A TALE OF THREE FUNCTIONS: THE SELF–REPORTED USES OF AUTOBIOGRAPHICAL MEMORY

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Theories hold that autobiographical memory serves several broad functions (directive, self, and social). In the current study, items were derived from the theoretical literature to create the Thinking About Life Experiences (TALE) questionnaire to empirically assess these three functions. Participants ($N = 167$) completed the TALE. To examine convergent validity, they also rated their overall tendency to think about and to talk about the past and completed the Reminiscence Functions Scale (Webster, 1997). The results lend support to the existence of these theoretical functions, but also offer room for refinements in future thinking about both the breadth and specificity of the functions that autobiographical memory serves.

Memory research in general, and research on autobiographical memory (AM) in particular, has focused on how, how much, and how accurately, people remember their past. Despite the importance of these aspects of remembering, they do not offer a full palette for understanding human memory. Two relatively understudied areas

are memory content (Gigerenzer, 1997; Linton, 1986), and function (Neisser, 1978). Addressing the contents of memory is clearly an important area for future research and theory building. Our current work, however, grounded in an ecological approach (Graumann, 1986; Neisser, 1986), investigates the *functions* of AM. We begin by exploring the utility of the functional approach and then present a review of three broad functions of AM. Though this literature is rich theoretically, not much empirical work exists. Thus the goal of our study was to operationalize the theorized functions of AM. First, findings from the use of a new questionnaire, the TALE (Thinking About Life Experiences), are presented and discussed.

WHY TAKE A FUNCTIONAL APPROACH?

Function can have (at least) two meanings, connoting either *use* or *adaptivity* (i.e., adaptive versus maladaptive). These two meanings are related, but for now we take the simpler definition, that is, what do individuals *use* the memories of their life for? A later development in any program of research on function would be the identification of adaptive and maladaptive ways in which memory is employed in everyday life. In the current work, we do not explicitly explore adaptivity, but focus on function in terms of individuals' self–reported uses of AM.

   Various researchers have described the benefits of a functional approach to memory (e.g., Baddeley, 1987; Bruce, 1989; Neisser, 1978). The primary concern is not how well humans remember their personal past (though those features often play some role), but *why* humans remember both mundane and significant life events, often over long periods of time. Examining function provides a different and potentially complementary view of the remembering individual: the organism is not simply an information processor (emphasis is on memory capacity and veridicality) but rather an organism processing information in ecological context (emphasis is on memory utility).

THREE THEORETICAL FUNCTIONS OF
AUTOBIOGRAPHICAL MEMORY

What functions does it serve for people to remember, reflect on, and share the experiences of their lives? While different researchers have

focused on different subsets of functions, most hypothesized functions fit into one of three categories. These categories are well represented in Pillemer's (1992) formulation of AM as having directive (planning for present and future behaviors), self (self–continuity, psychodynamic integrity), and communicative (social bonding) functions. To expand this scope, we refer to these three more generally as directive, self, and social functions (Bluck & Alea, 2002).

The Directive Function. The directive function of AM involves using the past to guide present and future thought and behavior. Pillemer (1998) reviews a number of ways in which AM can be directive. For example, Cohen (1989, 1998) has argued that AM can serve as an aid to solving problems and to the development of opinions and attitudes. Baddeley (1987) argues that autobiographical memory allows us to ask new questions of old information in order both to solve problems in the present and to predict future events. Lockhart (1989) offers a similar idea, suggesting that the major function of AM is to provide flexibility in the construction and updating of rules that allow individuals to comprehend the past and to predict future outcomes. Robinson and Swanson (1990) take this idea in a more social direction, arguing that AM helps us to use our own past experience to construct models that allow us to understand the inner world of others and thereby to predict their future behavior. Data tend to be consistent with these ideas: individuals report remembering past events and the lessons they learned from them as useful in guiding present or future behavior (Bluck & Glück, 2004; McCabe, Capron, & Peterson, 1991; Pratt, Arnold, Norris, & Filyer, 1999).

The Self Function. Many theoretical formulations emphasize the function of AM in the continuity of the self (e.g., Bluck & Levine, 1998; Brewer, 1986). While these share a similarity to Pillemer's (1992) "psychodynamic function" (emphasizing the dynamic emotional use of AM), other researchers have not necessarily embraced the psychodynamic aspect. Instead, knowledge of the self in the past and as projected into the future has been seen as a critical type of self–knowledge (Neisser, 1988). For example, Conway (1996) claims that the adequacy of autobiographical knowledge depends on its ability to support and promote continuity and development of the self. Similarly, a hypothesized function of the personal past is to preserve a sense of being a coherent person over time (Barclay, 1996). Fivush (1998) describes how this coherent sense of self–over–time develops in young children, and the developmental role of the self

function has been extended to describe the emergence of the life story in adolescence (Habermas & Bluck, 2000; McAdams, 1985).

Some have argued that autobiographical knowledge may be especially important when the self is in adverse conditions that required self–change (Robinson, 1986). Regardless of imminent challenges, however, self functions, such as emotion regulation (Pasupathi, 2003) and self–concept preservation and enhancement (Wilson & Ross, 2003), have been suggested as normative and useful aspects of self–regulation across adulthood (Cohen, 1998).

The Social Function. The importance of AM in developing, maintaining, and nurturing social bonds has been noted repeatedly (e.g., Nelson, 1993; Pillemer, 1998) and even tied to potential evolutionary adaptivity (Neisser, 1988). The most basic social function AM serves is to provide material for conversation, thus facilitating social interaction (Cohen, 1998). Sharing personal memories makes one's contribution to conversations more believable and persuasive (Pillemer, 1992). Autobiographical memory also may allow us to better understand and empathize with others (Cohen, 1998). For instance, sharing personal memories can engage the listener and elicit empathic responses, particularly if the listener responds with a personal memory of a similar experience (Pillemer, 1992). Providing others with information about one's self is another function that memory serves in initiating new social relationships (Cohen, 1998). The importance that AM serves for social bonding is highlighted by the fact that social relationships can suffer when episodic remembering is impaired (Robinson & Swanson, 1990). Note that memories can be shared with those who did or did not take part in the remembered event: sharing AMs with someone who was not present provides the listener with information about one's self, while sharing memories with someone who also was present can serve an intimacy or bonding function (Fivush, Haden, & Reese, 1996).

A TALE OF THREE FUNCTIONS: THE CURRENT STUDY

The three broad functions outlined above were derived by examining theoretical work, as well as interpretations and speculations found in the introductions and discussions of empirical articles on AM. The intuitive and theoretical appeal of the three functions is clear. Only three projects, however, have examined the functions of AM empirically (Hyman & Faries, 1992; Pasupathi, Lucas, & Coombs, 2002; Walker, Skowronski, Gibbons, & Vogl, 2003). In two

related studies, Hyman and Faries (1992) explored the functions of AM. In one study, individuals were asked to report and describe past events that they had talked about often with others. In the second study, individuals generated autobiographical memories to cue words and described previous times when they had thought or talked about the memory. The results from the first study revealed that individuals talk about memories in order to share experiences, provide information and advice, or to describe themselves to others. The results from the second study suggested that some memories are used for private self functions (not shared with others) and some are used to inform others about one's self and life. The authors concluded that memory plays both self and social functions but that little support for the directive function was evident in their data.

Walker and colleagues report similar data using a somewhat different framework (Walker et al., 2003). In two studies, participants listed several autobiographical events that had occurred within the last six months. They then estimated the number of times that they had rehearsed each event for one of several reasons. Alhough the authors refer to these as reasons for rehearsal, they also might be thought of as functions of recalling memories. As in Hyman and Faries' (1992) research, in both studies the most frequent reason that people rehearsed events (recalled or retold memories) was for the purpose of talking to others (i.e., social function). Other reasons for thinking or talking about memories were non–social, including recalling the event's details or associated emotions.

A more recent study used a different (i.e., not self–report) method to examine the functions of AM (Pasupathi et al., 2002). In this work, middle–aged and older adult married couples were asked to discuss past pleasant and unpleasant topics. Couples' conversations were then coded for the functions of AM that emerged during these discussions. The functions of AM previously identified in the literature, such as using the past during conversations for planning and problem solving (directive), to explain oneself to others (self), and for persuasive reasons (social), were evidenced in spontaneous speech in these couples' conversations.

Because of the widespread theoretical and interpretive use of the concept of function, in combination with the dearth of empirical work, we designed the following study to begin examining the use of AM to serve directive, self, and social functions in everyday life. This might have been done in a variety of more sophisticated manners,

but we began with the straightforward and face valid approach of simply asking people what they use AM for (i.e., obtaining self–reports). To do this, we developed the Thinking About Life Experiences (TALE) Questionnaire. Items that represent directive, self, and social functions were created using statements and claims made in the theoretical literature reviewed above. The basic aim of the study was to examine whether the three functions that have been mentioned repeatedly in the literature would emerge in a factor analysis of the items on the TALE. To validate the obtained factor structure, we also administered the Reminiscence Functions Scale (RFS; Webster, 1993), an empirically derived scale that examines people's reasons for reminiscing about specific episodes. The TALE and RFS are discussed in more detail below, highlighting the ways in which the instruments are both similar and different.

METHODS

Participants

Participants were 167 undergraduate students (87 women and 80 men) at Duke University who ranged in age from 18 to 21 ($M = 18.44$ years, $SD = .73$). Students received course credit for participation. Substituting means for missing data can distort means and reduce correlations among variables (Gorsuch, 1983) thus, we dropped six participants with missing data from analyses, which resulted in a final sample size of 161. The sample size is satisfactory for conducting exploratory factor analysis as long as factor loadings below .40 are not interpreted (Gorsuch, 1983).

Procedure and Measures

As part of a larger study, participants completed two questionnaires: the TALE and the Reminiscence Functions Scale (RFS; Webster, 1993). All participants completed the TALE questionnaire and then the RFS.

Thinking about Life Experiences Questionnaire. The TALE is a theory–based questionnaire developed for use in this study. It assesses the three theoretical functions of AM: the directive function, the self–function, and the social function. Individual items were derived

from a review of the theoretical literature (e.g., Cohen, 1998; Hyman & Faries, 1992; Pillemer, 1992), discussion sections of empirical articles on other aspects of AM in which functions are mentioned (e.g., Nelson, 1993), and book chapters in which previous authors have alluded to AM's functions (e.g., Brewer, 1986; Neisser, 1978).

The questionnaire instructions were designed to focus not only on remembering specific episodes and events but also on how past events and larger life periods are connected with the present (i.e., not just AM but also autobiographical reasoning; Habermas & Bluck, 2000). Instructions for the questionnaire read: "Sometimes people think back over their life or talk to other people about their life—it may be about things that happened quite a long time ago or more recently. We are not so interested in the times that you think back over specific events as in when and how you bring together and connect the events and periods of your life."

To establish individuals' overall tendency for thinking about and talking about the past, participants first provide responses to two introductory questions: "How often do you think back over your life?" and "How often do you talk to others about what's happened in your life so far?" To these items, and throughout the questionnaire, responses were made on a 6–point Likert–type scale, ranging from *never* (1) to *very frequently* (6).

After these two general questions, there are 28 items assessing the three theoretical functions of AM. The stem statement for each item is "I think back over or talk about my life or certain periods of my life . . ." Table 1 lists the TALE items corresponding to the theoretically derived self (10 items), social (8 items), and directive (10 items) functions of AM. One version of the questionnaire, with items in random order, was given to all participants.

Reminiscence Functions Scale. Although the TALE and the RFS measures are unique in several ways, they also have conceptual overlap: both measure individuals' self–reported reasons for thinking or talking about some aspect of the past. Thus, the RFS (Webster, 1993) was included in the current study to assess convergent validity of the newly developed TALE. We expected some, but not full, overlap between these measures of reminiscence functions and AM functions (see Bluck & Alea, 2002; Webster, 2003).

The RFS is a 43–item measure that assesses the functions of reminiscing. Items were originally generated empirically by having participants list, in open–ended form, reasons for reminiscing. It since

TABLE 1. Theoretically Derived TALE Items for the Directive, Self, and Social Functions of AM

Item	Directive Function
Q1	When I feel that if I think about something bad that happened I can learn some lesson from it.
Q2	When I want to make plans for the future.
Q3	When I think about my future goals.
Q4	When I am facing a challenge and I want to give myself confidence.
Q5	When I want to learn from my past mistakes.
Q6	When I need to make a life choice and I am uncertain which path to take.
Q7	When I am searching for a solution to a problem.
Q8	When I want to remember how others have reacted to me in the past in order to decide how to act now.
Q9	In order to try to remember advice someone gave me because I don't know what to do.
Q10	When I want to better understand my current problems.

Item	Self Function
Q11	When something unexpected happens to me and I want to fit it into my view of my life.
Q12	When I have hurt somebody and I feel bad and I want to remind myself that I am basically still a good person.
Q13	When I am concerned about whether I am still the same type of person that I was earlier.
Q14	When I want to understand how I have changed from who I was before.
Q15	When I want to see if my life has an overall theme.
Q16	When I am concerned about whether my beliefs or values have changed over time.
Q17	When I want to understand who I am now.
Q18	When I want to reinterpret old events in the light of things that have happened since.
Q19	When I feel down and I want to make myself feel better.
Q20	When something happens to me and I want to look back to see what caused it.

Item	Social Function
Q21	When I want to make myself feel better by talking to others who have had similar past experiences.
Q22	When I want to make someone else feel better by talking to them about my similar past experiences.
Q23	When I want to introduce myself to people or to tell others more about me.
Q24	When I want to develop a closer relationship with someone.
Q25	When I want to strengthen a friendship by sharing old memories with friends.
Q26	When I hope to also learn more about that other person's life.
Q27	When I hope to also find out what that other person is like.
Q28	When I want to help someone by telling them about my own past experiences.

has been validated in reference to personality measures and the convergence of the subscales with life-phase concerns (Webster, 1995, 1997; Webster & McCall, 1999). The instructions for the RFS are: "At different points throughout their lives, most adults think about their past. Recalling earlier times can happen spontaneously or deliberately, privately or with other people, and may involve remembering both happy and sad episodes. The process of recalling memories from our personal past is called reminiscence, an activity engaged in by adults of all ages. This questionnaire concerns the why, or functions, of reminiscence . . . " The RFS has eight subscales, including boredom reduction, death preparation, identity, problem solving, conversation, intimacy maintenance (with those who have passed on), bitterness revival, and teach/inform others. The stem statement for each item is "When I reminisce it is to . . ." Participants rate how often they reminisce for each reason using a 6–point Likert–type scale that ranges from *never* (1) to *very frequently* (6).

RESULTS

The results are presented in four parts. First, the results of an exploratory factor analysis of the TALE are presented. In the next section the factors are interpreted, followed by a reporting of reliability and descriptive information on the subscales. Finally, analyses concerning convergent validity with the RFS are presented.

EXPLORATORY FACTOR ANALYSIS OF THE TALE

Exploratory factor analysis (EFA) was conducted with the 28–item TALE questionnaire to determine whether the three theoretical functions of AM would emerge. We chose to use EFA for a variety of reasons. First, the theoretical claim that there are directive, self, and social functions of AM is widespread in the AM literature, but is a relatively new assertion (see Bluck & Alea, 2002; Cohen, 1998; Pillemer, 1992) that is often implicit, not explicit, and that has been tested in very few empirical studies. Thus, without either a well–articulated theoretical model or a strong empirical foundation, a confirmatory factor analysis seemed inappropriate at this time (see Stevens, 1996, for a discussion of this issue). Instead, the EFA is used here to provide preliminary empirical evidence that can be used to further develop theory. Second, an EFA was chosen instead of the commonly used

principal components analysis (PCA) because PCA originally was developed to produce a strong first, general (principal) factor. Since we expected three factors (not a general factor), we used EFA, which allows the variance to be better distributed across multiple factors. We also used EFA because PCA attempts to explain all of the variance in a set of items (including unique and error variance), rather than only the reliable, common, shared variance among a set of items (Gorsuch, 1983).

Factors were extracted using a common factors model (principal axis) with a Promax (oblique) rotation in SPSS Version 11.0. We used an oblique rotation rather than the commonly used Varimax orthogonal rotation procedure for two reasons. First, we had no reason to believe that the factors would be orthogonal. Previous discussions about the three theoretical functions of AM suggest that they may be intercorrelated (Bluck, 2003; Conway, 2003). In fact, it has been argued that since most social science data involves correlated constructs, oblique rotation procedures are preferable (Nesselroade, personal communication). Our inspection of the simple correlation matrix confirmed that, indeed, the items are intercorrelated. The second reason for using an oblique rotation procedure, particularly Promax, is that it produces a more simple structure than orthogonal or other oblique rotation methods, thereby increasing the ease of interpretation (Hendrickson & White, 1964).

In the initial EFA, Kaiser's rule (Kaiser, 1960) of extracting factors with Eigen values > 1 suggested seven factors. Examination of the inflection point on the scree plot suggested that six factors should be extracted (Cattell, 1966). These two solutions accounted for 63.12% and 59.25% of the variance, respectively. In addition, based on sample size criteria delineated by Cliff and Hamburger (1967), a factor loading of .40 was used to identify meaningful factor loadings. Upon examining the factor pattern matrix of these solutions, not all factors were meaningful—two factors had only one or two item loadings greater than .40. Thus, a combination of Eigen value, scree inspection, and loading criteria suggested either a four- or five-factor solution.

Next, because theory suggested the presence of three latent constructs underlying responses to the TALE, we reran the EFA and forced three factors. The 3–factor solution, however, accounted for less than half the variance (44.15%). This solution was not ideal in that eight items did not load on any factor. Moreover, while the sec-

TABLE 2. Factor Pattern Matrix with Factor Loadings for the TALE Questionnaire: 4–factor EFA with Promax Rotation

	Factor Loadings			
Item	Factor 1	Factor 2	Factor 3	Factor 4
Q11 integrate unexpected	.68			
Q6 life choice	.66			
Q5 learn from error	.64			
Q20 what caused this	.58			
Q4 face challenge	.57			
Q7 problem solving	.56			
Q1 learn lesson	.55			
Q18 reinterpret past	.54			
Q9 recall advice	.53			
Q10 know problem	.50			
Q19 feel better	.49			
Q15 life has theme	.43			
Q3 future goals	.43			
Q21 others help mood	.41			
Q13 self is the same		.90		
Q14 how self changes		.64		
Q16 values changed		.60		
Q17 understand self		.49		
Q22 others feel better			.68	
Q28 help others			.62	
Q25 strong friendship			.59	
Q26 learn other's life				.66
Q27 learn new person				.49
Q24 closer relation				.49
Variance Explained	30.39%	7.11%	6.65%	5.84%

Note. Values above .40 were considered to be meaningful factor loadings; all other loadings are suppressed. Items Q2, Q8, Q12, and Q23 did not not load on any factor.

ond and third factors seemed interpretable as the self and social function of AM, the first factor was a hodgepodge of self, social, and directive items. Thus, we forced a four–factor solution to allow the variance being accounted for by the first factor to be better distributed.

The four–factor solution was parsimonious. Only four items did not load above .40 on any factor, the factor pattern matrix demonstrated simple structure, three of the four factors were ones that we predicted, and the solution accounted for 50% of the variance. The

factor pattern matrix with the variance explained by each of the four–factors is reported in Table 2.

INTERPRETATION OF THE FACTORS

As can be seen in Table 2, items loading on the first factor included all of the items derived from the literature to conceptualize directive–type functions of AM; thus, we labeled this the Directive factor. For example, the item with the highest loading on this factor (.68) involves using the past to understand how the unexpected fits into one's life. The emergence of this factor from participants' responses to the TALE seems to confirm that one function of AM is to use the past in order to direct one's present and future behavior, as well as to solve present problems, especially under conditions of uncertainty. However, examination of the items that load on this factor suggests that the Directive function may be broader than originally theoretically conceived (for a discussion, see Bluck, 2003; Pillemer, 1998). For example, two items (originally conceptualized as self and social items) that loaded on this factor asked about using the past for emotion regulation, suggesting that emotion regulation may be viewed as a certain kind of problem solving. In addition, four items that reflect autobiographical reasoning (Habermas & Bluck, 2000) about the self loaded on the Directive factor. These items reflect the sort of meaning making (Bruner, 1990) or "integrative reminiscence" (Watt & Wong, 1991; Wong & Watt, 1991) that may be necessary to update one's view of self and life so that one has a "working model" (Lockhart, 1989) with which to direct behavior. The fact that these items also load on the Directive factor suggest that meaning making also may be viewed as a certain kind of problem solving.

The items that load on the second factor seem to reflect the use of AM to assess Self–continuity. For example, the highest-loading item (.90) is highly representative of continuity: it concerns using the past to determine if one is still the same person as earlier in life. The content of the other items that load on this factor seem to similarly tie into the need to use the past to determine if one is still the same person as earlier in life.

The remaining factors seem to reflect two distinct social functions of AM and contain all the items originally written from the theoretical literature to represent the social function. We labeled one of these factors the Nurturing Relationships factor. For example, the item

TABLE 3. Factor Correlation Matrix

	Factor			
Factor	**1**	**2**	**3**	**4**
1. Directive	1.00			
2. Self–continuity	.53	1.00		
3. Nurturing Relationships	.46	.28	1.00	
4. Developing Relationships	.36	.26	.12	1.00

Note. Significance levels are not provided for factor intercorrelations.

with the highest loading on this factor assesses the extent to which people share similar past experiences in an effort to make someone else feel better (.68). The other social factor was assigned the label Developing Relationships because it seems to reflect AM's uses in developing new relationships with others. For example, the highest-loading item on this factor assesses the extent to which people use the past to try and learn more about other people (.66).

The factor correlation matrix is reported in Table 3. The matrix reveals that the Directive factor is moderately correlated with the other factors, but that the Self–continuity, Nurturing Relationships, and Developing Relationships factors are only correlated modestly with each other. This lends further evidence to the broad scope of the directive function of AM (Bluck, 2003; Pillemer, 1998).

RELIABILITY AND DESCRIPTIVES

Internal Consistency. Items for each of the four subscales of the TALE that emerged from the EFA are listed in Table 4, along with Cronbach's alphas for internal consistency of the four subscales. Cronbach's alphas indicate that the four subscales of the TALE derived from the factor analyses have good or very good internal consistency, ranging from .70 for the Developing Relationships subscale, which has only three items, to .88 for the Directive subscale, which has 14 items. If only the four items that load highest on the Directive factor were examined to make it comparable in length to the other subscales, it would have a reliability of .73. Thus, the four subscales that resulted from the four–factor EFA appear to be reliable.

Descriptives. Although the EFA does not concern mean level analyses, we present such analyses here to provide a descriptive understanding of the TALE: If a good factor structure emerged, but none of

TABLE 4. Descriptive Information for the Four TALE Factor Items and Subscales

Item	M	SD
Factor 1: Directive Function/Alpha = .88		
Q11 When something unexpected happens to me and I want to fit it into my view of my life.	3.45	1.18
Q6 When I need to make a life choice and I am uncertain which path to take.	4.14	1.30
Q5 When I want to learn from my past mistakes.	4.10	1.14
Q20 When something happens to me and I want to look back to see what caused it.	4.34	1.15
Q4 When I am facing a challenge and I want to give myself confidence.	3.96	1.26
Q7 When I am searching for a solution to a problem.	3.60	1.11
Q1 When I feel that if I think about something bad that happened I can learn some lesson from it.	3.84	1.32
Q18 When I want to re–interpret old events in the light of things that have happened since.	4.14	1.17
Q9 In order to try to remember advice someone gave me because I don't know what to do.	3.76	1.27
Q10 When I want to better understand my current problems.	3.96	1.22
Q19 When I feel down and I want to make myself feel better.	3.59	1.32
Q15 When I want to see if my life has an overall theme.	3.32	1.63
Q3 When I think about my future goals.	4.04	1.19
Q21 When I want to make myself feel better by talking to others who have had similar past experiences.	3.93	1.44
Total	**3.86**	**.79**
Factor 2: Self–continuity/Alpha = .80		
Q13 When I am concerned about whether I am still the same type of person that I was earlier.	3.98	1.39
Q14 When I want to understand how I have changed from who I was before.	4.12	1.27
Q16 When I am concerned about whether my beliefs or values have changed over time.	3.92	1.20
Q17 When I want to understand who I am now.	4.16	1.34
Total	**4.01**	**1.03**
Factor 3: Nurturing Relationships/Alpha = .76		
Q22 When I want to make someone else feel better by talking to them about my similar past experiences.	4.54	1.15
Q28 When I want to help someone by telling them about my own past experiences.	4.64	1.00
Q25 When I want to strengthen a friendship by sharing old memories with friends.	4.89	1.00
Total	**4.70**	**.85**
Factor 4: Developing Relationships/Alpha = .70		
Q26 When I hope to also learn more about that other person's life.	3.25	1.38
Q27 When I hope to also find out what that other person is like.	3.40	1.47
Q24 When I want to develop a closer relationship with someone.	4.16	1.29
Total	**3.62**	**1.08**

Note. 1 to 6 scale: 1 = Never, 2 = Rarely, 3 = Seldom, 4 = Occasionally, 5 = Often, and 6 = Very Frequently. For comparative purposes, items appear in the same order as in Table 2.

the items were ones that individuals endorsed as ways that they use AM, we would have a clean but not very useful scale. The means and standard deviations for each item and subscale are reported in Table 4. Inspection suggests that the items show adequate variability. In addition, the most highly endorsed items (on average) provide conceptual confirmation of the factor interpretation presented above. These include: using AM to see what caused something bad to happen (Directive function), using AM to understand who one is now (Self–continuity function), using AM to strengthen friendships (Nurturing Relationships function), and using AM to develop closer relationships with others (Developing Relationships function).[1]

We also examined the subscale means and describe them here using the scale level labels used by the participants. The Nurturing Relationships subscale ranked highest (M = 4.70; SD = .85) suggesting that this function is used "often." The means for the Self–continuity subscale and the Directive subscale both suggest that participants "occasionally" report using AM for these reasons. Participants report using AM for Developing Relationships least often, that is, "seldom" to "occasionally."

VALIDATION OF THE FOUR TALE FACTORS

In this section, we examine the convergent validity of the four–factor solution by relating the subscales constructed from the results of the factor analysis to overall frequencies of thinking and talking about the past, and, more importantly, to the subscales of an established measure, the RFS (Webster, 1993, 1997).

Preliminary Convergent Validity. To begin validation of our interpretation of the four TALE factors, we correlated responses on each of the four subscales derived from the TALE with the overall frequency of thinking about and talking about one's past. Correlations are presented in Table 5. Only correlations with alpha levels less than .008 (alpha determined by using Bonferroni correction) and effect sizes of at least .40 (representing 16% of the variance) are interpreted. As expected, the Self–Continuity subscale correlates with *thinking* about life and the Nurturing Relationships subscale correlates with

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1. Means for the four items that did not load on any of the factors (Q2, Q8, Q12, and Q23) ranged from 3.09 (seldom) to 4.25 (occasionally).

TABLE 5. Correlations Between the TALE Subscales and Overall Thinking and Talking About Life

	TALE Subscales			
	Directive	**Self Continuity**	**Nurturing Relationships**	**Developing Relationships**
Overall frequency of				
Thinking about life	.35**	**.44****	.16	.25*
Talking about life	.22*	.21*	**.42****	.24*

Note. Only correlations of at least .40 are interpreted for validation purposes. *$p < .008$; **$p < .001$.

talking about life. The Directive subscale and Developing Relationships subscale showed modest correlations with both thinking and talking about life. Thus, the use of each of the functions is somewhat correlated with one's overall tendency to think or talk about the past. Beyond that, however, the results also offer preliminary validation for the relative public (talking) and private (thinking) relevance of the Nurturing Relationships and Self–continuity factors, respectively.

Convergent Validity of the TALE with the RFS. Simple correlations between the four subscales of the TALE and the subscales of the RFS are reported in Table 6. Only those correlations with alpha levels < .004 (Bonferroni correction) and effect sizes of at least .50 are interpreted.

The Directive subscale correlates with two RFS subscales. The highest correlation is between the TALE Directive subscale and the RFS Problem Solving subscale (.79). This high correlation was expected and confirms the theoretical notion of a directive function that includes present problem solving (but is not completely duplicative of it). There also is a sizeable correlation between the TALE Directive subscale and the RFS Identity subscale (.63), which is not surprising. Items that assess the extent to which individuals engage in meaning making, or making sense of one's self and life, seem to fit with the meaning of the RFS Identity subscale. Webster (1995) also found overlap between the directive (RFS Problem Solving) and self (RFS Identity) functions of remembering the past while developing the RFS.

The Self–continuity subscale correlates highly with the theoretically similar RFS Identity subscale (.60), which suggests convergent validity for the TALE Self–continuity factor. Although not quite at

TABLE 6. Convergent Validity: Correlations Between the TALE and the RFS Subscales

RFS Subscales	TALE Subscales			
	Directive	Self Continuity	Nurturing Relationships	Developing Relationships
Problem Solving	**.79****	.49**	.36**	.45**
Identity	**.63****	**.60****	.31**	.39**
Conversation	.31**	.11	**.51****	.34**
Intimacy Maintenance	.42*	.24*	.35**	.21
Teach/Inform	.46**	.26*	.43**	.33**
Boredom Reduction	.25*	.14	.07	.19
Bitterness Revival	.28**	.16	.15	.24*
Death Preparation	.37**	.30**	.18	.35**

Note. Only correlations of at least .50 are interpreted for validation purposes. *$p < .004$; **$p < .001$.

the .50 cut–off, the Self–continuity subscale also correlates relatively highly with the RFS Problem Solving subscale, which again indicates the overlap between these two uses of AM.

The Nurturing Relationships subscale correlates with the RFS subscale that represents the theoretical social function of AM (Bluck & Alea, 2002), RFS Conversation (.51), clearly falling in the domain of social functions.

The Developing Relationships subscale of the TALE is correlated with one RFS subscale. Unexpectedly, this correlation is with the RFS Problem Solving subscale rather than with the social function–oriented RFS subscales. It may be that developing relationships (e.g., getting to know other people) is seen as a sort of social problem solving (e.g., deciding what to share in order to get to know someone). This relation warrants further investigation. Note that it is not surprising that the Nurturing Relationships and Developing Relationships subscales of the TALE are not highly correlated with the RFS Intimacy Maintenance subscale. The Intimacy subscale of the RFS is largely about reminiscing to maintain relationships with people who have passed away, while the TALE subscales are about nurturing and developing current relationships. In sum, three of the four theoretically derived TALE factors converge largely as expected with the corresponding empirically derived RFS subscales.

DISCUSSION

Three theoretical functions of AM, a directive, self, and social function, have been mentioned repeatedly in the literature. The aim of the current study was to examine whether those three broad functions could be reproduced empirically. As a preliminary step in that direction, we obtained self–reports from a reasonably large group of participants using the newly developed TALE questionnaire, which measures the frequency with which individuals use AM for a variety of different reasons (reflective of directive, self, and social functions). The results lend some support to the existence of the three theoretical functions, but also offer room for refinement in our thinking about the breadth and specificity of the functions of AM. The findings are discussed in greater detail below.

A TALE OF THREE FUNCTIONS?

The results of our factor analysis of the TALE suggest that: (1) the Directive function appears broader than originally conceptualized, (2) the Self function is narrower than originally conceptualized and clearly focused on self–continuity, and (3) the Social function is represented in two separate subscales. Our TALE of three functions has become, empirically, a tale of four.

The Directive Function. The emergence of a Directive factor confirms that one function of AM is to use the past in order to solve problems and to direct one's present and future behavior. The Directive factor included the items written to represent how that function has been discussed in the theoretical literature, but also included additional items. That is, these data suggest that the directive function of AM may be broader than originally conceived. This result fits with the thinking of Pillemer (1998, 2003). He has discussed the guiding power of the specific episode, suggesting that individual personal memory episodes can play strong directive roles in people's lives in a variety of different ways (e.g., as anchors for personal values, as originating events for chosen life directions, as turning points that redirect one's life path). Thus, given Pillemer's reasoning, the Directive subscale we identified not only encompassed specific problem solving and making future goals and plans but also drew in items that represent meaning making about one's life trajectory. That is, the Directive subscale also included items that concern updating or reinterpreting previous events in the light of new information and recalling

events in order to understand what caused them. Such items reflect the need for the individual to have a reasonable current working model of how and why events occur and what they mean. That is, people may be able to use AM most effectively to direct present and future behavior if they periodically update and refine the meanings and causes for past events. This is consistent with Baddeley's (1987) reasoning. He argued that the directive function of AM allows us to ask new questions of old information in order to solve problems in the present and to predict future events. We had expected that the Directive function that would emerge in the present study would largely concern the present problem–solving and future prediction aspects. The results suggest that the Directive function also involves making sense of the past so as to have the best "old information" available to use in directing one's present and future.

Convergent validity and descriptive information provide further interpretative value. This Directive subscale of the TALE dovetails nicely with the empirically derived RFS Problem Solving and RFS Identity subscales. In early work, Webster (1995) found that Identity and Problem Solving were one factor. Only in a later version of the RFS (Webster, 1997) were these divided in two. The overlap of Identity and Problem Solving is clear in their joint relation to the Directive factor found here. This only reinforces the notion presented above, that the Directive function does not simply include problem solving or making goals and plans. It seems also to include the use of autobiographical reasoning (Habermas & Bluck, 2000) in order to update current views of one's biographical self. Finally, the descriptive data suggest that individuals endorsed using the Directive function "seldom" to "occasionally," on average. Thus, people are not constantly drawing on the past to guide the present and future, but they do use it to serve that function when needed. Alternatively, the Directive function is used more than occasionally, but this process (particularly the autobiographical reasoning aspect) goes on rather automatically and is thereby not well–represented in self-reports.

The Self Function. The Self factor that emerged from our analyses was a rather circumscribed one. It did not involve affect regulation, or more general meaning making, as has been suggested in the literature—instead, it focused squarely on self–continuity. In some ways this is unsurprising. Self–continuity is probably the most commonly referred to self function in the theoretical literature (e.g., Brewer, 1986; Conway, 1996; Fivush, 1998; Neisser, 1988). The items repre-

senting this function all concerned who I am now, if and how I have changed, and how I have stayed the same over time. Together, these point clearly at a self function of AM that allows individuals to have and maintain a biographical identity (e.g., McAdams, 2001) and to be able to maintain a coherent self–concept across an entire lifespan (Cohen, 1998), even in the face of developmental change and life events.

Convergent validity with the RFS showed significant overlap, but not duplication, of the RFS Identity subscale. Thus, it appears that whether individuals are asked to consider why they reminisce about individual episodes (as they are in the RFS) or they are asked to consider why they think back over and try to integrate past life periods with their present life, self–continuity and identity maintenance emerge as central uses of AM. In addition to convergence with the RFS, the Self function was related more strongly to global ratings of thinking about one's past than to talking about it. Of course, the functions of AM may be served through privately remembering and considering past events, or through sharing them with others, or both. Moreover, it appears that the endorsement of the Self function as important, at least as measured by the TALE, occurs in conjunction with a person's overall tendency to think about his or her past. This private, evaluative recall and consideration of one's past has been referred to as "life reflection" that may potentially lead to self-insight and, in some cases, self-growth (Staudinger, 2001).

The Social Function. What we had conceived of as a unitary Social function of AM seems actually to be best reflected as two social functions: Developing Relationships and Nurturing Relationships. Though this finding suggests four empirical functions, the conceptual closeness of these two social functions makes us cautious when interpreting these findings. Each of these factors also had the minimum number of items allowable (i.e., three) to be considered a factor (Cliff & Hamburger, 1967). The two factors may have formed because the items that load on each of the factors reflect different phases in relationships. Thus, we have learned from these analyses that the Social function may have two main manifestations: learning about another's life in order to form a new relationship and maintaining warmth (e.g., empathy) and social bonding in existing relationships. Future research could examine how individual variables, such as gender, personality, and age, might dictate the extent to which initiating versus maintaining relationships are important so-

cial functions of AM. For example, theories of socio–emotional processes across the lifespan suggest that initiating relationships is particularly important in young adulthood, but that selectively maintaining close social bonds is more the norm in later life (Carstensen, 1993). Our reliance on a younger adult sample in this study may have overrepresented the distinct importance of forging new relationships.

These two social factors showed differing relations with the relevant RFS subscales. Developing Relationships did not show the same clear relation to expected social indicators as did Nurturing Relationships. Nurturing Relationships clearly was related to the RFS–Conversation subscale and also to an overall tendency to talk about one's past with other people. Nurturing Relationships also was the most highly endorsed subscale. On average, people reported using AM to nurture relationships "occasionally" to "often." Thus it appears that the most central social function of AM is social bonding in existing relationships. How and how often individuals use AM to initiate or develop new relationships needs to be followed up in future work to understand if it is indeed a separate, and well–utilized, function of AM.

LIMITATIONS OF THE CURRENT STUDY

The current study examines three broad functions of AM that have, to this point, received largely theoretical attention. Our method was to have individuals simply report on their uses of AM to serve a variety of ends. The accuracy and validity of such reports requires that people must be aware of, and insightful about, how they use AM. Future research needs to examine more fully the extent to which people are able to reflect in this manner. Moreover, there may be other functions of AM of which individuals are not aware, and there may be individual differences in people's awareness of the extent to which memory serves important functions in their everyday life. Thus, we believe that our data is reasonable for what it is, but it clearly can only assess the functions of AM that individuals know or can recognize that they use. Other methods that assess function less directly could add more pieces to this developing picture.

One possible critique of these findings is that the overall factor solution only accounted for 50% of the variance. However, this was our first attempt to assess the theoretical AM function constructs. Given

that this was an initial attempt, it is gratifying that the results of the factor analysis showed some success in mapping the items that we generated from the literature, onto the broad theoretical constructs. Recall that these items were not designed to cohere nicely and tap three functions of AM. Instead, we used the approach of gathering ideas for items wherever we could find mention of proposed functions in the theoretical literature. Given that the items were derived in this manner, the variance explained is reasonable. In future scale development, subscales can be "built on" to improve their measurement qualities.

Another issue with the current study is that we set out to see whether the three broad functions cited in the literature could be verified empirically. However, this does not preclude the possibility that there are functions of AM beyond the three that drove this investigation (Bluck, 2003). For example, recent studies of how emotion regulation occurs during memory sharing suggest that emotion regulation may be a separate function of AM (Pasupathi, 2003). It also is unclear whether self–continuity is the only important self function. A series of studies have shown that self–enhancement (e.g., Wilson & Ross, 2003) may also be a function of AM (though this still falls within the broad category of self functions). Thus, we do not claim to have an exhaustive list of functions represented here. As the literature expands it may be that other functions of AM beside the basic directive, self, and social come to light.

FUTURE DIRECTIONS

Research on the functions of AM can take many forms (see Bluck & Alea, 2002). As mentioned above, using methods that do not rely on self–reports is crucial (for an example, see Alea & Bluck, 2003). Within the realm of self–report, however, one direction we are pursuing is to use the findings from the current data to revise and update the TALE and to administer it to a larger, and age diverse, sample. Based on the EFA obtained in the current study, and with the larger sample size, confirmatory factor analyses will be conducted to verify the existence of the factors reported here. In addition, collecting the TALE from both older and younger adults will allow us to examine the age invariance of the factor structure across these two groups. One aim in further developing the TALE in this manner is to produce

a reliable tool for measuring the self–reported functions of AM across the adult lifespan.

More generally, future research is needed to address the many questions left about AM, as it operates at the interface of cognition and social process. In line with the questions raised by Skowronski and Walker (2004), future studies need to address the relative importance of the social and non–social functions of memory, the ways in which social processes might both help and hinder the functions that memory serves, and how the cognitive and phenomenological characteristics of memories affect their presentation in social contexts. Pasupathi (2001) has discussed the interplay of social and memory processes, pointing out that how we talk about and retell memories, and who we have as listeners, may affect how memories are constructed, reconstructed and recalled over time. Of course, this ultimately would affect the functions that those memories serve.

Our own theoretical work (Alea, & Bluck, 2003) also addresses AM as a cognition occurring in social context. In an effort to stimulate and guide empirical work, particularly within a functional framework, we developed a conceptual model of the social functions of autobiographical memory across the lifespan. The model delineates the processes and variables involved when AMs are shared to serve social functions. Components of the model include: lifespan contextual influences, the qualitative and cognitive characteristics of memory (emotionality and level of detail recalled), the speaker's characteristics (age, gender, and personality), the familiarity and similarity of the listener to the speaker, the level of responsiveness during the memory-sharing process, and the nature of the social relationship in which the memory-sharing occurs (valence and length of the relationship). We argue that each of these components influences both the type of social function served (e.g., intimacy, empathy) and the extent to which social functions are adaptively served. In short, current models and theoretical work in the recent literature (Alea & Bluck, 2003; Pasupathi, 2001; Skowronski & Walker, 2004) offer a rich array of possibilities for empirically examining the functions of AM in social context.

CONCLUSION

Exploring AM from a functional perspective is necessary if we are to embrace the ecological roots from which this field has sprung. In the current work, we have complemented theory by presenting an em-

pirical tale about the functions of autobiographical memory. Though it is a modest attempt, the data presented here provide preliminary support for directive, self, and social functions that have been talked about in the literature since at least the 1970s, but have not often been put to empirical test.

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