first, followed by the proportion of emotional information units coded from the AMs (i.e., number of emotional information units of the total information units). Results from these analyses will show that the emotional quality of the memory is predictive of levels of intimacy as a function of recalling AMs. Results from these analyses will provide support for Hypothesis 3.

**Hypothesis 3:** It is expected that AMs that are more emotional will better serve the function of intimacy (i.e., better predict increases in intimacy as a function of AM sharing).

The second regression model will investigate the effect of age on changes in intimacy as a function of recalling AMs, and whether the emotional quality of AMs mediates this relation. In the first step pre-memory sharing intimacy levels will be entered into the model first, followed by age. This will show that age independently predicts changes in levels of intimacy as a function of AM sharing. In the second step of the model, the proportion of emotion information units coded from the AMs will be entered into the model to determine if the effects of age are mediated by the emotional quality of the AMs. Results from these analyses will provide support for Hypothesis 4.

**Hypothesis 4:** It is expected that the relation between the emotional quality of AM and intimacy will differ by age. Older adults are expected to retell AMs with more emotion than younger adults. Thus, the way older adults remember and retell AMs (e.g., more emotion) will better predict the function of intimacy maintenance and result in higher levels of intimacy as a function of recalling AMs for older adults than for younger adults.

**Aim 3:** To compare the emotional quality of self-selected AMs to memory for narrative text passages for young and older adults.
An Age (young, middle-age, old) X Type of Memory (AM, NT) ANOVA will be conducted (including possible covariates). The dependent variable will be the proportion of emotional information units coded from the AMs and NT passage (i.e., number of emotional information units of the total information units). Two main effects are expected and will provide support for Hypothesis 5. A Type of Material main effect is expected to show that regardless of age, participant’s AMs will be more emotional than their memories for NT passages. An Age main effect is expected, with older adult’s memories being more emotionally oriented than younger adult’s memories, regardless of the type of material being remembered.

**Hypothesis 5:** It is expected that the participant’s AMs will contain more emotional information than their recall of the narrative text passages. Regardless of type of material, older adults’ memories will contain more emotional information than younger adult’s memories.

An Age x Type of Material interaction is expected to qualify these main effects, thus providing support for Hypothesis 6.

**Hypothesis 6:** It is expected that the age differences will be larger in the narrative text condition than in the AM condition. That is, regardless of type of material, older adults are expected to recall more emotional material, while younger adults are expected to recall emotional information only in the AM condition.
References


Using AM to Maintain Intimacy


Carstensen, L.L. (1993). Motivation for social contact across the life span: A theory of socioemotional selectivity. In J.E. Jacobs (Ed.), Nebraska symposium on motivation, (pp. 209-


Footnotes

1 Several suitable control conditions exist and others were considered. Each varied with respect to the extent to which the event was non-autobiographical, but similar to autobiographical remembering, and the extent to which it would lead to no change in levels of intimacy as a function of AM sharing. One suitable control would have been to have participants think about their spouse without remembering specific autobiographical events. This was not chosen because during thinking, autobiographical events might be accessed in the process, but not be known to the experimenter. It is expected that thinking about one’s spouse could possibly lead to increases in intimacy, thus rendering it an unsuitable control condition. Another control group that was considered was to have the participants imagine that the narrative text passages were something that they would do with their spouse in the future and then recall the event. In this instance, the event is non-autobiographical because of the future orientation, thus serving as a suitable control. It was expected however that thinking about future events with one’s spouse might lead to heightened levels of intimacy; thus, rendering this control group unsuitable for the present purposes. Both of these conditions should be considered in future research.

2 An additional measure of marital intimacy was given in pilot work: the Waring Intimacy Questionnaire (WIQ; Waring, 1984). This measure is similar in content to the PAIR, but contains 90 items rated as either true or false. The two measures are highly correlated with each other (Waring, 1984). The PAIR was chosen because it is a shorter measure (only 60 items) answered on a Likert-scale, rather than as true or false. In addition, while the WIQ showed a trend toward significance in pilot data, \( t(9) = 2.23, p = .10 \), levels of intimacy on the PAIR increased significantly as a function of AM sharing.
# Table 1

**Proposed Minority Inclusion by Gender for the Sample (N = 128)**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Native American</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of county population</td>
<td>76.4%</td>
<td>16.4%</td>
<td>5.7%</td>
<td>3.8%</td>
<td>0.2%</td>
<td>1.4%</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>64</td>
</tr>
<tr>
<td>Male</td>
<td>48</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
<td>20</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>128</td>
</tr>
</tbody>
</table>
## Table 2

### Summary of Proposed Measures

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variable</th>
<th>Measure</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screening</strong></td>
<td>Cognitive Status</td>
<td>Mini-Mental State Examination (MMSE)</td>
<td>Folstein, et al. 1975</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td>Age, race, sex</td>
<td>Demographic survey</td>
<td>Alea, 2002</td>
</tr>
<tr>
<td><strong>Controls &amp; covariates</strong></td>
<td>Self-rated health</td>
<td>Self-rated health</td>
<td>Maddox, 1962</td>
</tr>
<tr>
<td></td>
<td>Verbal ability</td>
<td>Weschler Adult Intelligence Scale (WAIS)</td>
<td>Weschler, 1981</td>
</tr>
<tr>
<td></td>
<td>Reasoning ability</td>
<td>Weschler Adult Intelligence Scale (WAIS)</td>
<td>Weschler, 1981</td>
</tr>
<tr>
<td></td>
<td>Personal affective state</td>
<td>Positive &amp; Negative Affect Scale (PANAS)</td>
<td>Watson, et al., 1988</td>
</tr>
<tr>
<td><strong>Relationship</strong></td>
<td>Relationship stability</td>
<td>Quality Marriage Index (QMI)</td>
<td>Norton, 1983</td>
</tr>
<tr>
<td></td>
<td>Intimacy</td>
<td>Personal Assessment of Intimacy in Relationships (PAIR)</td>
<td>Schaefer &amp; Olson, 1981</td>
</tr>
<tr>
<td></td>
<td>Affective quality of the relation</td>
<td>Relationship Semantic Differential Scale (R-SMD)</td>
<td>Osgood, et al., 1957</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>Memory ability</td>
<td>Auditory Verbal Learning Task (AVLT)</td>
<td>Rey, 1941</td>
</tr>
<tr>
<td></td>
<td>Self-rated memory characteristics</td>
<td>Autobiographical Memory Questionnaire (AMQ)</td>
<td>Bluck, et al., 1999</td>
</tr>
<tr>
<td></td>
<td>Emotional quality of memory</td>
<td>Codebook for the Emotional Characteristics of AM (ECAM)</td>
<td>Alea, et al., 2002</td>
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</tbody>
</table>
Figure 3.

Study Design and Procedure (N = 128)

<table>
<thead>
<tr>
<th>Preliminary Measures</th>
<th>AM Condition</th>
<th>NT Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>(30 min)</td>
<td>(26 min)</td>
<td>(26 min)</td>
</tr>
<tr>
<td>Demographics, Affect scale, Relationship characteristics &amp; quality,</td>
<td>AM 1: decision</td>
<td>NT 1: presentation</td>
</tr>
<tr>
<td>Intimacy measures, Health questionnaire</td>
<td>AM 1: recall</td>
<td>NT 1: recall</td>
</tr>
<tr>
<td></td>
<td>AM 2: decision</td>
<td>NT 2: presentation</td>
</tr>
<tr>
<td></td>
<td>AM 2: recall</td>
<td>NT 2: recall</td>
</tr>
</tbody>
</table>

Random Assignment

Post-memory Measures

(30min)

Intimacy measures, Memory characteristics questionnaire, Memory task presentation, Reasoning ability, Memory recall, Vocabulary ability, Affect scale