13. A. G. Forgione and T. X. Barber, A Strain Gauge Pain Stimulator, *Psychophysiology, 8*, pp. 102-106, 1971.
14. H. Leventhal, D. Brown, S. Shacham, and G. Engquist, The Effects of Preparatory Information about Sensations, Threat of Pain, and Attention on Cold Pressor Distress, *Journal of Personality and Social Psychology, 37*, pp. 688-714, 1979.
15. K. D. McCaul and C. Haugtvedt, Attention, Distraction, and Cold-Pressor Pain, *Journal of Personality and Social Psychology, 43*, pp. 154-162, 1982.
16. T. A. Ahles, E. B. Blanchard, and H. Leventhal, Cognitive Control of Pain: Attention to the Sensory Aspects of the Cold Pressor Stimulus, *Cognitive Therapy and Research, 7*, pp. 159-178, 1983.
17. M. J. Stevens, K. S. Pfost, and B. J. Rapp, Modifying Acute Pain by Matching Cognitive Style with Cognitive Treatment, *Perceptual and Motor Skills, 65*, pp. 919-924, 1987.
18. S. M. Miller, Monitoring and Blunting: Validation of a Questionnaire to Assess Styles of Information-seeking under Threat, *Journal of Personality and Social Psychology, 54*, pp. 345-353, 1987.
19. S. Folkman and R. S. Lazarus, If It Changes It Must Be a Process: A Study of Emotion and Coping during Three Stages of a College Examination, *Journal of Personality and Social Psychology, 48*, pp. 150-170, 1985.
20. R. S. Lazarus, The Costs and Benefits of Denial, in *Denial of Stress*, S. Breznitz (ed.), International Universities Press, New York, 1983.
21. D. A. Williams and B. E. Thorn, Can Research Methodology Affect Treatment Outcome? A Comparison of Two Cold Pressor Test Paradigms, *Cognitive Therapy and Research, 10*, pp. 539-545, 1986.

Direct reprint requests to:

Michael J. Stevens
Department of Psychology
Illinois State University
458 DeGarmo Hall
Normal, IL 61761-6901

IMAGINATION, COGNITION AND PERSONALITY, Vol. 11(3) 233-257, 1991-92

AN EXPERIMENTAL INVESTIGATION OF SPECIFICITY AND GENERALITY IN MEMORY NARRATIVES

JEFFERSON A. SINGER
Connecticut College
New London

KATHIE HALBACH MOFFITT
University of Connecticut
Storrs

ABSTRACT

Research in memory and personality has distinguished between memory narratives of specific events and summaries of many events blended together. This differentiation has been linked to both the hierarchical organization of memory and to individual differences in personality. Four experiments, with 506 subjects, were conducted to demonstrate that this single event/summary memory narrative distinction could be formalized and reliably scored, using both written and spoken memory narratives. Mean interrater agreement was 93 percent, Kappa = .78. The mean frequency of recall of single event memory narratives was 78 percent, summary memory narratives, 22 percent. It was also demonstrated that a request for personally significant memories relevant to one's self-understanding increases the number of summary memory narratives retrieved. Summary and single event memories were not significantly different in affective quality.

The investigation of the content and organization of autobiographical memory may provide information about individual differences in personality, as well as help to build a more general model of how cognition and personality interact [1-6].

The relationship of personality to memory content has been studied by Adlerians [7-11], ego psychologists [12-17], and, more recently by personologists [2] and social psychologists [18].

Interest in the organization of memory and its relationship to personality also has a long history. Since Rorschach's [19] initial emphasis on the individual's perceptual organization of an ambiguous stimulus as a window into personality, clinical/personality psychologists have intermittently discussed information processing style as either a foundation or product of personality [20-25]. Shapiro [26], J. L. Singer [4], and Mosak [10], among others, have suggested that a more global and summarizing style of encoding, storing, and retrieving information may reflect a defensive strategy of handling painful or threatening information. Bruhn specifically has proposed that a tendency to collapse several distinct events into a generic or summarized memory may defend against specific single memories associated with unpleasant feelings [27]. In an earlier study, Hanawalt and Gebhardt found that single event memories of early childhood were rated more unpleasant than summarized memories [28].

DEPRESSED SUBJECTS AND MEMORY ORGANIZATION

More recently, Williams and colleagues, in a fascinating series of studies have demonstrated that depressed patients differ from controls in their capacity to recall specific memories of positive events [29-31]. They are slower and require more effort to move from general positive memories to specific positive events. Depressed individuals may be less oriented to positive event cues either at encoding or retrieval. The subsequent unavailability of these cues may reduce their capacity to move from more generalized categories of positive memories to specific single events.

Working from a different theoretical orientation and using a different methodology, McAdams, Lensky, Daple, and Allen found a similar effect in depressed subjects [3]. Subjects generated a series of positive and negative memories and then divided up the memories into self-derived categories. According to Tomkins' script theory, normal subjects would tend to find multiple variations in their positive experiences, while reducing their negative experiences into a few generalized categories [32]. McAdams found that depressed subjects did just the opposite. They generated fewer and more general categories for their positive memories, while showing more nuance and variation in their categorization of negative memories.

Both the Williams and McAdams findings suggest that either transient depressed mood or more trait-like depression may influence or be influenced by the organization of positive and negative memories in autobiographical memory. Specifically, depressed subjects may differ from normal subjects in their relative abilities to recall and describe single event vs. summarized memories of positive experiences.

HIERARCHICAL MODEL OF MEMORY

Since these researchers are suggesting that variation in the specificity of autobiographical memory may be linked to individual differences in affect and personality, it is important to examine how more general models of memory might accord with this perspective. Recently, several researchers have suggested a model of memory that organizes information at varying degrees of abstraction [33-43].

Williams selected Reiser's hierarchical model of memory, in particular, to help account for his series of findings. Through analysis of transcripts of subjects' tape-recorded memory searches, Reiser was able to demonstrate indexing strategies subjects use to store memories [36, 37]. Drawing upon the work of Tulving [39, 40], Schank [41], and Kolodner [42, 43], he proposed that the most common generic context for memories is an activity ("going to work," "socializing with friends," "eating at a restaurant," etc.) and that specific memories are indexed by details (e.g., participants, time periods, locations, motivations) that differentiate one particular instance of an activity from another. Williams has borrowed from this model to suggest that the depressed individual may become stuck at the more general "activity" level of positive experience and fail to reach the indexed specificity of unique positive events.

Brewer reviewed a variety of the cognitive science studies examining memory organization [44]. He noted that instructions varied in whether the memory requested should be of a specific incident or a summary of a particular time period. There is the risk that researchers' inferences about memory organization may be, in part, a function of the instructional sets they have provided.

THE PRESENT STUDIES

Two very different branches of psychology, clinical/personality psychology and cognitive science have converged on an important observation about the organization of memory. When asked to recall autobiographical memories, subjects seem to differ along a continuum of specificity of memory recall, ranging from broad summarized memories ("The whole time growing up I . . . ") to specific single event memories ("I remember the day that I . . . "). Cognitive scientists argue that these differences in memory narrative may reveal important information about the structure of memory, while clinical/personality psychologists suggest the summary/single event distribution may reflect a defensive style or play a role in depression. Since these are ambitious claims for the value of distinguishing between specific single event memories and summary memories, the current investigation was designed to demonstrate that this distinction can be experimentally isolated and reliably scored in a large normative college-age sample.

Four experiments were conducted to determine mean percentages of single event and summary memories in a non-clinical sample. Given Bruhn's and others'

proposal that summary memories may be more positive and defensive in affective tone, subjects' affective responses to single event and summary memories were also recorded.

Keeping Brewer's caution in mind [44], the effect that different instructional sets might have upon percentages of single event and summary memories was also evaluated. One conceptual point is important to add. Each of the researchers discussed infers memory organization from analysis of subjects' verbal protocols (whether in written or spoken form). Barsalou has addressed this potential complication explicitly [33, p. 217]:

> It is important to bear in mind, however, that people may employ various narrative styles when describing events from their lives. These narrative styles may in some cases be retrieval strategies that do not reflect underlying memory organization but instead reflect various cultural and linguistic conventions.

For this reason, it would be more precise to talk about distinctions in single event and summary memory narratives, as opposed to presuming the verbal product is the memory itself. To the personality psychologist, how one presents a memory to oneself or to others may be just as important as the actual form in which the memory is stored. Yet, as Barsalou cautions, the presentation of this memory narrative may be due to many extra-person factors (including the specific wording of the memory request, the content of the memory itself, and the person to whom the memory is being narrated). Three different sets of instructions for eliciting autobiographical memories were employed, including a new technique, "the self-defining memory task" [45]. This memory request was meant to be highly self-involving and not unlike the kind of request for a memory one might experience in a therapeutic encounter or in an intimate conversation. It was hypothesized that this kind of self-descriptive task might cause subjects to generate a greater proportion of summary memory narratives in an attempt to convey a "larger picture" of themselves. Memory research might then stop at a more intermediate level of analysis rather than continue to specific indexed events.

Finally, studies in memory organization have not directly investigated the effect of writing down one's memory compared to speaking one's memory aloud. It was possible that spoken narration of autobiographical memories might produce different percentages of single event/summary memories compared to requests for written memories.

EXPERIMENT 1

This first experiment tested the reliability of the memory organization scoring system and examined the percentages of single event and summary memory narratives generated when minimal instructions are given to subjects. In the

experiments performed by Reiser et al. [37], requests for a "memory about a specific time when you . . ." yielded a high number of single event memory narratives compared to summary memory narratives. On the other hand, Barsalou's request that individuals recall events from their summer vacation yielded on average 60 percent summarized events and 40 percent specific events [33]. In this experiment, we attempted to avoid instructions that pointed either to a specific event or called attention to a particular time period. Our only qualification on the request was that the memory be from at least one year ago to insure that we would not receive extremely recent or trivial memories.

Method

Subjects — Seventy-four Yale University undergraduates (29 males, 45 females, mean age = 19.68) enrolled in a Personality class participated in a class exercise.

Measures — Subjects received a memory request form. On one side, the form asked subjects simply to "recall a memory from at least one year ago." On the other side, subjects gave 0-6 ratings of their current emotional responses to the memory for 10 primary emotions—happy, sad, angry, fearful, surprised, ashamed, disgusted, guilty, contempt, and interested [46], plus pride and embarrassment. Subjects also rated the vividness of the memories and noted how many years ago the memory took place.

Procedure — The experimenter was introduced to the subjects as a guest lecturer at the beginning of a regularly scheduled class. Prior to delivering his lecture, he explained he would like to conduct a brief study in which each subject wrote down a memory on the sheet he provided. Each subject received a consent form and a memory request form. Subjects wrote down their memories on the front of the sheet in paragraph form. When they finished writing down the memory, they turned over the sheet and filled out their emotion, vividness, and years ago ratings. After all the subjects had completed the task, the experimenter collected the memory request forms. Subjects varied in the length of time they took to complete the task, but all subjects were done within 15 minutes.

Scoring the memory narratives — Previous articles that invoked a single event/summary distinction were consulted to determine appropriate criteria for scoring the memory narratives. While Barsalou [33], Hanawalt and Gebhardt [28], and Williams and Broadbent [30] all distinguished between these narrative types, they did not offer any standardized scoring guidelines for other researchers to follow. Hanawalt and Gebhardt defined the difference simply by asking subjects to recall a memory that happened only one time or repeatedly.

Williams and Broadbent timed subjects' latencies to find a specific memory. Their instructions were, "Can you think of a specific time—one particular

episode"? [30, p. 144]. Since some subjects, even after these directions and additional prompts, could not find a specific memory, the authors used two independent judges to allocate the memories to general/specific categories. While the specific criteria for this decision are not stated, the subject's ability to give details about a date, day of week, or time of day was used as a guideline to determine specificity [30, p. 145].

Barsalou [33] had raters divide subjects' recollections of events from their summer vacation into three categories relevant to the current investigation [33, p. 200]. The summarized event was a statement that blended two or more events of the same kind, such as "going to beaches" or "playing golf." The specific event was a single event of no more than a day's time. Extended events were specific events that lasted longer than a day, were not continuous, and were of some significance to the subject ("I took a trip to Italy," "I went on a diet").

In creating our scoring manual, we drew on these previous efforts to write up a more formal and extensive definition of the single event and summary memory narrative types. Relying upon several hundred memories collected as pilot data, we also tried to develop some inductive distinctions between the most common narrative types we observed. After writing up preliminary criteria, the two co-authors tested them by scoring a set of pilot memories independently. Percentage of agreement was evaluated and the scoring criteria further modified to reduce disagreements. While several nuances of memory narratives were intriguing and potentially meaningful, they could not be scored with enough reliability to warrant inclusion in the final scoring manual. For example, we attempted to score an extended episode distinction based upon Barsalou's extended event category, but ultimately found that most extended events either contained enough specific detail to be scored as single event memory narratives or so little detail that they were easily identifiable as summary memory narratives.

Once the co-authors had reached a 90 percent or better level of agreement in distinguishing single event and summary memories, two undergraduate psychology students, naive to the hypotheses of the study, were asked to read and apply the scoring guidelines. These two raters then worked with the same set of pilot data and were evaluated for percentage agreement. Based upon observation of their errors and their suggestions, the scoring guidelines were further modified. Once the raters reliably agreed at a better than 90 percent level, the scoring criteria were no longer modified and the raters were presented with the actual data set of seventy-four memories.

In each of the scoring systems used by the previously cited authors, only interrater reliabilities or percentage of agreement of raters were reported. Neither of these statistics takes into account the base rate of actual cases that fall into a particular category. If there is a high percentage of cases that fall into a given category, this may inflate the reliability of the raters' judgment of that category.

To correct for this, the Kappa statistic was employed to evaluate rater agreement beyond chance occurrence [47].

Table 1 presents the definitions of the single event and summary memory narratives with their scoring criteria. While both single event and summary memory narratives were divided into subtypes to help identify them, the raters were not asked to make these fine-grained distinctions. In the scoring manual, each definition was accompanied by several samples of each type of memory.

Table 1. Excerpt from the Scoring Manual for Identifying Single-Event and Summary Memory Narratives

Single Event Memory Narrative — A sequence of actions or images, identifiable as an unique occurrence and located in a discrete moment of time in an individual's life.

> Two years ago I got into an awful fight with my father. I said I couldn't go to an acolyte picnic because I had to study for exams and he said I just had to go. So we fought . . . for about 1/2 hour until we both had forgotten about the picnic . . . it became purely a power struggle. Finally I ran across the room, came within an inch of his face and cursed him . . . and he smacked me. It didn't hurt, just surprised me. He sat down and began to cry, so did I and I felt awful because I had driven him to do it and I knew it.

Summary Memory Narrative — The defining feature of a summary narrative is its lack of a discrete connection to a particular moment in time. It locates events in larger time frames and/or blends unique events into an amalgam meant to represent all of its constituent experiences. If a single event is mentioned, it is mentioned only in passing, without specific detail or imagery, and is subsumed by a larger generalized narrative.

There are two major types of summary memory narratives — The "generic" narrative:

> When I was very young, 4 or 5, my mom made me eat green beans. I could not stand to eat them. So whenever I had to, I gave an extremely horrible tantrum. Because of my reaction, my mom would rock me in the rocking chair and feed me my green beans. Today, however, I love green beans.

and the "eventless" narrative:

> I broke up with my boyfriend about 2 years ago—this was very influential in my life because he was the first boyfriend I was really in love with. We dated for almost a year and shared everything together—when he left, my life completely changed.

Results and Discussion

Single event and summary memory narratives — The interrater agreement for the scoring of single event and summary memory narratives was 92 percent, Kappa = .68. Single event memory narratives were employed 86 percent of the time, while summary memory narratives comprised 14 percent of the responses. The mean number of words in the memory narratives was 87.23.

Using a minimal cue for memory recall, the number of single event memory narratives far outnumbered the summary memory narratives. This finding resembles the ratio of single event to summary memories reported by Reiser et al. [37] and is opposite to the high number of summarized memories found by Barsalou [33]. Although our scoring system collapsed extended event and single event memories into one category, this difference still would not account for the much lower number of summarized memories produced by subjects in this experiment. It is indeed possible that the omission of a request for a specific time period from which the memory should be selected reduced subjects' tendency to blend together activities into a summarized narrative. Such a finding raises the question of how much instructional sets can affect the apparent "structural" organization of memory systems.

Table 2. (Experiment 1)
Factor Analysis of the 12 "Emotion about Memory" Ratings

Variance	Factor 1 (Embarrassment) (41%)	Factor 2 (Angry Contempt) (12%)	Factor 3 (Positive) (11%)	Factor 4 (Fearful Surprise) (9%)
Happy			.73	
Sad				
Angry		.76		
Fearful				.76
Surprised				.78
Ashamed	.85			
Disgusted				
Guilty	.76			
Interested			.59	
Embarrassed	.86			
Contemptful		.87		
Proud			.80	

Note: Only items loading .4 on one and only one factor retained; Sad and Disgusted failed to meet this criteria. Total Variance accounted for was 72 percent.

Emotional quality of memories — The emotion ratings for the memories were factor analyzed using a principal components method. Only factors with eigenvalues greater than 1 were retained. Items that loaded .40 or greater on one and only one factor were combined and averaged for each factor to create new composite variables. Table 2 displays the loadings of the items and the names of the new emotion variables.

Given that subjects' instructions did not restrict them to certain numbers of positive and negative memories, any means for a given emotion rating of a memory would average memories of widely varied emotional content, producing a value that would mask extremes of positive and negative emotions. Accordingly, Table 3 presents the percentage of memories for each emotion factor that received a rating of 3 ("a moderate amount") or greater on the 0-6 rating scale (some memories were rated 3 or greater for more than one factor). In all, sixty-one of the seventy-four memories (82%) received a rating of 3 or greater on at least one of the four emotion factors with positive memories (55%) dominating the other three emotion factors. Sixty-four of the seventy-four memories (86%) were rated 4 or above for vividness on the 0-6 scale. Despite minimal instructions, subjects were able to recall memories of strong emotional value and vividness.

A MANOVA, comparing summary memories to single event memories on the four emotion factors, vividness, and years ago, revealed no significant differences (Wilks's L = 0.91, $F(6,67) = 1.15$, ns).

EXPERIMENT 2

In contrast to Experiment 1's minimal request, Experiment 2 looked at a more specific memory request that created a more meaningful context for memory recall. Given recent interest in personality as a "life story" [48] and the literature of the self as a potent organizing influence on memory [49-53], we created the

Table 3. (Experiment 1)
Percentage of Memories with Ratings of 3 or Greater for the Four Emotion Factors (0-6 scale)

Emotion Factors	
Positive emotion (interested, proud, happy)	41/74 (55%)
Embarrassment (embarassment, shame, guilt)	6/74 (8%)
Angry contempt (angry, contempt)	13/74 (18%)
Fearful surprise (fearful, surprise)	16/74 (22%)
Mean Vividness — 4.66	
Mean Years Ago — 4.11 (range 1-17)	
(N = 74)	

"self-defining memory" request. It was predicted that since a request for generalization is implicit in the self-defining memory task, there would be a higher percentage of summary memory narratives than in the previous experiment. It was also hypothesized that this more personally involving and evocative memory request would produce memories of even greater emotional intensity and personal importance.

Method

Subjects — 105 Connecticut College undergraduates from an Introductory Psychology class participated (36 males, 69 females, mean age - 18.65).

Measures — Table 4 indicates the criteria used to describe a self-defining memory to subjects. The same emotion, vividness, and years ago ratings were included on the back of the self-defining memory request form.

Procedure — The self-defining memory request forms were distributed to subjects in groups of twenty during their laboratory sections of Introductory Psychology. Subjects again ranged widely in the time they took to finish writing

Table 4. (Experiment 2)
Instructions for the Self-Defining Memory Request (Excerpted)

A self-defining memory has the following attributes:

1. It is at least one year old.
2. It is a memory from your life that you remember very clearly and that still feels important to you even as you think about it.
3. It is a memory that helps you to understand who you are as an individual and might be the memory you would tell someone else if you wanted that person to understand you in a more profound way.
4. It may be a memory that is positive or negative, or both, in how it makes you feel. The only important aspect is that it leads to strong feelings.
5. It is a memory that you have thought about many times. It should be familiar to you like a picture you have studied or a song (happy or sad) you have learned by heart.

To understand best what a self-defining memory is, imagine you have just met someone you like very much and are going for a long walk together. Each of you is very committed to helping the other get to know the "Real You" . . . In the course of conversation, you describe a memory that you feel conveys powerfully how you have come to be the person you currently are. It is precisely this memory that constitutes a *self-defining memory*.

out the memories and complete the rating scales, but the majority finished within 15 minutes.

Results and Discussion

Single event and summary memories — The interrater agreement on single event/summary memory narratives was 93 percent, Kappa = .80. Single event memory narratives comprised 76 percent of the total, while summary memory narratives accounted for 24 percent (compared to 86% and 14% in experiment 1). A MANOVA once again revealed no significant differences in the emotion or other ratings between the single event and summary memory narratives (Wilks' $L = 1.14$, $F(6, 98)$ = ns.).

The self-defining request did increase the proportion of summary to single event memory narratives, though not to the magnitude expected. In both experiments, most subjects, regardless of instructions, elected to use a single event memory narrative to describe their memories.

Emotional quality of memories — Table 5 displays the percentage of memories for which ratings on the four emotion factors were 3 or greater. Contrary to predictions, subjects did not show more emotional intensity in response to the self-defining request compared to the "recall a memory" task. Seventy-seven of the 105 memories (73%) received ratings of 3 or greater on at least one of the four emotion factors. This figure compares to 82 percent in experiment 1. As Table 5 indicates, there was a slight shift toward less positive and more negative emotion ratings compared to experiment 1. Comparing vividness of the memories for the two experiments, subjects in experiment 2 rated 99/105 memories (94%) as 4 or greater in vividness, while 86 percent did the same in experiment 1. The actual vividness means were 4.66 for experiment 1 and 5.12 for experiment 2. Subjects also elected to write much longer memory narratives in experiment 2 (mean

Table 5. (Experiment 2)
Percentage of Memories with Ratings of 3 or Greater for the Four Emotion Factors (0-6 scale)

Emotion Factors	
Positive emotion (interested, proud, happy)	47/105 (45%)
Embarrassment (embarassment, shame, guilt)	15/105 (14%)
Angry contempt (angry, contempt)	23/105 (22%)
Fearful surprise (fearful, surprise)	24/105 (23%)

Mean Vividness — 5.12
Mean Years Ago — 4.50 (range 1-15)
(N = 105)

number of words = 118.76 vs. 87.23 in experiment 1). Overall, the emotion rating results provided only mixed evidence that the self-defining request produced significantly more emotional and intense personal memories than a simpler request for "any memory."

EXPERIMENT 3

It is possible that the change in percentages of single event and summary memory narratives between experiment 1 and experiment 2 was due to factors other than the self-defining memory request. In addition to asking for a personally meaningful memory, the memory request in experiment 2 was more detailed and specific. It may have created a set for subjects to find more complex and lengthy memories, independent of the self-defining aspect of the task. It may also have encouraged subjects to use more generalization or abstraction in them.

In experiment 3, an effort was made to create an autobiographical memory task that would match the self-defining memory request in detail and specificity. However, the autobiographical memory task made no explicit request that the memory retrieved have any particular emotional or personal significance. It was hypothesized that the self-defining memory request would still lead to more summary memory narratives than the autobiographical memory request. However, there should be no difference in the length of the memory narratives for the two conditions.

Method

Subjects — Two-hundred-twenty-seven undergraduates (119 males, 103 females; 5 failed to specify sex) from an Introductory Psychology class at Yale University participated. The mean age was 18.70 years. There were 109 subjects (51 males, 56 females) in the Self-defining Memory condition and 118 subjects (68 males, 47 females) in the Autobiographical Memory condition.

Measures — The self-defining memory request was repeated from Experiment 2. The criteria for the autobiographical memory request are listed in Table 6. Attention was given to match the wording and format of the self-defining memory request as closely as possible. Subjects filled out the same emotion, vividness, and years ago ratings as in the previous experiments. However, they were also asked to rate how important the memory was to them. This additional item was included to determine if the self-defining memory request would evoke memories of greater personal significance for the subjects.

Procedure — The experimenter randomly distributed the two types of memory requests throughout the lecture hall and asked subjects to fill out their memories. They were encouraged to remain silent and not discuss the task with their classmates until all subjects were finished. Subjects recorded their memories and completed their ratings within 15 minutes.

Table 6. (Experiment 3)
Instructions for the Autobiographical Memory Request

The autobiographical memory should have the following attributes:

1. It is at least one year old.
2. It is not something you read about or heard about through the media. It should be a memory that happened to you and that you actually recall, not a memory from your life that a parent or older sibling may have described to you.
3. It may or may not be still important to you in your life.
4. It may be a memory that is positive or negative, or both, in how it makes you feel. On the other hand, you may have little feeling about the memory one way or another.
5. It may be a memory that you have thought about many times or rarely.

In order to find your autobiographical memory, just let your mind wander and choose the first memory that comes to mind. Do not spend a lot of time comparing or rejecting different memories. Just choose one that you can describe on the page provided.

Results and Discussion

Single event and summary memory narratives — The interrater agreement was 93 percent; Kappa was .76. The self-defining memory request yielded 73 percent single event and 27 percent summary memories. The autobiographical memory request produced 92 percent single event memory narratives and 8 percent summary memory narratives. As in the previous experiments, summary memory narratives were much less frequently used, regardless of type of request. There was no difference in the mean number of words for the memory narratives generated to the self-defining (mean = 137.14) vs. the autobiographical request (mean = 133.66), $T(225) = 0.65$, ns.

A MANOVA comparing single event vs. summary memory narratives (across both memory request conditions) for emotion, vividness, importance, and years ago was significant, Wilk's L = 0.92, $F(7, 219) = 2.82$, $p < .008$. Univariate analyses for memory narrative type found that summary memory narratives evoked less fearful surprise, $F(1, 225) = 4.53$, $p < .03$, but were rated more important, $F(1, 225) = 6.51$, $p < .01$) (see Table 7). There was also a non-significant trend, $F(1, 225) = 3.04$, $p < .08$ for summary memories to be rated with

Table 7. (Experiment 3)
Means of the Emotion, Vividness, Importance, and Years Ago Ratings for Single Event vs. Summary Memory Narratives
(N = 227)

Emotion Factor	Single Event (N = 189)	Summary (N = 38)
Positive emotion	2.93	3.46
Embarrassment	1.19	1.33
Angry contempt	1.15	1.45
Feaful surprise	1.58*	0.99
Vividness	4.98	5.11
Importance	4.48**	5.13
Years ago	4.43	3.74

*$p < .05$
**$p < .01$

more positive emotion than single memories. One should interpret this narrative type analysis with some caution, however. Due to the unequal distribution of narrative types for the two memory request conditions, and to the overall small number of summary memory narratives, we chose to perform separate one-way MANOVA's for memory request and narrative type. Any findings for narrative type (e.g., the greater importance of summary memories) could also be a function of there being more summary memories in the self-defining condition. The unequal n and small cell size for summary memories also made it difficult to evaluate any kind of covariate or partial correlation analysis.

Experiment 3 repeated the same tendency from experiments 1 and 2 for summary memories to be slightly higher in positive feeling.

In a direct comparison of the self-defining memory request to a matched memory request without an explicit reference to self-definition, we were able to replicate the finding of experiment 2—a self-defining request led to an increase in the percentage of summary memories. Though the autobiographical memory request included instructions of equal detail and specificity to the self-defining memory request and produced memory narratives of equal length, the self-defining memory request yielded over three times as many summary memory narratives. These results add to the evidence that the type of memory request will influence relative proportions of summary and single event memory narratives.

EMOTIONAL QUALITY OF MEMORIES

Table 8 displays the percentage of memories for which ratings on the four emotion factors were three or greater, divided by self-defining vs. autobiographical

Table 8. (Experiment 3)
Percentage of Memories with Ratings of 3 or Greater for the Four Emotion Factors (0-6 scale)
(Self-Defining vs. Autobiographical Memory Request)

Self-Defining (N = 109)	
Emotion Factors	
Positive emotion (interested, proud, happy)	52/109 (45%)
Embarrassment (embarassment, shame, guilt)	22/109 (20%)
Angry contempt (angry, contempt)	22/109 (20%)
Fearful surprise (fearful, surprise)	16/109 (15%)
Mean Vividness — 5.08	
Mean Importance — 4.99	
Mean Years Ago — 4.15 (range 1-18)	
Autobiographical (N = 118)	
Emotion Factors	
Positive emotion (interested, proud, happy)	64/118 (54%)
Embarrassment (embarassment, shame, guilt)	19/118 (16%)
Angry contempt (angry, contempt)	20/118 (17%)
Fearful surprise (fearful, surprise)	24/118 (10%)
Mean Vividness — 4.93	
Mean Importance — 4.21	
Mean Years Ago — 4.43 (range 1-18)	

memory request. Once again, both types of memory requests elicited memories of strong emotional content with ratings of 3 or greater on the 0-6 scale (76% for self-defining vs. 77% for the autobiographical memory request). Also similar to Experiment 2, the self-defining request evoked slightly fewer positive memories (45%) than the autobiographical request (54%) and slightly more negative memories (20% vs. 16%, 20% vs. 17%, and 15% vs. 10% for embarrassment, angry contempt, and fearful surprise, respectively).

A 2-Way Between-Subjects MANOVA for Sex and Type of Request (Self-defining vs. Autobiographical Memory) was performed with the four emotion factors, vividness, importance, and years ago as the dependent variables. There was a significant main effect for Type of Request, Wilks's L = 0.91, $F(7, 212) = 3.07$, $p < .005$. There were no effects for Sex or for Sex by Type of Request.

Examination of the univariate analyses revealed only one significant difference accounting for the Type of Request effect. Subjects who received the self-defining memory request rated their memories as more important to them (mean = 4.99 on

a 0-6 scale) than subjects who received the autobiographical memory request (mean = 4.21), $F(1, 218) = 15.25$, $p < .001$. Looking at the importance ratings in more detail, only 11/109 (10%) memories in the Self-defining conditions were given a rating of 3 (moderately important) *or less* on the 0-6 scale, compared to 37/119 (31%) in the Autobiographical Memory condition.

Based on a cursory coding of the memories for actual references to self-discovery or self-understanding, 40 percent of the self-defining memories contained explicit statements of these themes, while only 5% of the autobiographical memories made explicit mention of self-discovery.

Once again, the self-defining memory request was not markedly more effective in producing more emotionally intense or vivid memory narratives, though it did evoke slightly more important memories than the autobiographical memory request. Of course, one cannot rule out the role of demand in this finding. Subjects in the self-defining condition were explicitly asked to recall a memory of great personal importance. Yet, it is interesting to note that even in the autobiographical memory request condition, when this demand was not explicit, subjects still retrieved many emotional memories of strong personal significance.

EXPERIMENT 4

In the experiments presented thus far, subjects had received a request to write down a memory. It is possible that the organization of memory narratives that we have uncovered, with a roughly 80/20 split in single event to summary memory narratives, is a function of writing down a memory as opposed to describing it aloud. The constraint of writing down a memory in a paragraph or two may force subjects to leave out more specific details or to stop with only a general description. The same subject, if allowed to talk about the memory, might elaborate the memory, changing it from a summary memory narrative to a summary memory narrative punctuated by a single event example.

This mode of recalling a memory would fit nicely with Reiser's and Williams' ideas about the hierarchical organization of memory and the flow of memory retrieval from the general context to the specific indexed event. On the other hand, if subjects, given the greater freedom of the spoken memory request, still elected on occasion to use a summary memory narrative without a single event specified, it would suggest that the distribution between the narrative types is a genuine one and not an artifact of the written request.

Method

Subjects — One hundred undergraduates (74 females, 26 males, mean age = 19.07) from the Connecticut College Introductory Psychology pool participated.

Measures — The same self-defining and autobiographical memory request forms were used. All emotion, vividness, importance, and years ago ratings were the same. The only variation was that the self-defining and autobiographical memory requests were read aloud to the subject.

Procedure — The experimenter met with one subject at a time in a small room within our laboratory. The subject sat face-to-face with the experimenter. The experimenter explained the instructions regarding memory retrieval and gained the subject's consent to record the spoken memory. It was emphasized that the tape-recorded memories would be kept anonymous and the transcribed memories would be coded to avoid identification. Subjects received either the self-defining or autobiographical memory request and then searched for a memory. Once a memory was retrieved, they let the experimenter know and the tape recording began. Subjects were allowed up to 3 minutes to describe the memory and the experimenter made every effort to minimize any conversation with the subject. When there was 1 minute left, the experimenter would announce the time remaining. After the subject finished recalling the memory, the emotion, vividness, importance, and years ago ratings were completed. The experimenter debriefed subjects and checked in with them if the memory seemed particularly distressing or painful.

After the 100 memories were collected, a research assistant transcribed them from tape so that raters could apply the scoring procedures to them.

Results and Discussion

Single vs. summary memory narratives — As predicted, the spoken memories generated more memory narratives that blended a summarized memory narrative with mention of a single event. The raters applied the same scoring criteria as before, but noted where a mixed narrative type occurred. If a memory contained both a summary narrative and mention of a specific single event, it was only scored a summary memory narrative when the summary portion dominated the narrative and the single event/specific detail was mentioned once in passing. To make this distinction clearer, Table 9 presents a contrast between a pure summary memory narrative and a mixed summary memory narrative from the transcribed spoken memories. Both were scored as summary memory narratives of the "eventless narrative" type, but the mixed vs. pure distinction was noted.

The raters achieved an interrater agreement of 94 percent, Kappa = .86. The self-defining request yielded 62 percent (31/50) single event and 38 percent (19/50) summary memory narratives, while the autobiographical request produced 78 percent (39/50) single event and 22 percent (11/50) summary memory narratives. The request for spoken memories appeared to encourage slightly more summary memories for both types of memory retrieval instructions.

The two authors independently divided the summary memory narratives into "pure" and "mixed" categories (see Table 9) with an interrater agreement of 97 percent. Of the thirty summary memory narratives, twenty-two (73%) were pure summaries, with no mention of single events at all. The eight mixed summary

Table 9. (Experiment 4)
Sample Pure Summary and Mixed Summary Memory Narratives

Pure Summary of the Eventless Narrative Type (Excerpted) — Coming home for homecoming, back to my hometown, expecting to have a really good time with my friends and seeing my girlfriend in particular . . . Got home — the weekend started off wonderfully. Saw my friends, saw my family, it was great to be back home . . . Be away from campus life and all of it. It was a very interesting weekend, because that time my girlfriend decided that she wanted to break up, which I was not ready for or expecting.

Mixed Summary of the Eventless Narrative Type (Excerpted) — It was the summer before my senior year. **I woke up in the morning and there was a note from my father** that he had taken my mother to the hospital . . . I had known that she wasn't feeling well and that she was going to the doctor, but then it turned out that she was going to stay overnight and then that night turned into two weeks and then a month and two months and she spent the whole summer there. And she was O.K., but there were high points and low points, times when she was in intensive care. But like I was an only child, so that summer my father and I were running around all the time. My father was at work or in the hospital all the time . . .

Note: Bold type indicates reason for narrative difference.

memory narratives were roughly equal between self-defining and autobiographical requests (5 vs. 3, respectively).

A MANOVA comparing summary vs. single event memory narratives on the emotion factors and other ratings was not significant, Wilks' L = .88, $F(7, 92) = 1.74$, $p < .11$, though once again the univariate analysis indicated that summary memory narratives were rated more important than single event memory narratives, $F(1, 98) = 9.35$, $p < .003$, (means = 5.60 vs. 4.89, respectively).

Emotional quality of the memories — Table 10 displays the percentage of memories for which ratings on the four emotion factors were 3 or greater, broken down by self-defining vs. autobiographical memory request. Both types of memory requests elicited memories of relatively strong emotional content where at least one emotion factor was equal to or greater than 3 on the 0-6 scale (73% for self-defining vs. 70% for the autobiographical memory request). Unlike the previous experiments, the self-defining request evoked the same percentage of strong positive memories, 24/50 (48%), as the autobiographical request. Negative memories were also similar (18% vs. 16%, 18% vs. 20%, and 14% vs. 6% for angry contempt, fearful surprise, and embarrassment, respectively for self-defining vs. autobiographical).

Table 10. (Experiment 4)
Percentage of Memories with Ratings of 3 or Greater for the Four Emotion Factors (0-6 scale)
(Self-Defining vs. Autobiographical Memory Request)
($N = 100$)

Self-Defining ($N = 50$)	
Emotion Factors	
Positive emotion (interested, proud, happy)	24/50 (48%)
Embarrassment (embarassment, shame, guilt)	9/50 (18%)
Angry contempt (angry, contempt)	9/50 (18%)
Fearful surprise (fearful, surprise)	7/50 (14%)
Mean Vividness — 5.34	
Mean Importance — 5.44	
Mean Years Ago — 5.76 (range 1-16)	
Autobiographical ($N = 50$)	
Emotion Factors	
Positive emotion (interested, proud, happy)	24/50 (48%)
Embarrassment (embarassment, shame, guilt)	8/50 (16%)
Angry contempt (angry, contempt)	10/50 (20%)
Fearful surprise (fearful, surprise)	7/50 (14%)
Mean Vividness — 5.22	
Mean Importance — 4.76	
Mean Years Ago — 5.62 (range 1-16)	

A One-Way Between-Subjects MANOVA for Type of Request (Self-defining vs. Autobiographical Memory) was performed with the four emotion factors, vividness, importance, and years ago as the dependent variables. There was a significant effect for Type of Request, Wilks' L = 0.85, $F(7, 92) = 2.26$, $p < .04$. Examination of the univariate analyses revealed only one significant difference. Subjects who received the self-defining memory request once again rated their memories as more important to them (mean = 5.44 on a 0-6 scale) than subjects who received the autobiographical memory request (mean = 4.76, $F(1, 98) = 10.17$, $p < .002$. Looking at the importance ratings more closely, only 1/50 (2%) of the memories in the Self-defining condition was given a rating of 3 (moderately important) or less on the 0-6 scale, compared to 10/50 (20%) in the Autobiographical Memory condition.

Speaking the memory aloud to the experimenter did not diminish the emotional quality or the vividness of the memories. The memories (97%) were rated with a 4 or greater for vividness. The percentages of strong emotion ratings were highly

similar to the previous experiments. The most immediate effect of the spoken request was in the number of words used to describe the memory, mean = 313.90 words per memory vs. the roughly 100 words used in the previous experiments.

GENERAL DISCUSSION

Over four experiments, a reliable scoring system for distinguishing between summarized and specific memory narratives was demonstrated. The average interrater agreement across the four experiments was 93 percent with a mean Kappa of .78. Based on our scoring criteria, the relative proportion of single event to summary memory narratives was fairly consistent with a mean percentage of 78 percent single event memory narratives and 22 percent summary memory narratives across the four experiments. There was only weak support for the hypothesis that summary memories would be more positive in affective tone than single event memories.

While many pure examples of single event and summary memory narratives were detected, it was also clear that some subjects produced memories that merged the generalization of the summary and the specificity of the single event memory narrative. Whether this combined memory represents a more integrated and "complete" recollection than either the single event or summary narrative alone would be an intriguing question for future research. These combined memory narratives also offer support for Reiser's view that an important way subjects retrieve memories is through the generation of a general context, which is then made particular by a specific instance of the more general category.

While single event memory narratives varied in how much generalization was included in addition to the description of a specific event, summary memory narratives could be broken down into two distinct subtypes—the "generic" memory narrative and the "eventless" memory narrative. Key phrases that signalled a generic memory narrative were, "We always used to . . . ," "Every summer we would . . . ," and "I can't remember how many times I," among others.

The eventless memory narrative strongly resembled Barsalou's extended event memory with the exception that it did not include any specific imagery or detailed discussion of single incidents that happened within the time period of the extended event. To the degree that an eventless narrative became specific and imagistic, it was considered a single event narrative.

Instructional Sets and Memory Organization

Different instructions for the memory request do appear to have an effect on the relative proportions of single event and summary memory narratives. At a most basic level, the difference in percentages of generic summary memories between Barsalou's [33] 60 percent summary memories and the 30 percent found in

experiment 4 reported here point to the effect of instructional sets when studying memories. Barsalou asked for a series of spoken memories about subjects' summer vacations. In experiment 4, we also asked for spoken memories, but only one per subject and did not specify a time period. Evidently, a more specific request to recount events from a particular time period pulls for much more summarization than more open-ended requests for memories from at least a year ago.

Given subjects' overall tendency to provide single event memory narratives across the four experiments, the self-defining request produced more summary memory narratives relative to the two other sets of instructions. In retrieving a self-defining memory, subjects may be more likely to generate a representative grouping of similar important personal events and then stop there rather than search further for a specific instance of this grouping. They may read the self-defining request as asking for "what is typical about me" and provide this "typical" or "summary" memory as opposed to a unique event. Wahler and Afton found a similar result when they asked mothers to provide descriptions of their children with behavior problems [54]; the mothers had difficulty moving beyond general descriptions that were "characterological" rather than specific in detail.[1]

If personality and clinical researchers hope to study memory organization for what it might reveal about individual differences in defensiveness or vulnerability to depression, it is clear that how they request their memories will have an effect upon their results. Not only the instructions will play a role, but the general context of their inquiries may affect the narratives produced. In Experiment 4, where subjects provided memories in a format more analogous to a clinical interview, there was again a greater tendency toward summarized or "characterological" narratives. While experimental controls should not be sacrificed, where feasible, ecologically valid approaches to memory requests need to be encouraged [55].

In evaluating the future potential of the self-defining memory request, based on the results of the three experiments that employed it here, one could say that the method assures the experimenter of 1) a more varied distribution of single event and summary memory narratives; 2) a higher percentage of memories that are considered important to the subject; and 3) more memories concerned explicitly with themes of self-discovery and understanding. However, claims for its ability to invoke more vivid or affective memories were not substantiated. It is possible that any request to subjects in a psychology class to generate memories has already built into it a fairly strong implicit demand that the memory be vivid and affective.

[1] We are indebted to J. M. G. Williams for this possible explanation of the results obtained in the self-defining memory request conditions.

An informal examination of the content of the summary memory narratives collected suggested another potential method for increasing the proportion of summary memories. Many summary memory narratives were organized around one's "generic" experiences with another person (parent, boyfriend, girlfriend, sibling, etc.). The request, "recall a memory about your mother, father, brother, etc.," might yield a higher percentage of summarized recollections.

Future Studies

It is hoped that an experimental demonstration of reliable differences in memory narrative types will encourage systematic investigation of personality differences in memory organization. Using the scoring system established in these experiments, one would be able to test whether chronically depressed individuals produce less single event positive memory narratives and more summary memory narratives in relation to a non-depressed population, as Williams and his colleagues have suggested. In research underway in our laboratory, we have collected multiple memories from the same subject, while also administering a battery of mood and personality scales, including measures of depression, anxiety, obsessional style, and repression. Applying the single event/summary memory distinction developed in this article, we will not only investigate Williams' contention that memory organization differs in depression, but also examine the possibility that this distinction is linked to characterological defensive styles.

ACKNOWLEDGMENTS

The authors would like to thank Peter Salovey, Stuart Vyse, Elaine C. Lee, Susan Lee, and Melissa Root for their valuable assistance with this manuscript. The single event and summary memory narrative scoring manual may be obtained in its entirety by writing to Jefferson A. Singer, Ph.D., Department of Psychology, Connecticut College, 270 Mohegan Avenue, New London, CT 06320.

REFERENCES

1. J. F. Kihlstrom, On Personality and Memory, in *Personality, Cognition, and Social Interaction*, N. Cantor and J. F. Kihlstrom (eds.), Erlbaum, Hillsdale, New Jersey, pp. 123-149, 1980.
2. D. P. McAdams, Experiences of Intimacy and Power: Relationships between Social Motives and Autobiographical Memory, *Journal of Personality and Social Psychology, 42*, pp. 292-302, 1982.
3. D. P. McAdams, D. B. Lensky, S. A. Daple, and J. Allen, Depression and the Organization of Autobiographical Memory, *Journal of Social and Clinical Psychology, 7*, pp. 332-349, 1988.
4. J. L. Singer, The Private Personality, *Personality and Social Psychology Bulletin, 10*, pp. 7-30, 1984.
5. J. L. Singer, Private Experience and Public Action: The Study of Ongoing Conscious Thought, in *The Emergence of Personality*, J. Aronoff, A. I. Rabin, and R. A. Zucker (eds.), Springer, New York, pp. 105-146, 1987.
6. J. A. Singer, Affective Responses to Autobiographical Memories and Their Relationship to Long-term Goals, *Journal of Personality, 58*, pp. 535-563, 1990.
7. A. Adler, *Understanding Human Nature*, Greenberg, New York, 1927.
8. A. Adler, *What Life Should Mean to You*, Grosset and Dunlap, New York, 1931.
9. H. L. Ansbacher, Adler's Interpretation of Early Recollections: Historical Account, *Journal of Individual Psychology, 29*, pp. 135-145, 1973.
10. H. H. Mosak, Early Recollections as a Projective Technique, *Journal of Projective Techniques, 22*, pp. 302-311, 1958.
11. H. H. Mosak, Predicting the Relationship to the Psychotherapist from Early Recollections, *Journal of Individual Psychology, 21*, pp. 77-81, 1965.
12. A. Bruhn, Using Early Memories as a Projective Technique—The Cognitive Perceptual Method, *Journal of Personality Assessment, 49*, pp. 587-595, 1985.
13. R. J. Langs, Earliest Memories and Personality, *Archives of General Psychiatry, 12*, pp. 379-390, 1965.
14. R. J. Langs, First Memories and Characterologic Diagnosis, *Journal of Nervous and Mental Diseases, 141*, pp. 318-320, 1965.
15. R. J. Langs, M. B. Rothenberg, J. R. Fishman, and M. F. Reiser, A Method for Clinical and Theoretical Study of the Earliest Memory, *Archives of General Psychiatry, 3*, pp. 523-534, 1960.
16. M. Mayman, Early Memories and Character Structure, *Journal of Projective Techniques and Personality Assessment, 32*, pp. 303-316, 1968.
17. M. Mayman and M. Faris, Early Memories as Expressions of Relationship Paradigms, *American Journal of Orthopsychiatry, 30*, pp. 507-520, 1960.
18. R. F. Baumeister, A. Stillwell, and S. R. Wotman, Victim and Perpetrator Accounts of Interpersonal Conflict: Autobiographical Narratives about Anger, *Journal of Personality and Social Psychology, 59*, pp. 94-1005, 1990.
19. H. Rorschach, *Psychodiagnostik*, H. Huber Verlag, (trans.), Bricher, Bern, 1942. (Original work published 1921.)
20. G. A. Bonanno and J. L. Singer, Repressive Personality Style: Theoretical and Methodological Implications for Health and Pathology, in *Repression and Dissociation: Implications for Personality Theory, Psychopathology, and Health*, J. L. Singer (ed.), University of Chicago Press, Chicago, pp. 435-470, 1990.
21. M. H. Erdelyi, Regression, Reconstruction, and Defense: History and Integration of the Psychoanalytic and Experimental Frameworks, in *Repression and Dissociation: Implications for Personality Theory, Psychopathology, and Health*, J. L. Singer (ed.), University of Chicago Press, Chicago, 1990.
22. M. J. Horowitz, C. Marmar, J. Krupnick, N. Wilner, N. Kaltreider, and R. Wallerstein, *Personality Styles and Brief Psychotherapy*, Basic, New York, 1984.

23. G. S. Klein and H. Schlesinger, Where Is the Perceiver in Perceptual Theory?, *Journal of Personality, 18*, pp. 32-47, 1949.
24. D. Rapaport, M. Gill, and R. Schafer, *Diagnostic Psychological Testing* (revised edition by R. R. Holt), International Universities Press, New York, 1968. (Original work published, 1945.)
25. H. Witkin, H. Lewis, H. Hertzman, K. Machover, P. Meissner, and S. Wapner, *Personality through Perception*, Harper, New York, 1954.
26. D. Shapiro, *Neurotic Styles*, Basic Books, New York, 1965.
27. A. R. Bruhn, Use of Early Memories as a Projective Technique, in *Advances in Psychological Assessment*, (Vol. 6) P. McReynolds and C. Chelume (eds.), Jossey Bass, San Francisco, pp. 109-150, 1984.
28. N. G. Hanawalt and L. J. Gebhardt, Childhood Memories of Single and Recurrent Incidents, *Journal of Genetic Psychology, 107*, pp. 85-89, 1965.
29. R. G. Moore, F. N. Watts, and J. M. G. Williams, The Specificity of Personal Memories in Depression, *British Journal of Clinical Psychology, 27*, pp. 275-276, 1988.
30. J. M. G. Williams and K. Broadbent, Autobiographical Memory in Suicide Attempters, *Journal of Abnormal Psychology, 95*, pp. 144-149, 1986.
31. J. M. G. Williams and B. H. Dritschel, Emotional Disturbance and the Specificity of Autobiographical Memory, *Cognition and Emotion, 2*, pp. 221-234, 1988.
32. S. S. Tomkins, Script Theory: Differential Magnification of Affects, in *Nebraska Symposium on Motivation* (Vol. 26), H. E. Howe and R. A. Dienstbier (eds.), University of Nebraska Press, Lincoln, pp. 201-236, 1979.
33. L. W. Barsalou, The Content and Organization of Autobiographical Memories, in *Remembering Reconsidered: Ecological and Traditional Approaches to the Study of Memory*, U. Neisser and E. Winograd (eds.), Cambridge University Press, Cambridge, England, pp. 193-243, 1988.
34. M. Linton, Ways of Searching and the Contents of Memory, in *Autobiographical Memory*, D. C. Rubin (ed.), Cambridge University Press, Cambridge, England, pp. 50-67, 1986.
35. U. Neisser, Nested Structure in Autobiographical Memory, in *Autobiographical Memory*, D. C. Rubin (ed.), Cambridge University Press, Cambridge, England, pp. 71-81, 1986.
36. B. R. Reiser, "Contents and Indices in Autobiographical Memory," Doctoral dissertation (Tech Rep. 24), Cognitive Science Program, Yale University, New Haven, 1983.
37. B. J. Reiser, J. B. Black, and P. Kalamarides, Strategic Memory Search Processes, in *Autobiographical Memory*, D. C. Rubin (ed.), Cambridge University Press, Cambridge, England, pp. 100-121, 1986.
38. J. A. Robinson and K. L. Swanson, Autobiographical Memory: The Next Phase, *Applied Cognitive Psychology, 4*, pp. 321-335, 1990.
39. E. Tulving, *Elements of Episodic Memory*, Oxford University Press, New York, 1983.
40. E. Tulving, Memory Research Is Not a Zero-Sum Game, *American Psychologist, 46*, pp. 37-40, 1991.
41. R. C. Schank, *Dynamic Memory: A Theory of Reminding and Learning in Computers and People*, Cambridge University Press, New York, 1982.

42. J. L. Kolodner, Reconstructive Memory: A Computer Model, *Cognitive Science, 7*, pp. 281-328, 1983.
43. J. L. Kolodner, *Retrieval and Organizational Strategies in Conceptual Memory: A Computer Model*, Erlbaum, Hillsdale, New Jersey, 1984.
44. W. F. Brewer, What Is Autobiographical Memory? in *Autobiographical Memory*, D. C. Rubin (ed.), Cambridge University Press, Cambridge, England, pp. 25-49, 1986.
45. J. A. Singer, E. A. Saltzberg, and D. Yatim, Self-Defining Memories: A Subtype of Autobiographical Memories, Poster presented at the annual meeting of the Eastern Psychological Association, Boston, 1989.
46. C. E. Izard, *Human Emotions*, Plenum, New York, 1977.
47. S. Siegel and N. J. Castellan, *Nonparametric Statistics for the Behavioral Sciences*, McGraw-Hill, New York, 1988.
48. D. P. McAdams, Unity and Purpose in Human Lives: The Emergence of Identity as a Life Story, in *Studying Persons and Lives*, A. Rabin, R. Zucker, R. Emmons, and S. Frank (eds.), Springer, New York, pp. 148-200, 1989.
49. H. Markus, The Self in Thought and Memory, in *The Self in Social Psychology*, D. Wegner and R. Vallacher (eds.), Oxford University Press, New York, pp. 102-130, 1979.
50. T. B. Rogers, N. A. Kuiper, and W. S. Kirker, Self-Reference and the Encoding of Personal Information, *Journal of Personality and Social Psychology, 35*, pp. 677-688, 1977.
51. P. Salovey, "The Effects of Mood and Self-Focus of Attention on Social Behaviors," Unpublished doctoral dissertation, Yale University, 1986.
52. P. Salovey and J. Rodin, Cognitions about the Self: Connecting Feeling States and Social Behavior, in *Review of Personality and Social Psychology*, (Vol. 6), P. Shaver (ed.), Sage, Beverly Hills, pp. 143-166, 1985.
53. J. Suls (ed.), *Psychological Perspectives on the Self* (Vol. 1), Erlbaum, Hillsdale, New Jersey, 1982.
54. R. G. Wahler and A. D. Afton, Attentional Processes in Insular and Non-insular Mothers: Some Differences in Their Summary Reports about Child Problem Behaviours, *Child Behaviour Therapy, 2*, pp. 25-41, 1980.
55. M. R. Banaji and R. G. Crowder, The Bankruptcy of Everyday Memory, *American Psychologist, 44*, pp. 1185-1193, 1989.

Direct reprint requests to:

Jefferson A. Singer
Department of Psychology
Connecticut College
270 Mohegan Avenue
New London, CT 06320-4196