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Temporal Stability of Earliest Childhood Memories in Relation to Naturally Occurring Mood States

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Temporal Stability of Earliest Childhood Memories
in Relation to Naturally Occurring Mood States

by

Peggy Wingo

A Thesis Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts

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1988

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VITA

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INTRODUCTION

Within the practice of clinical psychology, the focus on early memories generally assumes that earliest childhood recollections are significant not so much as objective information on social history but as constructions of experience that reflect aspects of the individual's view of self, others, and the world. As such, early memories are utilized in both therapy (Binder & Smokler, 1980) and diagnostic assessment (Langs, 1965). Clinical theory postulates that the early memory is an analog of personality structure, that the phenomenological aspects of early memories represent the individual's characteristic modes of thinking, feeling, and interacting. These memories, as reconstructions of actual events, are a function of the teller's contemporary concerns and adaptations. Even among clinicians who do not consider themselves particularly psychodynamic in orientation, this structural theory is widely accepted.

This clinical perspective can be traced to Alfred Adler who brought the analysis of early memories to prominence (1937). Adler believed that early

recollections were of the utmost importance to understanding an individual's characteristic "style of life". He argued that, although one's earliest memory is consciously held or easily brought to awareness, clinical findings had demonstrated an unconscious "purposiveness" in the choice of the memory that has been remembered longest. Moreover, Adler postulated that memories were at least partially reconstructed so that "what is altered or imagined is also expressive of the patient's goal" or life-plan. He wrote that:

When rightly understood in relation to the rest of an individual's life, his early recollections are found always to have a bearing on the central interests of that person's life..... They are most helpful in revealing what one regards as values to be aimed for and what one senses as dangers to be avoided. They help us to see the kind of world which a particular person feels he is living in, and the ways he early found of meeting that world.

(1937, p. 287)

This perspective was extended to psychopathology, whereby the causes of symptomatology were viewed as rooted in the individual's beliefs, attitudes, and strivings (1937). Implied in this theory is the idea that the early recollections are both a measure of personality-- the themes, attitudes, and roles being relatively stable or consistent over long periods of

time-- and reflective of more immediate manifestations of distress or concern for the individual. Therefore, there is some ambiguity in Adler's view as to how sensitive the recall of early memories is to "state" factors. His overall emphasis, however, is clearly placed upon the stable "traits" of the individual which are revealed by the memories.

Mayman's theoretical perspective (1968) has also had a strong impact on the manner in which many diagnosticians and psychotherapists conceptualize early memories. His model grew out of the ego psychology orientation to understanding personality. Similar to Adler, he purports that early memories represent character structure. He stated:

Early memories are not autobiographical truths, nor even "memories" in the strictest sense of this term, but largely retrospective inventions developed to express psychological truths rather than objective truths about a person's life; ...early memories are expressions of important fantasies around which a person's character-structure is organized; ...early memories are selected (unconsciously) by a person to conform with and confirm ingrained images of himself and others..... Consequently, one may sift through the stories a person tells about himself and extract those intrusive interpersonal themes which define that person's enduring view of himself and his enduring expectations of others. (1968, p. 304)

Unlike Adler, however, Mayman's theory reflects a Freudian influence in its emphasis on the different ego

and need states indicated by the memories, conceptualized in psychosexual terms. That is, Mayman tended to identify "oral", "anal", "phallic", and "genital" self and object representations in the memories of his clients (1968).

Nevertheless, Mayman's general statements about early memories often seem to epitomize the more eclectic clinical theory, since he stresses that early recollections are not only "peculiarly self-representative", but are also "surprisingly limited in number and stable in composition" (Mayman & Faris, 1960, p. 508). His attitude echoes the pervasive view that early memories, and perceptions of self and others in general, are stable or constant.

More recently, a "cognitive-perceptual model" for understanding early memories as projective phenomena has been proposed by Bruhn and his colleagues (Bruhn, 1981; Bruhn & Bellow, 1984; Bruhn & Davidow, 1983; Bruhn & Last, 1982; Bruhn & Schiffman, 1982). This model, as those outlined above, emphasizes the constructive rather than eidetic nature of memory, based on Bartlett's (1932) research in perception which supports the notion that literal and precise remembering rarely occurs.

Bruhn believes perception as well as memory is subject to a selection process which is directed by various attitudes, needs, fears, and interests of the perceiver. He postulates that a "perception-memory-perception feedback loop" operates (1982), so that these variables will tend to remain constant. It then takes a novel and relatively significant event to challenge and redirect this perceptual loop. Bruhn points out that this may also be referred to as an individual's frame of reference; the concept seems analogous to the notion of cognitive/affective schemata, as well.

In regard to more specific memory mechanisms, Bruhn suggests that early memories usually

contain an element of unfinished business. That is, the individual's goal has been blocked, so that a tension to complete the action permeates the recollection. Thus, many EMs illustrate an issue that has not been resolved or one that was resolved only after a prolonged struggle. (1985, p. 118)

Bruhn's model implies that early recollections have a consistent and stable flavor. On the other hand, Bruhn's concept of novel experiences impinging upon the "feedback loop" provides for the possibility of changes in early memories over a short period of time.

However, neither he nor his colleagues have elaborated upon this issue. Although the theory does allow for

early memory change to occur in this manner, there is no discussion as to how remarkable and unusual an experience must be to produce a change. Nor does Bruhn attempt to delineate specific influences that might facilitate this change, such as the atypical or extreme mood states which can result from a novel experience. Overall, Bruhn emphasizes the stability of early childhood recollections.

There is very little empirical evidence to support or contradict these popular clinical conceptualizations of early memories, despite their pervasiveness. Though the literature on this approach tends to be well articulated in various respects, there is a lack of clarity about the nature and causes of structural personality change and the effect on its manifestations or by-products, such as early recollections. Specifically, the issue has not been addressed regarding the possibility of natural variation in an individual's perceptions of self, other, and world (i.e., object relations), which would then be apparent in the individual's early recollections. It is unclear as to how much variation is expected in early memories as a function of the plasticity of certain underlying

"person" variables.

To date, there has been little research exploring the degree to which early memories might change over time, as a function of either mood, situation, or intervening life events. However, Hedvig (1963) studied the effects of experimentally manipulated experiences for one occasion per subject on both early memory descriptions and Thematic Apperception Test (TAT) stories. A group of college students (N=360) was given anagram puzzles to solve. The specific experimental conditions of this task differed with respect to degree of difficulty (leading to either success or failure experiences), and degree of friendliness or hostility exhibited by the experimenter. Hedvig explored whether the affective tone and thematic content of earliest recollections and TAT stories correlated with the emotions and themes assumed to be generated by the different experimental conditions. She found that the affective tone and thematic content of the TAT stories more often matched the subjects' experiences than did the early memory narratives. Based on this comparison, Hedvig concluded that earliest recollections are generally stable and likely to reveal "permanent

personality characteristics".

There are a number of methodological weaknesses in this study that limit its implications with regard to understanding early memories. It does not provide temporal stability data, but only compares early recollections to another projective device. In addition, no check was made to verify that the experimental conditions had in fact elicited the emotions the author intended to elicit. Therefore, Hedvig's conclusions about the significance of earliest recollections are not adequately demonstrated in this investigation.

Another study, in the realm of treatment outcome research, has indirectly addressed the question of early memory stability (Ryan & Bell, 1984). This investigation assumes that structure is subject to change under extraordinary circumstances, and that these changes will carry over and be revealed through differences in the memory of early childhood events. In other words, structural change is assumed to occur through effective psychotherapy and early memories are treated as the dependent variable or evidence of that change.

These authors studied treatment outcome among inpatients diagnosed as schizophrenic by evaluating their apparent change in object relations. They operationalized object relations as the scores associated with each subject's reported early memories as assessed through the Ryan Object Relations Scale (Ryan, 1973). Progress in therapy was hypothesized to be reflected in corresponding changes in memory scores from test one (intake), to test two (9 months into treatment), to test three (termination of treatment), to test four (6 month follow up). Again, inherent in this methodology is the assumption that object relations are reflected in early memories, and that these representations of self and others may be plastic, or subject to observable degrees of change under certain circumstances, such as psychotherapy.

The researchers found that there was a fair amount of change in the memories elicited, namely the individuals' earliest memory, earliest memory of mother, and earliest memory of father. In general, there were significant increases in the scored level of object relations from admission to discharge and follow-up for the group studied.

In response to these results, Ryan and Bell commented that "the increase in object relations scores challenges the theoretical view that low levels of object relations is a relatively fixed characteristic of schizophrenia." They see their findings as providing empirical data which contradict the commonly held beliefs about object relations stability. For our purposes, it is important to note both of the implications of these results. First, object relations may not be as static as often conceptualized in the literature. Second, in regard to early memory stability, in so far as early memories reflect internal object relations, so too will these memories, or aspects of them, be subject to change.

Ryan and Bell indicate that the notion of instability in object relations and, consequently, in childhood recollections is not usually emphasized in the relevant scholarly literature. As mentioned above, theorists such as Adler tend to be vague as to how easily changed they might be or what forces (other than psychotherapy) might contribute to fluctuations. Overall, Ryan and Bell argue the following:

The explicit or implicit suggestion in much of this work is that object relations patterns are set down

in early childhood, become consolidated through late childhood and early adolescence, and remain relatively fixed throughout adult life as the transference paradigms of character. Adult functioning whether normal, neurotic or psychotic is assumed to be dependent on the maturity of one's object relations, that is, on the relatively stable level one has achieved along the developmental continuum. From this point of view, improvement in object relations is possible only as a result of a mutative maturational process, apparently limited to natural developmental processes and/or psychotherapy. (1984, p.210)

This is a clear articulation of pervasive clinical theory which excludes short-term variables as having an effect on object representations and manifestations thereof, namely early memories. There is no empirical evidence to support this claim or, more fundamentally, the idea that early memory narratives in general are highly stable. In fact, Winthrop's study (1958) on repeat reliability of written descriptions of earliest memories found that 32% of the reported memories for 69 subjects were unreliable upon an eight week retest. Unfortunately, his investigation provides only global conclusions about the percentages of memories where changes, omissions, or additions occurred. He does not describe the kinds or degrees of alterations found, nor does he comment on the

qualitative significance or clinical implications of his data.

Plutchik, Platman, and Fieve (1970) examined the stability of early recollections among a sample of manic-depressive patients. Subjects gave their three earliest memories on two different occasions, an average of seven weeks apart. Using a technique developed by Wynne and Schaffzin (1965) for assessing emotional content, the three earliest memories of each subject were rated with respect to eight basic emotions. Correlations were obtained in order to test the stability of these memories over time. The authors found that the average affect scores were fairly constant (total affect $r = .71$). However, specific types of affect, particularly those of a dysphoric nature, were much more variable over the retest period. Plutchik and his colleagues reported that the

stability of recalled affect in individuals is only moderate or low for most affects, but feelings of anger and total affect are highly stable in the repeated recalls. (1970, p. 180)

They concluded that either the overall content of the early memories must have changed for many subjects upon retest, or that the wording of their memories was

substantially modified. The authors also noted that the manic-depressive patients seemed to show less total affect and positive affect in their earliest recollections than had been previously reported for college students (Wynne & Schaffzin, 1965).

Thus, Plutchik, Platman, and Fieve found that early recollections were less stable than would be expected by traditional clinical theories. Their results indicate that the common clinical conceptualizations of early memories may put too much emphasis on their use as a stable index of personality. The data imply that, although a few affective aspects of earliest recollections are relatively stable, enough variation occurs to justify conceiving of early memories as a more state-related index of emotional functioning. Unfortunately, the study by Plutchik and his colleagues is weak in certain important respects, limiting its generalizability. The authors collected very brief early memory descriptions that did not allow more elaborate scoring or analyses. No other variables besides emotional content were coded, such as those related more specifically to perceptions of self and other people.

Recent research in other areas of psychology also seems to refute the idea that memories remain stable over short periods of time and regardless of immediate mood or circumstance. Much of the research conducted in regard to memory and its various influences, such as affect, takes place in the realms of cognitive and experimental psychology. Such research differs from clinical outcome research in both its purpose and perspective for investigating early memories. Many of these studies are laboratory investigations that use mood induction techniques for exploring the relationship between emotion and recall, rather than examining their pre-existing or naturally occurring relationship. These findings provide overwhelming support for the notion that the memories which are more easily retrieved, the details included, and the attributions about these events are shaped to a great extent by fluctuations in current mood state (Blaney, 1986). In other words, factors related to the individual's immediate situation or mood may influence the way earliest recollections are selected and described.

For instance, Teasdale and Fogarty (1979) used a mood induction procedure to examine the differential

effects of depressed and happy moods on recall of pleasant and unpleasant events. They used a procedure similar to the Velten technique where subjects were presented with a series of self-referent statements intended to produce the desired mood state. Subjects were seen on two separate occasions, receiving the depressed mood induction at one meeting and the elated or happy mood at the other. Upon achieving the intended mood, subjects were then presented with a list of words and asked to recall a past life event, either pleasant or unpleasant, which they associated with each of the given words. Subjects later rated their own memories for degree of pleasantness and unpleasantness as did independent judges. Results showed that the two induced mood states differed significantly in terms of latency of retrieval; that is,

time to retrieve pleasant memories, relative to time to retrieve unpleasant memories, was significantly longer when subjects were depressed than when they were happy. (1979, p. 248)

The authors concluded that their study suggests a differential effect of mood on the accessibility of these two types of memories.

A more complete study by Teasdale, Taylor, and

Fogarty (1980) examined the effects of induced elated and depressed moods on recall of happy and unhappy experiences. Using again the Velten procedure, they elicited the two moods on different occasions and had subjects make ratings, as above, on a third occasion in a "neutral" mood state. The researchers found that

extremely unhappy memories were significantly more likely to be retrieved in the depressed mood than in the elated mood. Extremely happy memories were significantly more likely to be retrieved in the elated mood than in the depressed mood. (p. 339)

Latency effects were reported as significantly different, also in the manner above. These results, therefore, add support to the notion of "mood congruent effects" on retrieval and recall of affectively charged memories.

Casas (1985) replicated mood congruent retrieval effects with earliest memories rather than the "past life events" usually focused upon in this area of the literature. He correlated five reported earliest recollections with subjects' reported mood states. Using a circumplex model of emotions, Casas demonstrated that:

1. happy subjects recalled a larger proportion of number of happy memories than did sad subjects;

2. sad subjects reported more sad early recollections than happy subjects did;

3. for subjects scoring as extremely happy or sad, there was a higher intra-subject proportion of memories recalled that were congruent with their reported state mood.

This study, while it does not examine temporal stability of early memories, provides strong evidence that earliest recollections covary with affect, just as more contemporary types of recall have been shown to correlate with mood. There is a large body of literature demonstrating mood influences on varying memory tasks. In Blaney's review of the literature on affect and memory (1986), he cites numerous studies that confirm the presence of "mood congruence" effects, as well as providing evidence for the "state dependent learning hypothesis" to explain facilitation of recall. Taken together, these studies may be viewed as lending credence to the hypothesis that the description of one's earliest memory (and perhaps the choice of that memory) is influenced to some degree by temporary variations in mood. What is noticeably lacking in this area of research, however, is exploration of the effects of

naturally-occurring mood on repeated recollections of events, and early memories in particular.

An integration of clinical theory and empirical findings would propose that early memories are a function of the individual's cognitive-perceptual view or nature of his/her object representations, but that those perceptions are fairly plastic. In other words, the structural aspects of mental representations or cognitive/affective schemata might vary over a range or continuum for any given individual. While there might be a prototypical stance for the individual in a neutral mood state, it is possible that naturally occurring mood changes can cause cognitions and perceptions to shift, so that the same event or memory might be differentially interpreted or re-experienced by the individual under different moods. Also plausible is the idea that the choice of the particular memory might change as a result of mood shifts, in that the accompanying affect would facilitate the retrieval of certain memories as opposed to others. Thus, the degree of pleasantness/unpleasantness, the perceptions and attributions about self, others, and the environment, and perhaps even the thematic content of early memories could, in

relationship to mood fluctuations which impinge on the underlying structure of object relations, show variation. This is an integrative hypothesis for which there is no direct empirical evidence. The following exploratory study examined the stability of earliest memories in relationship to naturally occurring mood changes over an eight to twelve week period, in order to assess the validity of such a hypothesis.

Specifically, these predictions were made:

1. Early memory change in association with mood change. In general, there would be some degree of mood change among subjects which would be correlated with changes in early memory scores.

2. Total amount of early memory change. The sum of all the early memory variables that received a different rating at administration two, would be positively related to mood state changes. Thus, the magnitude of change in early memories would covary with magnitude of mood change, whether these affective shifts were in a positive or negative direction.

3. Pleasantness of content. Early memories would be construed as more pleasant by both subjects and judges as mood improved. Conversely, the self-reported

memories would be rated as more unpleasant by subjects and judges as mood became more negative.

4. Object relations. Object relations variables would change in relationship to mood such that:

a. View of others. Other people would be described by subjects in a more positive light (e.g., tending to satisfy rather than frustrate needs) as mood improved. Others would be perceived by subjects as more negative, tending to be "need frustrators" or even completely dissociated from memory events as mood worsened.

b. View of self. Subjects' views of themselves within their memories would become more positive (more active and successful) as mood improved, while their self perceptions would become more negative as mood worsened.

c. View of environment. The environment would be seen as more supportive and safe as subjects' mood became more positive, and the opposite would be true for subjects whose mood became more negative.

d. Individual distinctiveness. Other persons would be described in more distinctive and elaborate terms as mood improved. When mood worsened, other

persons would be less well defined, more vague and unclear.

e. Interpersonal contact. A greater degree of interpersonal contact would tend to occur as mood improved, with less interaction occurring as mood worsened.

f. Total. The sum score of the object relations aspects would similarly covary with mood.

g. Level. In the EM scoring system used here, the total object relations score was categorized into four levels. These levels were hypothesized to bear a relationship to mood such that improved mood would correlate with a higher level score. The converse was also expected.

5. Givingness. Subjects whose mood was better at test two were hypothesized to have more positive themes of giving and receiving care from others, especially in adult-child interactions. Such positive thematic content included affection, attention, support, and protection. Subjects whose mood becomes more negative will have less givingness and more experiences of care deprivation in their early memories.

6. Mastery. Subjects whose mood improved would

have more successful and positive mastery experiences in their memories. The converse would be true for those whose mood worsened.

7. Mutuality. Subjects whose mood improved would have more positive and cooperative sibling and peer interactions. The opposite trend was hypothesized to occur for those whose mood worsened.

8. Damage. Subjects whose mood improved would describe less damage to themselves, others, animals, and inanimate objects in their memories. Those whose mood worsened would describe greater damage.

9. Relation to reality. The overall degree of clarity, coherence, and logic of the reported events in the early memories would be greater as mood elevated and less as mood worsened.

The following study examined these hypothesized relationships between mood and earliest childhood recollections in order to clarify the meaning of early memories with respect to the competing theories described above. The focus upon these early memory variables was chosen so that the temporal stability of earliest childhood recollections and mood influences upon their descriptions might be ascertained.

METHOD

Subjects

Fifty-two undergraduates, 35 females and 17 males, attending a Catholic university in a large midwestern city were recruited from psychology courses. Each subject received 2 credits for their participation as part of a departmental option which allows for a limited number of extra credit points to be awarded to students who participate in psychological experiments.

Subjects ranged in age from 17 to 22 with a mean age of 19.7 years. They were of diverse racial background: 55.77% white, 19.23% black, 11.54% Hispanic, 7.7% Asian, and 5.77% of unknown origin.

The subject attrition rate between administrations was 18.75% or 12 of the original 64 subjects who completed the first half of the procedure. In the majority of cases, attrition was due to students having withdrawn from their respective psychology courses at some point during the 8-12 (mean of 10.0) week retest interval.

Materials

Profile of Mood States (POMS)

This self-administered questionnaire (McNair, Lorr, & Droppleman, 1971) was designed to sample the contemporary affective state of the individual. The subject was presented with a list of 65 possible moods, and instructed to indicate (on a five-point Likert scale) to what degree he/she has or has not experienced each feeling "during the past week including today". (See Appendix A.) Thus, this instrument provided information regarding moods that are short-term but not momentary. Scores were tallied by summing respondents' total responses for each of the six following factors: Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, Confusion-Bewilderment. A seventh factor, Total Mood Disturbance, was calculated by subtracting subjects' scores for Vigor-Activity from the sum of the other five scales. The raw score for each factor was converted to T scores, according to norms provided in the manual.

Multiple Affect Adjective Check List Revised (MAACL-R)

The trait version of the MAACL-R (Zuckerman &

Lubin, 1967) measures moods that respondents consider to be typical of themselves. This self-administered instrument directs subjects to endorse items that are descriptive of how they "generally feel" by checking off from a list of 132 mood-related adjectives the items that apply to themselves. (See Appendix B.) The adjectives presented load on the following scales: Anger, Depression, Hostility, Positive Affect, and Sensation Seeking. Separate scores for each of these factors were calculated by adding the relevant items checked by the respondent. A sixth factor, Dysphoria, was obtained by adding the subject's scores for anger, depression and hostility. T score conversions were made according to norms for each raw score obtained.

Early Memory Questionnaire (EMQ)

This survey, a modified version of the instrument used by Mayman (1968), contains written instructions requiring subjects to "think back to the earliest memory you have of a specific happening or event from your childhood...." and to describe that event in as much detail as possible. To enable scoring, an inquiry was conducted regarding the aspect of the memory that was

clearest and the strongest feeling that is associated with the memory. (See Appendix C.) Data provided by this instrument was of a written narrative nature, requiring use of a coding system to categorize and quantify the information obtained. In this study, a modified version of The Comprehensive Early Memory Scoring System (Last & Bruhn, 1983) was utilized.

Procedure

Subjects attended two sessions lasting approximately 40 minutes each. Informed consent was obtained, and subjects were asked to complete the two affect measures with reminders to read the instructions for each carefully. Next they completed the Early Memory Questionnaire. Subjects returned 8-12 weeks later (mean retest interval was 10.0 weeks) to complete the second half of the experiment. For this retest, subjects were given exactly the same instruments and instructions as above.

The memories were coded according to a modified version of The Comprehensive Early Memory Scoring System developed by Last and Bruhn (1983). A summary of the scoring system is presented in Appendix D. This system

includes separate ratings of object relations, thematic content, and degrees of damage, realisticness, and pleasantness or unpleasantness of the memories (see hypotheses). Specifically, the scoring system was organized as follows:

1. Total Change was the number of early memory variables that differed from test one to test two. Each changed variable was worth one point. However, if the respondent gave a completely different memory event at the retest, this change in early memory content was weighted at five points.

2. Pleasantness of Memory related to the affective tone of the events described in the memory, as stated by the subject and as determined by the rater. The rater was instructed to score on the basis of how an "objective observer" might have construed the experience described, ignoring how the subject felt about it. The affective tone was scored on a 3-point scale of pleasant (high score), neutral or mixed, and unpleasant (low score).

3. The Object Relations categories consisted of four 3-point scales: "View of Self", "View of Environment", "Individual Distinctiveness", and

"Interpersonal Contact"; and one scale, "View of Others", which had 4-points. The scale point meanings tend to be set such that a score of 3 denoted a very positive or enhanced perception of the variable in question, a score of 2 was mixed or moderate, and a score of 1 was more purely negative or, the case of distinctiveness and interpersonal contact, unembellished and isolative. The "View of Others" scale differed in that it contained a score (the lowest of the four) for others not present or very peripheral to the memory event as well as others perceived as satisfying, mixed, or frustrating. As noted in the hypotheses, the five specific aspects of object relations were then summed ("Total") and grouped into "Levels".

4. Givingness. Scores of 0 were coded if the early memory did not contain themes related to dependency, receiving or being deprived of care, etc. If such themes were present, scores of +1 indicated positive interactions in this regard and scores of -1 were assigned for poor dependency relations. If events were mixed or complex, multiple scores could be coded so that a total givingness score could range from +2 to -2 (5-points).

5. Mastery. If the memory in question did not contain a theme denoting an instrumental relationship between the subject and the environment, a score of 0 was assigned. If this theme was present, the event was scored on three dimensions: "activity" (whether the behavior was self-initiated or encouraged), "attitude" (whether the behavior was cooperative or resistant and hostile), and "outcome" (leading to success/satisfaction or failure). These dimensions were scored separately so that the respondent's total mastery score could range from -2 to +3 (6-points).

6. Mutuality was also scored on a 6-point range from -2 to +3. If themes related to sibling or peer relationships were present in a memory, they were assessed according to how positive and cooperative the interactions were as well as how actively involved or engaged the subject was.

7. Damage. A score of 0 was assigned if the dimension in question was not contained in the memory, that is, if there were no other people, no animals, no inanimate objects. A score of 1 was assigned if those entities were present and healthy or unharmed. Higher scale points were coded depending on degree of damage,

from minor injury or illness to death or total destruction. Also scored on this scale was emotional harm (fear, anxiety, upset) experienced by self and other characters in the memory. Scales for each dimension were on a 6-point range (0 to 5).

8. Relation to Reality. This variable addressed the degree to which events described in the memory were believable, logical, and coherent. A 3-point scale was used such that a score of 1 represented the most illogical and unbelievable and a score of 3 was coded for memories that were entirely clear, connected and believable

Trained judges, who were blind with respect to the results of the affect measures, scored the EMQ's independently after achieving sufficient inter-rater agreement on pilot data. (Kappa coefficients obtained had a median of .81 for individual early memory variables, and a range of .53 to 1.00, see Appendix E.) Twenty-nine percent (n=30) of the memories were later randomly sampled for a check on the stability of inter-rater agreement. It was found that rates of agreement for the study sample remained consistent with those of pilot data (range of .52 to 1.00). Furthermore, this

30% sub-sample was conferenced to achieve 100% agreement on each memory variable rating.

The mood measures were scored according to manual instructions, including calculations of T scores for each raw factor score obtained using college student norms. The only exception to common scoring practices was that for the MAACL-R, the "sensation seeking" dimension was not utilized as its meaning as an affective variable was unclear.

RESULTS

The first question this investigation addressed was whether mood changes occurred between administrations one and two. The data were analyzed to assess degree of overall temporal stability for all mood variables. Both Pearson correlation coefficients, (see Table 1), and paired, two-tailed t tests were generated for this purpose. There appeared to be a moderate degree of variation in mood across testings. Test-retest correlations ranged from .16 to .52, although highly significant, indicating at least 73% of the variance in the second affect scores was unrelated to the first test scores.

Tests of significance which compared the mean differences between scores for each of the different mood factors showed no significant differences between the two administrations. However, no significant differences were expected since no experimental manipulation took place that would tend to change the subjects' moods in one particular direction. Since subjects' mood state changes would be expected to occur, by chance, in different directions and in some cases not

TEMPORAL STABILITY (RETEST RELIABILITIES)
OF STATE AND TRAIT MOODS

Pearson Correlation Coefficients

<u>State Mood</u>		<u>Trait Mood</u>	
tension- anxiety	.44***	anxiety	.41***
depression- dejection	.45***	depression	.27*
anger- hostility	.16 (n.s.)	hostility	.35*
fatigue- inertia	.52****		
confusion- bewilderment	.49****		
total mood disturbance	.45***	dysphoria	.38**
vigor- activity	.43***	positive affect	.36*

* $p < .05$

** $p < .01$

*** $p < .005$

**** $p < .001$



at all, the means should be about equal, as was found.

These data indicated that enough mood variance occurred to justify subsequent explorations of the relationship between mood and memory change. Follow up analyses investigating these relationships excluded subjects whose mood scores did not differ at all from test one to test two on the particular affect factor in question. The number of these excluded individuals tended to be small, ranging from 0 to 6 subjects (0 to 11.5% of the sample) for the 7 "state mood" variables used in this study. The mean percentage of subjects with a 0 difference score on any state mood factor was 7.14% (or 3.7 subjects).

As would be expected, a greater number of subjects showed no mood differences on the MAACL-R factors. Since this instrument was designed to measure trait affect, this trend is appropriate. Follow up analyses excluded a greater number of subjects than was necessary for the POMS analyses since more subjects demonstrated no trait mood differences across testings: 9 to 20 subjects (17.3 to 38.5%) with a mean of 11.8 or 22.68%.

On the other hand, it is also important to

observe the results obtained when mood stability figures for both affective measures were specifically compared to norms provided in the POMS and MAACL-R manuals. This preliminary comparison was made so that the typicality of this sample might be ascertained with regard to degree of mood variation for an eight to twelve week period. These mood factor test-retest reliability coefficients as presented in Table 1 reveal some counter-intuitive findings. That is, test-retest reliability for the MAACL-R factors was, overall, much lower for this sample than is reported in the manual (Zuckerman and Lubin, 1967). The range of MAACL-R reliability coefficients for this study was .27 to .41 with a mean of $\bar{r} = .35$, whereas their figures are .39 to .64 with a mean of $\bar{r} = .56$. In fact, the correlations for the MAACL-R trait mood were lower than those for the POMS state mood variables.

Because of the peculiar findings with regard to the stability of POMS and MAACL-R scores, another check on mood effects was made by pairing similar POMS and MAACL-R factors for both survey administrations via two-tailed Pearson correlation analyses (see Table 2). This table indicates to what extent state mood correlated

TABLE 2

CORRELATIONS OF SIMILAR POMS AND MAACL-R MOODS

Variable	<u>Test 1</u> <u>r</u>	<u>Test 2</u> <u>r</u>
State: tension and Trait: anxiety	.57****	.53****
State: depression and Trait: depression	.60****	.60****
State: anger and Trait: hostility	.47****	.43***
State: total mood disturbance and Trait: dysphoria	.65****	.55****
State: vigor and Trait: positive affect	.30*	.48****

* $p < .05$ *** $p < .005$ **** $p < .001$

with subjects' reports of how they generally feel. Highly significant correlations are generally apparent, with a range from .30 to .65, and a mean of $\bar{r} = .52$. While a moderate degree of overlap would be reasonably expected, these high correlations also suggest that subjects' perceptions of typical moods might very well be tainted by the mood they are experiencing at present. This is particularly possible since the POMS/MAACL-R coefficients in Table 2 are much higher on the average than MAACL-R reliability coefficients shown in the right-hand column of Table 1.

The second basic question examined was whether there were changes in earliest memories over the sampled time period. The stability of memory was ascertained by calculating both Pearson product-moment correlation coefficients and paired t tests for each memory variable over time. These findings are presented in Tables 3 and 4. Table 3 indicates many moderately strong correlations between test administrations, with a range of .18 to .69 and a mean of $\bar{r} = .48$. Ten of the 17 early memory indices were correlated beyond the .001 probability level. Only two variables were not correlated: givingness and damage to animals.

TEMPORAL STABILITY (RETEST RELIABILITIES)
OF EARLY MEMORY VARIABLES

Variable	<u>r</u>
<u>Pleasantness of Content</u>	
by Subject	.53****
by Rater	.49****
<u>Object Relations</u>	
View of Others	.48****
View of Self	.69****
View of Environment	.41***
Individual Distinctiveness	.38**
Interpersonal Contact	.52****
Total Score	.61****
Level	.44***
<u>Givingness</u>	.23
<u>Mastery</u>	.58****
<u>Mutuality</u>	.56****
<u>Damage</u>	
to Self	.60****
to Others	.33*
to Animals	.18
to Objects	.33*
<u>Relation to Reality</u>	.56****

* p < .05

** p < .01

*** p < .005

**** p < .001

TESTS OF SIGNIFICANT DIFFERENCES
IN EARLY MEMORY VARIABLES
FROM TEST ONE TO TEST TWO

Variable	t value
<u>Pleasantness of Content</u>	
by Subject	0.68
by Rater	0.35
<u>Object Relations</u>	
View of Others	-1.03
View of Self	-1.00
View of Environment	-0.96
Individual Distinctiveness	-0.81
Interpersonal Contact	-0.23
Total Score	-1.64
Level	-2.24*
<u>Givingness</u>	-1.75
<u>Mastery</u>	0.00
<u>Mutuality</u>	0.78
<u>Damage</u>	
to Self	0.52
to Others	0.00
to Animals	-0.37
to Objects	0.96
<u>Relation to Reality</u>	0.63

* $p < .05$

Similarly, t tests demonstrated only one significant difference, for Object Relations Level ($t = -2.24$, $p < .05$), in early memory variables across testings. Other t scores tended to be quite small (0.00 to -1.75) and, therefore, indicative of only minor variance between administration one to two.

These two analyses demonstrated that there was instability in early memories. The range of correlations between the two administrations reveals at least 63% of the variance in the second memory scores was unrelated to initial memory score values, suggesting that further analyses of early memory changes would be justified.

It is worth noting that another index related to early memory change was highly suggestive of a great deal of overall memory variability for this sample. That is, 20 of the 52 subjects (38.46%) reported a completely different event for their earliest memory at retest. This kind of difference in early memory content was calculated into "Total Change" effects in follow up analyses and weighted as compared to other more specific aspects of memory change.

Since the proportion of subjects who reported an

entirely different earliest memory was relatively large, two additional analyses were undertaken in order to understand this effect. First, Pearson correlations were calculated pairing this "memory change" variable and degree of mood difference for each of the various mood factors. No significant results were obtained among these relationships. However, it should be noted that memory change is a highly restricted variable in this point-biserial analysis (2 points: 0 for "same event given" and 1 for "different event") with very little power to capture such an effect if it does exist.

Second, this phenomenon was explored by comparing subjects who reported the same memory event and those who reported a different event by the degree of mood shifts they experienced from Test One to Test Two. Grouped t tests revealed no significant differences between the two groups on amount of mood change, including their reports of all state and trait mood factors.

With these preliminary analyses taken into account, the nine specific hypotheses and their subgroupings were examined. For each hypothesis, the possibility of memory changes covarying with mood

changes was explored by running Pearson product-moment correlations between mood difference scores and memory difference scores. In other words, a distribution of difference scores for each mood factor and each memory variable was first computed. These difference scores became the variables of investigation for the subsequent statistical analyses.

In order to complete these analyses, for each mood explored, subjects were separated into two groups: those whose mood worsened, becoming more negative or less positive at the retest (Group 1), and those whose moods improved at the second administration (Group 2). As explained above, subjects whose reported mood did not change at all for the state or trait mood variable in question were excluded from this analysis. Thus four sets of analyses were examined:

1. state mood differences by early memory differences for group 1 (people feeling worse at retest)
2. state mood differences by early memory differences for group 2 (people feeling better at retest)
3. trait mood differences by early memory differences for group 1 (feeling worse at retest)
4. trait mood differences by early memory differences

for group 2 (feeling better at retest).

For the sake of facilitating clarity in interpretation, the results of these analyses are presented in 5 tables rather than four: Tables 5 through 9. Table 9, the additional table, was developed to look at positive mood effects separately.

In order to understand the results presented in these tables it is helpful to be reminded of the meanings of early memory scores as explained in the procedure section. For all variables except damage, higher scores denote better, more positive outlooks while lower scores signify perceptions that are more negative. For the four damage variables, the meanings are reversed, with higher scores indicating greater damage and, thus, being construed as more negative. In addition, as the total change index is not calculated by direction of shifts but by summing the changes on all early memory variables, it was expected to correlate positively with all mood changes in general, be they positive or negative.

Subsequently, according to the hypotheses, for both groups 1 and 2, negative correlations were expected for all of the early memory variables except damage when

TABLE 5

**CORRELATIONS OF MEMORY CHANGES BY MOOD CHANGES
FOR GROUP 1 (MOOD WORSE AT RETEST)**

<u>Memory Variables</u>	<u>Negative State Moods</u>					
	Tension	Depre	Anger	Fatigue	Confusion	TMD
<u>Total Change</u>	.35*	.41*	.16	.22	.16	.58***
<u>Pleasantness</u>						
by Subject	-.13	-.12	-.24	-.26	-.35	-.27
by Rater	.03	-.15	.03	.2	.22	.01
<u>Object Relations</u>						
Others	.06	.12	.06	-.08	.07	.13
Self	.04	-.05	.02	.15	.54**	.14
Environment	-.07	-.04	.14	-.02	-.20	-.11
Distinctiveness	-.07	.17	.15	.22	.17	.31
Contact	-.06	-.03	.28	.11	.25	.14
Total	.02	.11	.27	.13	.30	.26
Level	-.02	.04	.23	-.07	.00	.14
<u>Givingness</u>	.01	-.17	.19	.08	.17	.02
<u>Mastery</u>	-.01	-.14	-.34	-.13	-.14	.08
<u>Mutuality</u>	-.09	-.18	-.32	-.03	.16	.07
<u>Damage</u>						
Self	-.12	.07	-.11	.06	.32	.13
Others	-.32	-.18	-.13	-.22	-.33	-.23
Animals	-.03	.22	.28	-.17	---	.36*
Objects	-.06	.02	.11	-.21	.09	.29
<u>Relation to Reality</u>	-.00	.01	.12	-.01	.13	-.05

Note: The p values are one-tailed.

Depre = Depression
TMD = Total Mood Disturbance

* $p < .05$
 ** $p < .01$
 *** $p < .005$
 **** $p < .001$

coupled with negative state and trait moods (Tables 5 through 8). For all of those variables, except damage, paired with positive moods, positive correlations were expected (Table 9). Again, for damage the expected trends are reversed: positive correlations with negative moods, and negative correlations under positive mood conditions.

Table 5 reflects Group 1 correlations (mood worse at retest) for negative state moods. Three significant correlations were found, with two in the predicted directions. For instance, three out of six coefficients relating to total amount of memory change showed a meaningful covariance with state mood, that is, amount of change in tension, depression and general mood disturbance (r 's = .35, .41, $p < .05$, and $r = .58$, $p < .005$, respectively). In addition, two other relationships were found. "View of Self" scores, counter to expectations, related positively to confusion ($r = .54$, $p < .01$) meaning that the subjects' increased feelings of confusion correlated with better views of themselves in their memories. Finally, total mood disturbance scores were significantly related to "Damage to Animals" ($r = .36$, $p < .05$). This figure demonstrates

that greater overall negative mood (or perhaps less positive state mood to offset it) was associated with greater damage to animals being reported in the early recollections for this group.

Table 6 indicates several associations in the predicted direction, although, most mood and memory relationships did not differ significantly from zero. These figures are for Group 2, subjects whose mood improved at retest with regard to the given mood state. The majority of the significant relationships found between mood and early memory change had to do with object relations. "View of Others" covaried significantly with mood on four of the five POMS factors. "View of Self" was related to decreases in tension, confusion, and total mood disturbance ($p < .05$). "Interpersonal Contact" also revealed a significant negative relationship to confusion ($r = -.38$, $p < .05$), meaning that as confusion scores decreased, early memory descriptions of interactions with others were enhanced. "Total" object relations score and its associated "Level" also showed significant relationships to anger and confusion. That is, as anger and confusion scores decreased, object relations measures increased.

**CORRELATIONS OF MEMORY CHANGES BY MOOD CHANGES
FOR GROUP 2 (MOOD BETTER AT RETEST)**

<u>Memory Variables</u>	<u>Negative State Moods</u>					
	Tension	Depre	Anger	Fatigue	Confusion	TMD
<u>Total Change</u>	.01	-.10	-.13	.17	-.09	.07
<u>Pleasantness</u>						
by Subject	-.02	-.11	-.01	-.27	.03	-.13
by Rater	.07	-.15	.10	-.39*	.01	-.14
<u>Object Relations</u>						
Others	-.40*	-.41*	-.45*	.29	-.68****	-.38*
Self	-.43*	-.28	-.20	.27	-.34*	-.38*
Environment	.19	-.09	-.08	-.33	-.13	-.06
Distinctiveness	-.14	.27	-.03	.06	-.11	.31
Contact	-.02	-.17	-.27	-.09	-.38*	-.11
Total	-.30	-.30	-.39*	.08	-.61***	-.26
Level	-.32	-.27	-.42*	-.14	-.53***	-.20
<u>Givingness</u>	.22	-.07	.02	.12	-.22	.10
<u>Mastery</u>	.06	-.17	-.30	-.25	.10	.22
<u>Mutuality</u>	.09	.07	-.25	.11	-.14	.05
<u>Damage</u>						
Self	-.30	.02	-.20	.35	.00	.00
Others	-.04	.23	-.06	.27	-.22	.06
Animals	-.09	-.02	-.26	-.16	-.27	-.26
Objects	.20	.32	.20	.50*	.12	.36*
<u>Relation to Reality</u>	-.24	-.41*	-.21	.00	-.35*	-.28

Note: The p values are one-tailed.

Depre = Depression

TMD = Total Mood Disturbance

* $p < .05$

*** $p < .005$

**** $p < .001$

Taken together, these results indicate that for subjects whose moods improved at retest, mood congruence effects in the area of object relations were particularly evident.

Other predicted relationships for this group occurred for fatigue with "Pleasantness by Rater", for fatigue and total mood disturbance with "Damage to Objects", and for depression and confusion with "Relation to Reality". Therefore, 18 of the hypothesized relationships were demonstrated for negative mood states and memory among subjects who were feeling better at retest. All significant results for this group were in accordance with predictions. The findings in this table seem to indicate a strong mood congruence effect for people whose moods improved.

Table 7 focuses on Group 1, those whose moods were more negative at the retest, but this time looks at dysphoric "trait" moods. For this group there are only a few significant effects, but all are in the predicted direction. For instance, "Total Change" is positively related to anxiety ($r = .38$, $p < .05$), meaning that the more this group changed in their ratings of how anxious they generally are, the more their early memories

CORRELATIONS OF MEMORY CHANGES BY MOOD CHANGES
FOR GROUP 1, REPORTED TRAIT MOOD WORSE AT RETEST

Negative Trait Moods

<u>Memory Variables</u>	Anxiety	Depression	Hostility	Dysphoria
<u>Total Change</u>	.38*	.40	.08	.33
<u>Pleasantness</u>				
by Subject	-.14	-.12	.31	.03
by Rater	-.17	-.66*	.13	-.26
<u>Object Relations</u>				
Others	-.08	.02	-.43*	.05
Self	.01	-.33	-.08	-.15
Environment	-.06	-.22	.17	-.04
Distinctiveness	.08	-.08	-.03	.09
Contact	.05	.10	.19	.05
Total	-.01	-.18	-.03	.02
Level	-.08	-.09	-.14	.00
<u>Givingness</u>	-.04	-.33	-.00	-.22
<u>Mastery</u>	-.05	.14	-.17	.01
<u>Mutuality</u>	-.08	---	-.08	-.13
<u>Damage</u>				
Self	.08	.28	-.05	.06
Others	-.01	-.20	-.11	-.02
Animals	.22	---	-.17	-.02
Objects	.35*	.14	.19	.17
<u>Relation to Reality</u>	-.14	.12	-.30	.10

Note: The p values are one-tailed.

* $p < .05$

changed. "Pleasantness by Rater" showed a significant correlation with reported trait depression ($r = -.66$, $p < .05$), indicating that the more depressed subjects reported themselves as usually feeling, the more unpleasant raters construed their early recollections. In addition, the object relations variable "View of Others" was significantly correlated with trait hostility, ($r = -.43$, $p < .05$), as predicted, while "Damage to Objects" covaried significantly with trait reported anxiety ($r = .35$, $p < .05$).

The last of the tables concerning negative affective states is Table 8, Group 2 in terms of "trait moods". Just as this group of subjects feeling better at Test Two showed more mood congruence effects on the POMS, they also show a greater number and more potent effects on the MAACL-R measures. Most of these significant relationships occurred among the object relations variables. There are 15 such predicted covariations in all, nine of which are significant beyond the .005 probability level. Moreover, "Object Relations Total" and "Levels" were significantly related to all four of the negative trait moods presented. These findings constitute strong evidence that as

CORRELATIONS OF MEMORY CHANGES BY MOOD CHANGES
FOR GROUP 2, REPORTED TRAIT MOOD BETTER AT RETEST

<u>Memory Variables</u>	<u>Negative Trait Moods</u>			
	Anxiety	Depression	Hostility	Dysphoria
<u>Total Change</u>	-.17	-.17	-.03	-.19
<u>Pleasantness</u>				
by Subject	.06	-.10	-.02	-.11
by Rater	.23	-.10	.09	-.08
<u>Object Relations</u>				
Others	-.72****	-.38*	-.31	-.50**
Self	-.53*	-.34	-.70****	-.56****
Environment	.02	-.23	-.02	-.10
Distinctiveness	-.21	-.30	-.48*	-.27
Contact	-.19	-.23	-.27	-.27
Total	-.51*	-.63***	-.64***	-.62***
Level	-.55**	-.59***	-.61***	-.55***
<u>Givingness</u>	.26	-.13	.08	.26
<u>Mastery</u>	-.03	.14	-.04	-.08
<u>Mutuality</u>	.02	.10	-.14	-.21
<u>Damage</u>				
Self	-.10	.11	-.06	-.19
Others	-.22	-.27	-.39*	-.33
Animals	-.18	.12	.18	-.15
Objects	-.07	.08	-.19	.09
<u>Relation to Reality</u>	-.66***	-.45*	-.56**	-.60***

Note: The p values are one-tailed.

* p < .05

** p < .01

*** p < .005

**** p < .001

people's typical feelings improve, their cognitive-affective schemata regarding self and others shows a clearer relationship to their change in moods.

Also noteworthy on Table 8 are the significant correlations of "Relation to Reality" to each of the four negative trait moods used in this study. These data signify that, particularly for "mood improvers", dysphoric moods and logical, coherent early memory presentations are negatively related. Finally, one correlation of hostility with "Damage to Objects" ($r = -.39$, $p < .05$) ran counter to predictions. That is, greater hostility was related to less reported damage for this group.

Table 9 summarizes data on all positive moods addressed by this study, both state and trait measures for Groups 1 and 2. Only a few significant correlations are apparent, and only for Group 2. This completes the pattern of greater mood congruence effects occurring with people's whose moods improved across testings. Similar to trends discussed previously, most of these effects are found under the object relations variables: "View of Others, Self", and "Interpersonal Contact". All of these significant relationships were in the

CORRELATIONS OF MEMORY CHANGES BY MOOD CHANGES
FOR BOTH GROUPS, POSITIVE STATE AND TRAIT MOODS

	<u>State Mood</u>		<u>Trait Mood</u>	
	<u>Vigor</u>		<u>Positive Affect</u>	
	Group 1 (worse)	Group 2 (better)	Group 1 (worse)	Group 2 (better)
<u>Memory Variables</u>				
<u>Total Change</u>	-.27	-.15	-.30	.25
<u>Pleasantness</u>				
by Subject	.23	-.14	-.21	-.08
by Rater	.01	-.23	.27	-.08
<u>Object Relations</u>				
Others	-.08	.41*	.21	.18
Self	.06	-.25	-.09	.45**
Environment	-.06	-.29	-.17	-.23
Distinctiveness	.07	.01	.11	-.10
Contact	-.07	.24	.24	.33*
Total	-.05	.04	.08	.21
Level	.11	.07	.15	.24
<u>Givingness</u>	-.19	-.22	-.19	-.05
<u>Mastery</u>	.15	-.06	-.02	-.06
<u>Mutuality</u>	-.04	.08	-.04	.25
<u>Damage</u>				
Self	-.12	.49*	-.02	.19
Others	-.00	.22	-.04	.12
Animals	-.11	.29	---	.06
Objects	-.09	.26	-.02	.13
<u>Relation to Reality</u>	.13	-.35	-.06	.47**

Note: The p values are one-tailed.

* p < .05

** p < .01

predicted directions, with more positive outlooks corresponding to mood changes in a positive direction.

Two other significant correlations appear on this table. "Relation to Reality" shows a strong positive co-occurrence with positive trait affect ($r = .47$, $p < .01$), again for the group feeling better at retest. This statistic demonstrates that increases in positive trait affect are related to more logical, coherent memory descriptions, similar to when the previously noted decrease in negative mood states takes place.

"Damage to Self" correlated significantly with vigor (state mood), but in the opposite direction expected ($r = .49$, $p < .05$). That is, as positive mood increased for this group, so did the amount of damage they attributed to themselves in their early memories. This is the second counter-intuitive finding for degree of damage that has appeared in these analyses, both occurring for the group feeling better at Test Two and both in connection with trait rather than state mood changes.

In summary, the first hypothesis presented in the introduction was supported by the data. Early memory change was related to mood state change for a number of

variables examined. The total amount of early memory change (Hypothesis Two) covaried significantly with increases in negative state mood. No relationship was found for moods that became more positive. Therefore, the second hypothesis was partially supported.

The third hypothesis, that pleasantness of memory content would correlate with mood shifts, was not supported. Two of the 48 relationships examined demonstrated significant covariance. Less fatigue at administration two was related to more pleasant memories as judged by raters. Reports of increased trait depression were related to early memories becoming less pleasant as perceived by raters.

The fourth hypothesis was that object relations variables would change in relationship to mood. This hypothesis was supported to a great extent. View of Others, Self, Object Relations Total, and Level showed many significant relationships to mood change in the predicted direction. The significant correlations occurred primarily for subjects whose moods improved at retest.

The fifth through seventh hypotheses predicted that mood shifts would correlate with changes in the

thematic variables, Givingness, Mastery, and Mutuality. These hypotheses were not supported. No significant relationships were found for any of the mood factors examined.

The eighth hypothesis stated that descriptions of physical and emotional damage would covary with changes in mood. Six significant relationships were revealed, one opposite of what was predicted. These relationships demonstrated no particular pattern in that they occurred for both groups on a variety of state and trait mood factors.

The ninth hypothesis was that changes in the degree of clarity and logic with which early memories were presented (Relation to Reality) would be related to mood shifts. This hypothesis was supported for subjects whose mood improved at the second administration on 7 of the 14 mood factors investigated.

DISCUSSION

The results presented provide impressive evidence regarding early memory change. The data illustrate that a relationship exists between naturally-occurring mood and earliest childhood recollections. The temporal stability of earliest memories was discovered to be lower than expected by clinical models. Much of the variance that occurred for the memories was associated with changes in naturally-occurring mood states, particularly for affective shifts in a positive direction.

The first and most general of the hypotheses addressed by this study was that changes in early memories would correlate with changes in mood, such that mood elevations would be related to more positive descriptions, perceptions, and attributions in memories, and mood changes in a negative direction would correspond to poorer, more pessimistic early memory attributions.

This overriding hypothesis was supported by the data on several important early recollection variables. Some remarkably strong relationships emerged in the

structural aspects of early memories, (i.e., object relations), especially for subjects whose mood improved at retest. Other areas such as thematic content showed no significant mood congruence effects. These discoveries have important implications for the debate about the stability as well as the significance of early memories. The findings seem to lend qualified support to both schools of thought about the stability of early memories.

First, the general stability of thematic content, independent of the influence of mood, supports Adlerian notions about early memories. The fact that basic themes tend to persist provides evidence to support Adler's claim that the content of early recollections is related to central and highly stable core issues for the individual (1937). Such basic struggles would be expected to last for many years if not across the entire life span. This thematic stability also suggests that Bruhn's tenet (1984) that early memory themes are indicative of blocked goals or "unfinished business" may have validity.

On the other hand, the notion of thematic stability in early memories requires qualification. In

this investigation, the theme of "givingness" was found to have a lower (and non-significant) test-retest correlation than other themes explored. However, this may be due to the manner in which this theme was conceptualized and scored. More so than the others, it would appear to be related to and influenced by structural or object relations components of memory in that it is very interpersonally oriented. "Givingness" was specifically conceptualized to address issues related to nurturance from caregivers and is, therefore, similar to the need satisfaction and frustration criteria used to rate "View of Others".

In addition, all three themes showed some variation across testings, although the variation was not related to mood shifts. This leaves open the question as to what factors account for thematic variability in early memories, a question that can not be answered here.

The second hypothesis under investigation was related to degree of early memory change. It was thought that individuals whose early memories changed on a greater number of variables, particularly if they narrated a different memory event altogether, would have

experienced a correlative change in mood. This hypothesis was partially supported. Interestingly, the expected effect was found for individuals whose mood became more tense (state), anxious (trait), depressed (state), and generally more dysphoric (state) at Test Two. Those whose mood improved did not demonstrate an associated degree of overall memory change, although they did shift remarkably in certain specific respects, namely object relations and relation to reality.

This phenomenon that increases in negative mood were associated with greater total memory change is in sharp contrast to the pattern found for most of the early memory variables when analyzed separately, namely that stronger and more numerous effects were found for people who experienced a mood elevation between testings. This discrepancy in the results indicates that effects for dysphoric moods were less pronounced with regard to specific qualitative aspects of early memories, but were present nonetheless. It seems that the effects of negative affective shifts upon the recollection of early childhood events were less direct and less clearly a relationship of congruence between mood and memory. The influence of certain increasingly

negative mood states is subtle but equally pervasive and meaningful in that these states correspond to less early memory stability overall.

Although this latter finding on total memory change was demonstrated for descending mood only, it is generally supportive of mood congruence theories in that some association or link between memory and mood is implied. It may indicate dichotomous memory retrieval processes for more negative in contrast to more positive mood shift directions. Regardless of the explanation, however, it has been demonstrated that diffuse memory changes are related to negative mood swings. This finding has useful clinical implications in terms of what to expect in childhood-focused forms of therapy from clients who become more depressed or tense for a period of time. However, it should be recognized that the factors in operation for this effect of "total memory change" are not clearly understood from this investigation and warrant more exploration.

The third hypothesis under consideration had to do with the pleasantness or unpleasantness of early memory contents in relationship to mood changes. For the most part, no relationship was found between the

two, meaning that overall affective attributions (by subjects) or impressions (by raters) did not necessarily directly correspond to positive or negative shifts in people's moods. The exception to this finding, however, was that rater judgments did covary with mood shifts in two instances: for subjects whose mood had improved at the retest, an effect was found for state fatigue, and for subjects whose mood had become more negative at administration two, a relationship occurred for trait depression. Obviously, there does not appear to be a clear pattern for these results other than the fact that both moods showing a significant covariation with memory were negative. Further research would be needed to explain these anomalies.

Object relations variables (hypotheses 4a through 4g) showed the strongest and most frequent expected effects. While perceptions about safety and support in the environment were not related to any mood factors, and the distinctiveness with which others were described was significantly related to only one mood variable (trait hostility), the quality of other structural variables covaried with mood shifts as predicted in many instances.

On the other hand, one relationship found contradicted the hypotheses; that is, "View of Self" improved with increased feelings of confusion. It is not clear why this particular relationship would run counter to so many other object relations trends revealed in this study. It could be that since confusion is actually more of a cognitive state than an affective condition the relationship to early memory is more complex. For instance, perhaps subjects presented themselves more positively when experiencing greater confusion as a defense against damage to self-esteem or increased dysphoria. However, no conclusion about this effect can be reached at this time.

There was a marked correspondence between mood and object relations variables in many respects. The congruence effect was experienced primarily by people whose moods had shifted in a positive direction upon retest. The stronger effect for positive changes in mood implies that a "rose-colored glasses" sort of process may be taking place. That is, as people's moods become more positive, there is a tendency for these mood changes to influence their attributions with respect to early memories. This does not mean that the general

feelings associated with their early memories are entirely positive, however. It indicates, rather, that relative to when they are experiencing more negative moods, their early memory perceptions are more positive.

The relativity of this mood congruence effect fits in nicely with the concept of a range or continuum of object representations or cognitive/affective schemata existing for the individual, as proposed earlier. An individual's mood change may facilitate a shift in perceptions and attributions (or vice versa) about self and others somewhere along that person's characteristic range of experiencing. For a very positive or negative person these shifts may appear only as subtle mitigations, still establishing him/her as fairly positive or negative compared to other people. Again, this would explain why more drastic differences in overall mood pleasantness were not found for most early memories.

On the other hand, it should be kept in mind that changes in the total score and qualitative level of object relations were strongly related to decreases in negative mood. This covariation was particularly potent and consistent when reported trait moods improved.

Moreover, level of object relations was the one early memory variable that differed significantly with respect to the entire group upon retest. Considering the degree of change in perceptions that must occur to move an individual from one level rating to another, the difference in quality of object relations that occurred for many individuals across testings was quite remarkable.

This suggests that such a change would be noticeable to a psychotherapist as his/her client was recalling childhood memories in treatment. In fact, the positive mood shift which corresponds to more positive interpersonal perceptions may result in completely different memories being retold or focused on in a therapy session. Therefore, this kind of mood and memory congruence would be useful for clinicians to bear in mind when trying to understand their clients' contemporary feelings and attitudes as well as the clients' view of their childhood.

With respect to the theoretical debate about the processes underlying memory, it should be recognized that the mood congruence effect that has emerged for structural aspects of early memories is in keeping with

the sorts of mood and memory findings that have been noted in empirical studies for many years (Blaney, 1986). Overall, examination of the object relations aspect of early memories supports the idea that the recall processes in operation are influenced by mood or other short-term variables that would tend to cause some fluctuation and instability in people's perceptions of themselves and others.

The fifth through seventh hypotheses of this study involved the thematic content of early memories. As mentioned above, these components of childhood recollections appear to be moderately stable. When there is change, it does not seem to be related mood fluctuation. Further research is needed to identify those factors that do covary with thematic change. One possibility is that thematic elements of early memory are connected with developmental issues such as those framed by Erikson (1963), and Mahler (1972a, 1972b, 1972c). If so, the themes would tend to be more persistent than structural aspects of memory, but would still show some degree of change with maturation. For instance, it is likely that developmental themes related to separation and individuation would be present in the

early memories of young adults who are often experiencing conflicts and confusion about independence from family. As the resolution of this issue progresses, so too would the thematic content of their memories tend to shift.

Another perspective from which to examine the relative stability of early memory themes has been developed by McAdams (1985, in press). This approach emphasizes the generative meaning of memories and "nuclear episodes" (1985) to the individual. This life span perspective postulates that early memories are not only significant to the individual in the metaphorical sense that Adler theorized, but that there is a certain continuity and coherence to memory. McAdams' perspective also takes an Eriksonian approach in focusing on identity development. He hypothesizes that the individual remembers, organizes, and integrates experience toward a "life story". This "personal myth" provides "integrity, unity, and purpose", and the ongoing establishment of identity (in press). The life-story model of identity purposes, therefore, that early memory themes can also be investigated in terms of key

facets of identity that are developed and constructed throughout life.

In order to investigate these hypotheses about thematic elements of early memories, it seems that studies which follow subjects over a period of several years if not throughout the life span would be helpful. It would also be necessary to carefully separate structural and thematic variables in the data, since the present study suggests that structural aspects of these life-stories will be associated with fluctuations in mood.

The eighth hypothesis investigated the descriptions of physical and emotional damage or trauma in early memories. It was predicted that degree of damage attributed to self, other people, animals, and inanimate objects would covary with shifts in mood. Conclusions regarding mood relationships with attributions of trauma are difficult to make at this point because results were inconsistent. For the most part, relationships between mood and damage were not found. Some scattered effects were revealed for different kinds of damage, different moods and different subject groups, with no clear pattern emerging. In

fact, two correlations found were contrary to predictions, both for subjects whose mood had improved at the second administration. It seems that mood and recall of early illness or trauma were either unrelated or covaried as a function of a third or more factors. As speculated above, those factors might have to do with ego defenses. Another possibility is that sometimes mood improvements might exaggerate one's perceptions of negative events in the past. Future studies would be needed to investigate these possibilities.

The ninth and final hypothesis under scrutiny concerned the manner in which early memories were presented, as well as the logic and credulity of their contents. It was predicted that changes in mood would covary with degree of clarity, coherence, and believability in childhood recollections. Again, results were mixed such that a relationship was found only for subjects whose mood improved at the retest. For this group, the effect was fairly consistent except with respect to four mood variables, three negative state and one positive state affects. Thus, these findings seem to indicate that a strong relationship exists between mood improvement and more coherent,

realistic accounts of memory. This does not mean, however, that the opposite phenomenon occurs, that is, more dysphoric moods do not necessarily lead to or correspond with gross memory distortions or confusion. Interestingly, this conclusion concurs with cognitive theories of depression and empirical findings that depressed mood does not make people less realistic. In fact, depressed subjects are often shown to be more realistic in their perceptions of events than non-depressed subjects who tend to make slight distortions in a positive or self-inflating manner (Lewinsohn, Steinmetz, Larson, & Franklin, 1981).

In conclusion, the recurring pattern of mood and memory change for early childhood events is one of general congruence, particularly when mood shifts in a positive direction. This pattern is not invariable, but is certainly substantial. It applies primarily to the structural aspects of early memories, namely object relations. Mood congruence for positive affective shifts also occurs with respect to the clarity and coherence with which a memory is narrated.

These findings correspond to the results generally revealed in experimental research on memory,

and in research on the cognitive aspects of depression. The differences that emerged in this investigation between the effects of positive and negative mood changes parallel the differences found in research comparing cognitive styles of depressed versus non-depressed populations (Lewinsohn, et. al., 1981).

When mood shifts in a negative direction, fewer relationships or patterns to the qualitative aspects of early memories emerge. However, it seems that as mood becomes more dysphoric, a greater degree of overall memory variation occurs. This finding lends itself to further empirical exploration. It could be that a more complex or curvilinear relationship exists between negative mood changes and early memories. It is also possible that the covariation is actually stronger than the one found for this small and relatively homogeneous sample.

Other aspects of early memories do not appear to shift in relationship to mood change. The overall pleasantness or unpleasantness of memories retrieved is not necessarily correlated with changes in mood state. Perceptions regarding physical and emotional trauma are subject to temporal variation, but the factors that

influence the changes are probably complex and, as yet, undetermined. Investigation of this question would be another good focus for future studies on early memory.

Finally, thematic aspects of early memories appear to be moderately stable. These results support the predominant theories on early memory to which most clinicians subscribe. The changes in early memory themes that do take place do not covary with mood changes, but may be related to other factors such as a shift in the salience of developmental issues for the individual. Research that examines early memory themes over several years and from a life-span developmental perspective would be valuable contributions to the body of literature on early memories.

There were a number of limitations to the present study that bear attention in light of its potential generalizability, as well as recommendations for future research on early recollections. The sample size was relatively small and homogeneous in age span and level of education. Therefore, the population studied was narrow and possibly atypical. The degree to which this sample might differ from others in terms of degree of mood changes is not clear, but is an important issue for

replication. For instance, it is possible that stronger effects for negative mood shifts were not found because of the narrow or atypical nature of a college student population with respect to either mood or memory plasticity.

While the results found were surprisingly robust given the limits of the sample, it is important to recognize that generalizing these results to other populations must be done with caution. Future studies in this area should focus upon both broader, more heterogeneous samples and on specific types of clinical populations in order to compare effects. For instance, one question worth exploring is whether manic-depressive patients might show the same sort of congruence pattern as moods shift, or if there is a different mood and early memory process at work for this population.

The findings presented in this study provide remarkable evidence for the relationship between changes in mood and descriptions of earliest childhood recollections. It has been demonstrated that while certain aspects of early memories, such as themes, are relatively stable, the structural aspects of early recollections are less constant and more closely related

to contemporary mood states. As affect changes in a positive direction, memory shifts in object relations and clarity of memory presentation are particularly evident. When mood changes in a negative direction, memory changes also occur, although the affective tones of these changes are not necessarily congruent. However, replications of this procedure with different samples are needed in order to ascertain more conclusively the typicality of these findings and their appropriate application to the clinical use of earliest memories.

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APPENDIX A

NAME _____ DATE _____

SEX: Male Female

Below is a list of words that describe feelings people have. Please read each one carefully. Then fill in ONE circle under the answer to the right which best describes HOW YOU HAVE BEEN FEELING DURING THE PAST WEEK INCLUDING TODAY.

The numbers refer to these phrases.

- 0 = Not at all
- 1 = A little
- 2 = Moderately
- 3 = Quite a bit
- 4 = Extremely

IDENTIFICATION

1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	EXTREMELY		NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	EXTREMELY						
1 Friendly	0	1	2	3	4	21 Hopeless	0	1	2	3	4	45 Desperate	0	1	2	3	4
2 Tense	0	1	2	3	4	22 Relaxed	0	1	2	3	4	46 Sluggish	0	1	2	3	4
3 Angry	0	1	2	3	4	23 Unworthy	0	1	2	3	4	47 Rebellious	0	1	2	3	4
4 Worn out	0	1	2	3	4	24 Spiteful	0	1	2	3	4	48 Helpless	0	1	2	3	4
5 Unhappy	0	1	2	3	4	25 Sympathetic	0	1	2	3	4	49 Weary	0	1	2	3	4
6 Clear-headed	0	1	2	3	4	26 Uneasy	0	1	2	3	4	50 Bewildered	0	1	2	3	4
7 Lively	0	1	2	3	4	27 Restless	0	1	2	3	4	51 Alert	0	1	2	3	4
8 Confused	0	1	2	3	4	28 Unable to concentrate	0	1	2	3	4	52 Deceived	0	1	2	3	4
9 Sorry for things done	0	1	2	3	4	29 Fatigued	0	1	2	3	4	53 Furious	0	1	2	3	4
10 Shaky	0	1	2	3	4	30 Helpful	0	1	2	3	4	54 Efficient	0	1	2	3	4
11 Listless	0	1	2	3	4	31 Annoyed	0	1	2	3	4	55 Trusting	0	1	2	3	4
12 Peevish	0	1	2	3	4	32 Discouraged	0	1	2	3	4	56 Full of pep	0	1	2	3	4
13 Considerate	0	1	2	3	4	33 Resentful	0	1	2	3	4	57 Bad-tempered	0	1	2	3	4
14 Sad	0	1	2	3	4	34 Nervous	0	1	2	3	4	58 Worthless	0	1	2	3	4
15 Active	0	1	2	3	4	35 Lonely	0	1	2	3	4	59 Forgetful	0	1	2	3	4
16 On edge	0	1	2	3	4	36 Miserable	0	1	2	3	4	60 Carefree	0	1	2	3	4
17 Grouchy	0	1	2	3	4	37 Muddled	0	1	2	3	4	61 Terrified	0	1	2	3	4
18 Blue	0	1	2	3	4	38 Cheerful	0	1	2	3	4	62 Guilty	0	1	2	3	4
19 Energetic	0	1	2	3	4	39 Bitter	0	1	2	3	4	63 Vigorous	0	1	2	3	4
20 Panicky	0	1	2	3	4	40 Exhausted	0	1	2	3	4	64 Uncertain about things	0	1	2	3	4
						41 Anxious	0	1	2	3	4	65 Bushed	0	1	2	3	4
						42 Ready to fight	0	1	2	3	4	<p align="center">MAKE SURE YOU HAVE ANSWERED EVERY ITEM.</p> <p align="center">POMS 821</p>					
						43 Good natured	0	1	2	3	4						
						44 Gloomy	0	1	2	3	4						

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APPENDIX B

- 1 active
 2 adventurous
 3 affectionate
 4 afraid
 5 agitated
 6 agreeable
 7 aggressive
 8 alive
 9 alone
 10 amiable
 11 amused
 12 angry
 13 annoyed
 14 awful
 15 bashful
 16 bitter
 17 blue
 18 bored
 19 calm
 20 cautious
 21 cheerful
 22 clean
 23 complaining
 24 contented
 25 contrary
 26 cool
 27 cooperative
 28 critical
 29 cross
 30 cruel
 31 daring
 32 desperate
 33 destroyed
 34 devoted
 35 disagreeable
 36 discontented
 37 discouraged
 38 disgusted
 39 displeased
 40 energetic
 41 enraged
 42 enthusiastic
 43 fearful
 44 fine
 45 fit
 46 forlorn
 47 frank
 48 free
 49 friendly
 50 frightened
 51 furious
 52 gay
 53 gentle
 54 glad
 55 gloomy
 56 good
 57 good-natured
 58 grim
 59 happy
 60 healthy
 61 hopeless
 62 hostile
 63 impatient
 64 incensed
 65 indignant
 66 inspired
 67 interested
 68 irritated
 69 jealous
 70 joyful
 71 kindly
 72 lonely
 73 lost
 74 loving
 75 low
 76 lucky
 77 mad
 78 mean
 79 meek
 80 merry
 81 mild
 82 miserable
 83 nervous
 84 obliging
 85 offended
 86 outraged
 87 panicly
 88 patient
 89 peaceful
 90 pleased
 91 pleasant
 92 polite
 93 powerful
 94 quiet
 95 reckless
 96 rejected
 97 rough
 98 sad
 99 safe
 100 satisfied
 101 secure
 102 shaky
 103 shy
 104 soothed
 105 steady
 106 stubborn
 107 stormy
 108 strong
 109 suffering
 110 sullen
 111 sunk
 112 sympathetic
 113 tame
 114 tender
 115 tense
 116 terrible
 117 terrified
 118 thoughtful
 119 timid
 120 tormented
 121 understanding
 122 unhappy
 123 unsociable
 124 upset
 125 vexed
 126 warm
 127 whole
 128 wild
 129 wilful
 130 wilted
 131 worrying
 132 young

APPENDIX C

CODE: _____

Early Memory Questionnaire

Think back to the earliest memory you have of a specific happening or event from your childhood. Please describe it below in as much detail as your recollection of the event permits.

Describe an event you actually remember. For instance, leave out incidents that someone told you about yourself but you yourself don't actually recall. Also, include only a specific, one-time event ("I remember one time...") and not a recurring event ("I always used to...").

Be sure to include how the memory begins for you and how it ends, as well as how you felt about what happened. Also, list your approximate age at the time the event occurred.

Please answer each of the following questions about your earliest memory (from the previous page).

What is the clearest part of the memory?

What is the strongest feeling in the memory? What
thought or action is this feeling connected with?

If you could change the memory in any way, how would you change it?

APPENDIX D

Summary of the modified Comprehensive Early Memory Scoring System (Last & Bruhn, 1985):

1. Pleasantness of Content: Judged by subject and rater.
2. Object Relations: View of Others, View of Self, View of Environment, Individual Distinctiveness, Interpersonal Contact.
3. Themes:
 - A. Givingness
 1. Gives care to others
 2. Receives care from others
 3. Deprived of care
 4. Deprives others of care
 - B. Mastery
 1. Activity
 - a. Self-initiated
 - b. Encouraged by others
 2. Attitude
 - a. Cooperative
 - b. Hostile/Defiant/Resistant
 3. Outcome
 - a. Successful
 - b. Failure
 - C. Mutuality
 1. Cooperative with peers
 2. Observing peers at play
 3. Aggressive with peers
 4. Aggressed upon by others
4. Damage: Self, Others, Animals, Inanimate Objects
5. Relation to Reality: Degree of clarity, logic and credibility associated with the early memory.

APPENDIX E

Inter-rater reliability Kappa coefficients for pilot data:

1.	<u>Pleasantness of Content:</u>	
	A. Subject	.92
	B. Rater	.77
2.	<u>Object Relations:</u>	
	A. View of Others	.73
	B. View of Self	.92
	C. View of Environment	.62
	D. Individual Distinctiveness	.70
	E. Interpersonal Contact	.70
	F. Level	.53
3.	<u>Themes</u>	
	A. <u>Givingness</u>	
	1. Gives care to others	1.00
	2. Receives care	.80
	3. Deprived of care	.80
	4. Deprives others	1.00
	5. Givingness theme present	.90
	B. <u>Mastery</u>	
	1. Activity	.77
	2. Attitude	.77
	3. Outcome	.92
	4. Mastery theme present	.90
	C. <u>Mutuality</u>	
	1. Cooperative	.70
	2. Observing others	1.00
	3. Aggressive	1.00
	4. Aggressed upon	1.00
	5. Mutuality theme present	.70
4.	<u>Damage</u>	
	A. Self	.81
	B. Others	1.00
	C. Animals	1.00
	D. Inanimate Objects	.70
5.	<u>Relation to Reality</u>	.85

APPROVAL SHEET

The thesis submitted by Peggy Wingo has been read and approved by the following committee:

Dr. Marvin W. Acklin, Director
Assistant Professor, Psychology, Loyola

Dr. Alan DeWolfe
Professor, Psychology, Loyola

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

April 21, 1988
Date

Marvin W. Acklin Ph.D.
Director's Signature