RORSCHACH HUMAN MOVEMENT AND EARLY MEMORIES

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Richard A. Westmaas

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BY

RICHARD A. WESTMAAS

A THESIS

Submitted to the College of Science and Arts
Michigan State University of Agriculture and
Applied Science in partial fulfillment of
the requirements for the degree of

MASTER OF ARTS

Department of Psychology

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I wish to express my gratitude to Dr. Gerald F. King for his active participation and helpful criticism in the different phases of this study. His experience and enthusiasm served as a constant source of encouragement. I would like to thank Drs. Albert I. Rabin and Joseph Reyher for serving on my oral examination committee and for their helpful suggestions.

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AN ABSTRACT

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In a recently published study, King (1958) critically reviews current interpretations of the Rorschach human movement response (M), and offers the following as a basic interpretation: "M reflects the ability in fantasy to project the self in time and space in the interpersonal sphere". Hypotheses derived from this formulation received support in his investigation among male veterans institutionalized in a neuropsychiatric hospital. The present study was designed to test the applicability of King's interpretation of M in a non-pathological setting.

Three hypotheses relating M production to the ability to recall early memories were derived from King's formulation. Specifically, it was hypothesized that High-M producers, as compared with Low-M producers, would: (1) recall memories from an earlier age; (2) show less uncertainty in estimating the age of early memories, and; (3) recall more elements in early memories.

Subjects were college students drawn from classes in introductory and general psychology at Michigan State University. A total of 120 subjects were tested with a group-administered Rorschach and an Early Memory Questionaire developed for this study. A High-M group, consisting of subjects with seven or more M, and a Low-M group, consisting of subjects with three or fewer M were formed. These preliminary groups were then equated on the variables of age, intelligence, and Rorschach R. The final groups each contained 26 subjects.

An analysis of the data yielded statistically significant support for the second hypothesis, but not for the first and third. The High-M group was significantly less uncertain in estimating age of early memories. The two groups did not differ significantly on age of recalled memories or on number of memory elements recalled.

In the discussion it was pointed out that the present study differs from that of King in several important respects. Specifically, there are differences in the type of subjects used, in the frequency of M reported for high and low groups, and in the methodology employed. That this study obtained significant results for one out of the three hypotheses tested, despite the above differences, was interpreted as offering some limited support for the proposed interpretation. The need for further research in this area was indicated, with suggestions for increasing the sensitivity of an early memory questionaire.

Approved by: Fred A. King

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Table 7. Comparison of [illegible] .... [illegible]

INTRODUCTION

Among the Rorschach determinants, the human movement response (M) has received a good deal of attention. Several interpretations of M were supplied by Rorschach, [1942 (originally 1921)] such as intelligence, creativity, suggestibility (inversely related to M), emotional stability, intensive rapport, and empathic capacity. Research evidence does not support all of these interpretations equally. King (1958) reviewed several of the meanings of M proposed by Rorschach and later authors, and points out that many of the interpretations are collateral meanings. That is, the interpretations are of limited generality, and their application must be conditioned by the characteristics of the individual who produces the responses. Thus, as Beck (1945) points out, M may have different meanings when found in the records of hospitalized patients than with normal individuals.

In an attempt to establish a basic meaning for M, King points to the common interpretation of human (H) responses as indicating interest in people. He suggests that more attention be paid to this interpersonal aspect of the M response, which by definition involves humans or human activities. Interpretations of M as indicating ability to empathize with others is one meaning which focuses on interpersonal relations, and some studies do indicate a relationship here (e.g., Hertzman & Pearce, 1947; Frankle, 1953). That empathy is not a basic or general meaning of M, however, is indicated by the observation that paranoid schizophrenics,

INTRODUCTION

Among the Rorschach determinants, the human movement response (M) has received a good deal of attention. Several interpretations of M were offered by Rorschach (1942 (originally in 1921)), such as intelligence, creativity, motility (inversely related to M), emotional stability, intensive rapport, and possibly creativity. The research evidence does not support all of these interpretations equally. Klein (1956) reviewed several of the meanings of M proposed by Rorschach and later workers, and pointed out that many of the interpretations are collateral meanings. That is, the interpretations are of limited generality, and their application must be conditioned by the characteristics of the individual who produces the responses. Thus, as King (1960) points out, M may have different meanings when found in the records of hospitalized patients than with normal individuals.

In an attempt to establish a basic meaning for M, King points to the common interpretation of human (H) responses as indicating interest in people. He argues that more attention be paid to this interpersonal aspect of the M response, which by definition involves humans or human activities. Interpretations of M as indicating ability to empathize with others is one meaning which focuses on interpersonal relations, and some studies do indicate a relationship (e.g., Hertzman & Pearce, 1947; [illegible], 1955). That empathy is not a basis or a normal meaning of M, however, is indicated by the observation that paranoid schizophrenics,

who are notoriously lacking in empathic ability, are often high in M production. Thus, it may be that interpersonal projection does not have to be accurate, i.e., empathic, to enhance M production on the Rorschach. Considerations such as these led King to propose the following formulation as the basic meaning of M: "M reflects the ability in fantasy to project the self in time and space in the interpersonal sphere" (1958, p.4).

In his investigation, King explored the implications of his interpretation of M as it applies to the maladjusted. He proposed that M has special relevance to the individual's orientation to his problem "in terms of his perception of the nature of his problem, his perception of the origin of his problem, his reaction to the problem, and his view of the future" (1958, p.5). Utilizing 60 patients in a Veterans Administration neuropsychiatric hospital, King tested four hypotheses relating M production to the patient's orientation to his problem. He hypothesized that High-M producers, as compared with Low-M producers, would show: (1) a greater tendency to recognize their problems (illnesses) as involving disturbances in interpersonal relationships, (2) a greater tendency to project themselves backwards in time in accounting for the origins of their problems, (3) a greater tendency to utilize interpersonal fantasy in coping with their problems, and (4) a greater tendency to project themselves beyond their present problems into the future. Using the method of a controlled interview, he

who are potentially involve in narcissistic suicide, are often high in Pr production. Thus, it may be that interpersonal projection does not have to be necessarily, i.e., egoistic, to embrace Pr production in this research. Such formulations such as these led Lang to propose the following formulation as the basic meaning of Pr: "Pr reflects the ability in fantasy to project the self in time and space in the interpersonal sphere" (1960, p.4).

In his investigation, Lang explored the implications of the interpretation of Pr as it applies to the rehabilitated. He proposed that Pr has special relevance to the individual's orientation to his problem "in terms of his perception of the nature of his problem, his perception of the origin of his problem, his reaction to the problem, and his view of the future" (1960, p.2). Utilizing 60 patients in a Veterans Administration neuropsychiatric hospital, Lang tested four hypotheses relating Pr production to the patient's orientation to his problem. He hypothesized that high-Pr producers, as compared with low-Pr producers, would show: (1) a greater tendency to recognize their problems (illnesses) as involving disturbances in interpersonal relationships, (2) a greater tendency to project themselves backwards in time in accounting for the origins of their problems, (3) a greater tendency to utilize interpersonal factors in coping with their problems, and (4) a greater tendency to project themselves beyond their present problems into the future. Using the method of a controlled interview, he

found significant differences between a High-M group and a Low-M group in support of each of these hypotheses. The interpretation of M offered by King has thus received support among a sample of hospitalized males manifesting various kinds of psychopathology.

If the meaning of M as formulated by King is considered a basic or universal meaning, further investigations sampling from other populations, especially non-hospitalized populations, are needed. However, the investigation of the meaning of M among normals cannot focus on orientation to the individual's illness as with a hospitalized sample. Among the possible manifestations of the ability which M purportedly reflects is recall of experiences occuring remotely in time. The formulation states that M reflects "the ability in fantasy to project the self in time and space in the interpersonal sphere." An individual with a relatively high ability of this kind would be expected to have freer access to interpersonal experiences occuring remotely in time than a person with low ability. Furthermore, since interpersonal relations are in some way involved in nearly all of one's experiences, it would follow that the individual with free access to interpersonal cues remote in time and space would be able to recall a wide variety of early experiences more readily than the individual with less access to these cues.

found significant differences between high-Y groups and a low-Y group in support of each of these hypotheses. The interpretation of _ offered by Klein thus receives support among a sample of hospitalized males manifesting various kinds of psychopathology.

If the meaning of _ as formulated by Klein is considered a basic or unitary [illegible], further investigations sampling from other populations, especially non-hospitalized populations, are needed. However, the investigation of the meaning of Y among samples cannot focus on orientation to the individual's illness or with a hospitalized sample. Among the possible implications of the ability of high _ [illegible] reflect is recall of experiences occurring remotely in time. The implication assumed that _ reflects "the ability in memory to project the self in time and space in the latter [illegible]." An individual with a relatively high quality of this kind would be expected to have freer access to interpersonal experiences occurring remotely in time than a person with low quality. Furthermore, since interpersonal [illegible] are in [illegible] involved in nearly all of one's experiences, it would follow that the individual with free access to interpersonal ones remote in time and space would be able to recall a [illegible] variety of early experiences more readily than the individual with less access to them.

THE PROBLEM

The present investigation represents an attempt to test the application of the basic meaning of M proposed by King in a non-pathological setting. The sample is taken from a "normal" population consisting of college students. The tests of King's formulation of the meaning of M involve the ability to recall experiences from early childhood.

HYPOTHESES

The specific hypotheses tested are as follows:

I. High-M producers recall memories from an earlier age than Low-M producers.

II. High-M producers show less uncertainty in estimating the ages at which early memories occurred than Low-M producers.

III. High-M producers recall more elements in early memories than Low-M producers.

METHOD

Subjects

The subjects (Ss) were recruited from among students enrolled in introductory and general psychology courses at Michigan State University. The advertisement of the experiment on the sign-up sheets described it as a study of perception and early memories. No mention of the Rorschach was made until the students actually arrived for the administration so as to preclude a bias in sampling arising from students' attitudes toward the Rorschach. The Rorschach was administered to a total of 120 Ss. Protocols were scored for number of M and for total number of responses (R). The number of M ranged from one to fourteen, with a median of five. A Low-M and a High-M group were formed from the total sample using the criteria of three or fewer M for the Low-M group and seven or more for the High-M group. The two preliminary groups were adjusted on the basis of age, Rorschach R, and a measure of intelligence consisting of derived scores on the ACE psychological tests given the students on admission to the University. The final groups each consisted of 26 Ss. There were nine females and seventeen males in the Low-M group, and seven females and nineteen males in the High—M group. Table 1 shows that the groups were quite similar with respect to age, Rorschach R, and intelligence.

TABLE 1

Comparison of Low-M and High-M Groups on Age, Rorschach R, and a Measure of Intelligence

		Age	Rorschach R	Intelligence
Low-M	M	21.23	21.58	5.92
	SD	2.45	5.93	1.71
High-M	M	20.65	23.09	6.00
	SD	2.06	5.63	1.98
	t	.92	.94	.16
	p	>.30	>.30	>.80

Table 1

Comparison of Norm $\bar{T}_3$ and Laspeyres Index on Age, Income and Income of the Head

Age	Income of the Head			
Norm $\bar{T}_3$	$\bar{T}_3$	27.13	21.1	3.42
	$\bar{T}_2$	2.43	3.43	1.71
Laspeyres	$\bar{T}_3$	27.99	21.0	3.42
	$\bar{T}_2$	2.06	3.43	1.71
	$\bar{T}$	2.52	2.30	.68
		2.70	2.70	.60

Prodedure

The Rorschach was administered as a group technique using the general procedure for free response as outlined by Harrower-Erickson (1945). The standard Rorschach cards were employed, using an opaque projector and a 6' x 6' screen. Each slide was exposed for three minutes, during which time the Ss wrote their responses on sheets provided them by the experimenter. An inquiry was then conducted, with the instructions to describe the location of responses and to add any qualitative or descriptive information about the responses which occured to them. (See appendix I for text of instructions to Ss). In scoring the protocols, the criteria for M and R described by Beck (1944) were employed. It was found that scoring M and R in protocols obtained by the group method presented few difficulties not found in the scoring of the individually administered Rorschach.

The Early Memory Questionaire

The instrument used to measure the ability to recall early memories was a nine item questionaire developed for this purpose. This questionaire was administered following a ten minute intermission at the conclusion of the Rorschach test. The Ss were urged to take plenty of time in filling out the questionaire. A minimal time of twenty minutes was set to preclude undue haste.

The first item of the questionaire asks the S to describe the earliest memory he can recall. Six other items

Procedure

The Rorschach was administered as a group technique using the general procedure for group use as outlined by Harrower-Erickson (1941). The standard Rorschach cards were employed, using a [illegible] projector on a 6' x 8' screen. Each slide was exposed for three minutes, during which time the Ss wrote their responses on sheets provided them by the examiner. An inquiry was then conducted, with the instructions to describe the location of response and to add any qualitative or locative information about the responses which occurred to them. (See Appendix I for text of instructions to Ss). In scoring the protocols, the criteria for S and B described by Beck (1944) were employed. It was found that scoring S and B in protocols obtained by the group method presented few difficulties not found in the scoring of the individually administered Rorschach.

The Early Memory Questionnaire

The instrument used to measure the ability to recall early memories was a nine item questionnaire developed for this purpose. This questionnaire was administered following a ten minute intermission at the conclusion of the Rorschach test. The Ss were urged to take plenty of time in filling out the questionnaire. A minimal time of twenty minutes was set to preclude undue haste.

The first item of the questionnaire asks the S to describe the earliest memory he can recall. Six other items

ask for the earliest memory involving a list of persons (father, mother, and playmates), or things (house, toys, clothing) with which the S is likely to have had early and continuous contact. The S is also asked to estimate to the nearest year the age at which the remembered experiences occurred. If he cannot be sure of the exact year, he is to indicate by means of brackets the likely range of years during which the experience occured. The remaining two items in the questionaire request the S to list as many of his pre-school playmates and toys as possible. (See appendix II for the complete text of the Early Memory Questionaire.)

The Early Memory Questionaire was designed to yield three kinds of information corresponding to the three hypotheses tested. Relating to Hypothesis I is the estimated age of the reported experiences. The sum of the ages for the seven memories provides a global age-score for memories, a general measure of ability to recall memories of an early age.

Relating to Hypothesis II is the range of years used in estimating the age at which the recalled experiences occurred. The wider the range of years needed to embrace the estimated age, the more uncertainty is indicated. The sum of the ranges for the seven memories provides a global uncertainty score.

Relating to Hypothesis III is the number of preschool toys and playmates listed. The number of toys and the number of playmates listed provide measures of elements recalled in early memories.

ask for the earliest memory involving a list of persons (father, mother, and playmates), or things (home, toys, clothing) with which the *S* is likely to have been in continuous contact. The *S* is also asked to estimate the at what year the event which the remembered experience occurred. If he cannot be sure of the exact year, he is to indicate by means of brackets the likely range of years during which the experience occurred. The remaining two items in the questionnaire request the *S* to list as many of his pre-school playmates and toys as possible. (See Appendix II for the complete text of the Early Memory Questionnaire.)

The Early Memory Questionnaire was designed to yield three kinds of information corresponding to the three hypotheses tested. Relating to Hypothesis I is the estimated age of the reported experiences. The sum of the ages for the seven memories provides a global age-score for memories, a general measure of ability to recall memories of an early age.

Relating to Hypothesis II is the range of years used in estimating the age at which the recalled experiences occurred. The wider the range of years needed to express the estimated age, the more uncertainty is indicated. The sum of the ranges for the seven memories provide a global uncertainty score.

Relating to Hypothesis III is the number of pre-school toys and playmates listed. The number of toys and the number of playmates listed provide measures of elements recalled in early memories.

RESULTS

The results bearing on Hypothesis I are shown in Table 2. This table presents the comparison of the Low-M and High-M groups on the global age-score for memories, which was obtained by summing the ages for the seven memories reported. A *t* test was employed, as the assumptions of normality seem to be met by the data. It can be seen in Table 2-A that the difference between the Low-M and High-M groups in the reported age of memories, while in the predicted direction, is minimal and well within the range of chance expectancy.

While analyzing the age-score data, the possibility of interaction between uncertainty and reported age occurred to the investigator. The question was then asked: What differences between the two groups will be found if each age-estimate is adjusted toward the upper limit of the range of years used in estimating the memory? Toward the lower limit of the range? To explore this matter, the two groups were compared on both an upward (conservative estimate) and a downward (liberal estimate) adjustment of the age-scores. The difference in the conservative age-scores does not reach significance, although the difference in the predicted direction found with unadjusted scores is accentuated by this adjustment. Table 2-C shows that when age-scores were adjusted downward (a liberal estimate of age of memories), the direction of the difference is reversed, although the difference does not approach significance.

In Table 3, the comparison of Low-M and High-M groups on (unadjusted) age estimates for the individual memories

RESULTS

The results bearing on Hypothesis 1 are shown in Table 2. This table presents the comparison of the Low-I and High-I groups on the global age-score for memories, which was obtained by summing the ages for the seven memories reported. A t test was employed, as the assumption of normality seem to be met by the data. It can be seen in Table 2-A that the difference between the Low-I and High-I groups in the reported age of memories, while in the predicted direction, is minimal and well within the range of chance expectancy.

While analyzing the age-score data, the possibility of interaction between uncertainty and recorded age occurred to the investigator. The question was then raised: what difference between the two groups will be found if each estimate is adjusted toward the upper limit of the range of years used in estimating the memory? Toward the lower limit of the range? To explore this notion, the two groups were compared on both an upward (conservative estimate) and a downward (liberal estimate) adjustment of the age-scores. The difference in the conservative age-scores does not reach significance, although the difference in the predicted direction found with unadjusted scores is augmented by this adjustment. Table 2-C shows that when age-scores were adjusted downward (a liberal estimate of age of memories), the direction of the difference is reversed, although the difference does not reach significance.

In Table 3, the comparison of Low-I and High-I groups on (unadjusted) age estimates for the individual memories

TABLE 2

Comparison of Low-*M* and High-*M* Groups on Global Age of Memory Scores

	A. Unadjusted Scores			
	M	*SD*	Range	
Low-*M*	30.0	6.95	18-50	*t* = .52, *p* >.60
High-*M*	29.1	5.09	19-37	
	B. Adjusted Scores (conservative)			
	M	*SD*	Range	
Low-*M*	35.3	7.40	23-53	*t* = 1.10, *p* >.20 <.30
High-*M*	33.1	6.78	19-44	
	C. Adjusted Scores (liberal)			
	M	*SD*	Range	
Low-*M*	25.7	7.14	12.48	*t* = -.24, *p* >.80
High-*M*	26.1	5.20	13-36	

TABLE 3

Comparison of Low-M and High-M Groups
on Age Estimates for Individual Memories

Memory	Median Age*	Above median Low-M	Above median High-M	At mdn & below Low-M	At mdn & below High-M	Chi Square (with Yates' correction)	
1. Earliest	3	10	13	16	13	.223	N.S.
2. Mother	3	13	15	13	11	.077	"
3. Father	4	8	7	18	19	0.0	"
4. House	3	19	15	7	11	.765	"
5. Clothes	4	12	13	14	13	0.0	"
6. Playmate	4	11	8	15	18	.335	"
7. Toys	4	10	10	16	16	0.0	"

*Based on the total sample (N = 120)

Table 3

Comparison of Above-n and Below-n Groups on [illegible] Settings for Individual [illegible]

Category	Median n*	Above-median: Above-n	Above-median: Below-n	Below-median: Above-n	Below-median: Below-n	Chi square (with Yates' correction)	
1. [illegible]	[illegible]	10	13	11	13	.15	n.s.
2. [illegible]	3	12	1	13	[illegible]	.077	"
3. [illegible]	[illegible]	[illegible]	7	[illegible]	[illegible]	0.0	"
4. [illegible]	[illegible]	19	15	7	11	.765	"
5. [illegible]	4	12	1	[illegible]	15	0.0	"
6. [illegible]	4	11	[illegible]	15	10	.355	"
7. [illegible]	4	10	[illegible]	10	15	0.0	"

* Based on the total sample (n = 120)

is summarized. The non-parametric median test was used for assessing significance of differences on individual items. As can be seen from the table, the differences in no case approaches significance, and there is no consistent trend in the direction of the differences. Thus Hypothesis I is not supported for any of the individual memories or for the pooled ages of memories: High-M producers do not differ significantly from Low-M producers in the age of reported memories.

The results bearing of Hypothesis II are presented in Table 4. An inspection of the distribution of the global uncertainty scores showed them to be near enough to a normal distribution to warrant the use of a *t* test. The *t* of 2.18, which is significant at the .05 level, indicates that the groups are significantly different with respect to the range of years used in estimating their memories. Hypothesis II is thus confirmed: The High-M producers show less uncertainty in recalling their early memories than Low-M producers.

A further analysis of the memories with respect to the range of years used on the individual items of the questionaire is presented in Table 5. Since the restricted ranges of uncertainty scores for individual items did not lend itself to analysis with a *t* test, a chi-square analysis was employed. The responses were dichotomized by placing those who did not use brackets in estimating age (no uncertainty) in one class, and those who used brackets (indicating uncertainty) in the second class.

is summarized. The non-parametric median test was used for assessing significance of differences on individual items. As can be seen from the table, the chi-squares in no case approaches significance, and there is no consistent trend in the direction of the differences. Thus Hypothesis I is not supported for any of the individual questions or for the pooled sets of questions: High-_M_ producers do not differ significantly from Low-_M_ producers in the age of reported memories.

The results bearing on Hypothesis II are presented in Table 4. An inspection of the distribution of the global uncertainty scores showed them to be near enough to a normal distribution to warrant the use of a _t_ test. The _t_ of 2.10, which is significant at the .05 level, indicates that the groups are significantly different with respect to the range of years used in estimating their memories. Hypothesis II is thus confirmed: The High-_M_ producers show less uncertainty in recalling their early memories than Low-_M_ producers.

A further analysis of the memories with respect to the range of years used on the individual items of the questionnaire is presented in Table 5. Since the restricted ranges of uncertainty scores for individual items did not lend itself to analysis with a _t_ test, a chi-square analysis was employed. The responses were dichotomized by placing those who did not use brackets in estimating age (no uncertainty) in one class, and those who used brackets (indicating uncertainty) in the second class.

TABLE 4

Comparison of Low-M and High-M Groups on Uncertainty in Estimating Ages of Memories (Global Uncertainty Scores)

	M	SD	Range	
Low-M	9.73	4.82	3-21	$t = 2.18$, $p < .05$
High-M	6.92	4.46	0-19	

TABLE 5

Comparison of Low-M and High-M Groups on Uncertainty Scores for Individual Memories

Memory	S's using no brackets		S's using brackets		Chi Square (with Yates' correction)
	Low-M	High-M	Low-M	High-M	
1. Earliest	5	12	21	14	3.93, $p < .05$
2. Mother	10	9	16	17	0.0 N.S.
3. Father	7	10	19	16	.35 "
4. House	5	10	21	16	1.50 "
5. Clothes	10	13	16	13	.31 "
6. Playmate	5	11	21	15	2.26, $p > .10 < .20$
7. Toys	5	7	21	19	.11 N.S.

Table 4

Comparison of Low-I and High-I Groups on Creativity [illegible]
[illegible]

	[illegible]	[illegible]	[illegible]
Low-I	2.72	[illegible]	3-4[illegible]
High-I	[illegible]	[illegible]	[illegible]

t = 2.11, p < .05

Table 5

Comparison of Low-I and High-I Groups on
Creativity [illegible] Individual [illegible]

Measure	I_2's scoring above median: Low-I	I_2's scoring above median: High-I	I_2's [illegible]: Low-I	I_2's [illegible]: High-I	Chi Square (with Yates' correction)
1. Brilliant	5	12	11	14	3.51, p <.05
2. [illegible]	[illegible]	9	11	17	0.0 n.s.
3. [illegible]	7	10	17	16	.35 "
4. [illegible]	[illegible]	10	21	11	1.50 "
5. Clothes	10	13	16	[illegible]	.31 "
6. [illegible]hydrate	[illegible]	11	21	[illegible]	2.36, p <.20
7. [illegible]ge	5	7	11	[illegible]	.11 n.s.

It can be seen from Table 5 that it is only on "Earliest Memory" that the difference between Low-M and High-M groups reaches the .05 level of significance. The difference in uncertainty approaches significance for the memory of a "Playmate." For the other memories, the differences are in the predicted direction except for the memory of "Mother," in which there is a negligible difference in the opposite direction. The analysis of individual memories with respect to uncertainty of age-estimation thus yields six out of seven differences in the predicted direction, with uncertainty in estimating the "Earliest Memory" attaining statistical significance. Hypothesis II is thus given further support by the analysis of individual memories.

The results bearing on Hypothesis III are presented in Tables 6 and 7. The number of toys and the number of playmates was combined to yield a general memory-element score. As the data were found to be positively skewed, the non-parametric median test was employed in assessing the significance of the difference. The median number of general memory-elements recalled is in the predicted direction, but well within the range of random fluctuation.

The analysis of the data for number of playmates and number of toys recalled is presented in Table 7. The median number of playmates recalled (based on N = 120) was 2.56. The median number of toys recalled was 3.35. For purposes of testing the hypothesis, the medians for both toys and playmates were set at three. Table 7 shows that the differences between Low-M and High-M groups on the number of play-

It can be seen from Table 6 that it is only on "earliest memory" that the difference between Low-N and High-N groups reaches the .05 level of significance. The difference in uncertainty approaches significance for the memory of a "play-mate." For the other memories, the differences are in the predicted direction except for the memory of "mother," in which there is a negligible difference in the opposite dir-ection. The analysis of individual memories with respect to uncertainty of age-estimation thus yields six out of seven differences in the predicted direction, with one [illegible] in obtaining the "earliest memory" statistical sig-nificance. Hypothesis II is thus given further support by the analysis of individual memories.

The results bearing on Hypothesis III are presented in Tables 6 and 7. The number of toys and the number of play-mates was combined to yield a general memory-elements score. As the data were found to be positively skewed, the non-parametric median test was employed in assessing the signi-ficance of the difference. The median number of general mem-ory-elements recalled is in the predicted direction, but well within the range of random fluctuation.

The analysis of the data for number of playmates and number of toys recalled is presented in Table 7. The median number of playmates recalled (based on N = 150) was 2.86. The median number of toys recalled was [illegible]. For purposes of testing the hypothesis, the medians for both toys and playmates were set at three. Table 7 shows that the differ-ences between Low-N and Hi-N groups on the number of play-

TABLE 6

Comparison of Low-M and High-M Groups on Number of Memory Elements Recalled (General Memory Elements Score)

	At mdn and below	Above mdn	Chi Square (with Yates' correction)
Low-M	12	14	0.08 N.S.
High-M	10	16	

TABLE 7

Comparison of Low-M and High-M Groups on Number of Playmates and Toys Recalled

A. Number of playmates recalled

	At mdn and below	Above mdn	Chi Square (with Yates' correction)
Low-M	12	14	0.0 N.S.
High-M	11	15	

B. Number of toys recalled

	At mdn and below	Above mdn	Chi Square (with Yates' correction)
Low-M	12	14	0.73 N.S.
High-M	8	18	

Table 6

Comparison of Low-H and High-H Groups on Number of Early Elements Recalled [illegible]

	At [illegible] and below	Above [illegible]	Chi square (with Yates' correction)
Low-H	11	14	[illegible] n.s.
High-H	[illegible]	16	

Table 7

Comparison of Low-H and High-H Groups on [illegible]

A. Number of rhymes from list

	At median and below	Above median	Chi square (with Yates' correction)
Low-H	12	14	[illegible] n.s.
High-H	11	15	

B. Number of [illegible] recalled

	At median and below	Above median	Chi square (with Yates' correction)
Low-H	[illegible]	14	0.[illegible] n.s.
High-H	6	18	

mates and on the number of toys recalled are no greater than would be expected by chance. The differences are in the predicted direction, but are not large enough to constitute a definite trend. Thus Hypothesis III receives no support from the data: Low-M producers do not differ significantly from High-M producers with respect to the number of memory-elements recalled.

DISCUSSION

General Considerations

This study was designed as a test of the generality of King's interpretation of M as "... the ability in fantasy to project the self into time and space in the interpersonal sphere." Whereas King obtained significant differences between Low-M and High-M groups on all the measures used to test his hypotheses, the present study obtained a significant difference for only one of the three hypotheses which were derived from King's formulation of the meaning of M. It should be stressed that this study differs in several important respects from the study in which King tested his hypotheses. Before discussing the results of the present study, several points of contrast between this study and that of King will be considered.

An important difference between the studies is in the type of Ss employed. Whereas King used hospitalized male veterans with a variety of psychopathology, the present study was done with male and female college students. The interpretation of M offered by King explicitly claims to be applicable generally, without regard for presence or absence of psychopathology. The use of college students may be considered a test of this generality. In so far as the present study obtained positive results, the generality of King's interpretation is supported. In the design of this study, however the use of a different type of S was only one of several factors that differed from King's study. Thus negative findings lose some of their significance in that they

DISCUSSION

General Considerations

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may be attributable to any or all of several sources.

Regarding the assumption of the generality of King's interpretation of M as applied to males and females, a supplemental analysis of the data for males only was carried out. The results for males only (N for the Low-M group = 17, N for the High-M group = 19) are essentially the same as for the total groups. The males in the sample do conform more closely to the prediction in the age of reported memories, but the difference between High-M and Low-M groups of males on age of reported memories is still not significant (D for unadjusted gross age-scores = 1.46, t = .88, $p > .30 < .40$).

The difference in Ss also affected the criteria for the formulation of Low-M and High-M groups. All of the college subjects produced at least one M response, with the median falling at five and the upper limit of the range extending to 14 M responses. The criterion for the Low-M group of three M or less in this study actually overlaps with the criterion for King's High-M group, which included Ss with three or more M. The question is to be raised, then, whether the interpretation of M provided by King refers only to relative absence of M as compared with its presence in whatever quantity, or whether the interpretation is to be understood as referring to a linear relation between frequency of M and the attribute that M represents. The present study offers no conclusive evidence on this point.

Another difference between King's study and the present one is in the methodology. In this study, the Rorschach and the Memory Questionaire were administered to groups, where-

may be attributable to any one or all of several factors.

Regarding the question of the generality of Linn's interpretation of L as applied to females, a supplemental analysis of the data for males only was carried out. The results for males only (L for the low-L group = 17, L for the high-L group = 12) are essentially the same as for the total groups. The males in the sample conform more closely to the prediction in terms of more M responses, but the difference between high-L and low-L groups of males in range of reported memories is still not significant (t for unadjusted gross age-scores = 1.17, df = 36, p .20-.30).

The difference in L also affected the criteria for the formulation of low-L and high-L groups. All of the college subjects produced at least some M responses, with the median falling at five and the upper limit of the range extending to 14 M responses. The criterion for the low-L group of three M or less in this study naturally overlaps with the criterion for Linn's high-L group, which included Ss with three or more L. The question is to be raised, then, whether the interpretation of L provided by Linn refers only to relative absence of L as compared with its presence in whatever quantity, or whether the interpretation is to be understood as referring to a linear relation between frequency of L and the attribute that L represents. The present study offers no conclusive evidence on this point.

Another difference between Linn's study and the present one is in the methodology. In this study, the Rorschach and the memory questionnaire were administered in groups, whe-

as in King's study the Rorschach was individually administered; and individual interviews were used as the source of data for the dependent variables. We are assuming that the meaning of M is the same whether produced in a group or in individual sessions, and that the number of M is relatively constant for the individual from one situation to the other. Research that has been done with group Rorschach administrations appears to make the latter of these assumptions tenable (Harrower-Erickson, 1945). The assumption of generality in the meaning of the Rorschach determinants in group and in individual administrations is made in all studies which employ the group method, and there are no apparent reasons for altering these assumptions. Klopfer warns, however, that "...the interpretative hypotheses formulated on the basis of individual administration cannot be assumed to be applicable automatically to group methods" (1954, p.429).

In the present study, which attempts to test the generality of King's interpretation of M, the use of group-administered Rorschachs may be considered as another aspect of the test of this generality. Because of the other differences between the two studies, however, the failure to confirm two of the three hypotheses derived from King's interpretation can not be attributed only to differences resulting from group as compared with individual administration of the Rorschach.

That the present study used a group-administered questionaire for data on the dependent variable, as compared with individual interviews in King's study, may be of more

as in King's study the Rorschach was individually administered; and individual interviews were used as the source of data for the dependent variables. We are assuming that the meaning of R is the same whether obtained in a group or in individual sessions, and that the number of R is relatively constant for the individual from one situation to the other. Research that has been done with group administration of inkblots seems to make the latter of these assumptions simple (Hertzman-Orlansky, 1943). The question of equality in the meaning of the Rorschach determinants in group and in individual administrations is one for all studies which employ the group method, and there are no known reasons for altering these assumptions. Klopfer et al., however, state "...the interpretative hypotheses formulated on the basis of individual administration cannot be assumed to be applicable automatically to group methods" (1954, p. 253).

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That the present study used a group-administered questionnaire for data on the dependent variables, as compared with individual interviews in King's study, is ... of more

importance in explaining the different results of the two investigations. The Early Memory Questionaire is certainly a less sensitive instrument than the detailed structured interviews employed by King. Individual differences in the ability to recall early memories would likely be more marked if measures were taken individually by a more intensive technique than the one used in the present study. One such difference, which was observed in the group sessions but not recorded, is in the amount of time taken to recall early memories. Whether these differences would be in the direction predicted by the present hypotheses is a matter for further investigation.

Discussion of Results

The present study, in summary, differs from that of King in several important respects, namely; in the kind of Ss used, in the number of movement responses given by High-M and Low-M groups, and in the methodology of Rorschach administration and collection of data for the dependent variables. It has been pointed out that if the interpretation of M offered by King is to be considered a basic or general meaning of M, then predictions based on the interpretation should hold despite differences in the population studied and in methodology. Since the present study employed several of these modifications simultaneously, it may be considered a rather difficult test of the generality of King's interpretation of M. Despite these modifications in type of Ss and in methodology, one of the three hypotheses derived from King's formulation of the meaning of M received statistically significant

support. A second hypothesis did not receive statistically significant support, although the observed differences were in the predicted direction. There was no support for the third hypothesis, although the observed differences, while minimal, were in the predicted direction. The overall results of this study may thus be regarded as providing some limited support for the generality of King's interpretation of M as "the ability in fantasy to project the self in time and space in the interpersonal sphere."

The hypothesis which was supported stated that High-M producers show less uncertainty in estimating the age of early memories than Low-M producers. The operational meaning of uncertainty in estimating age was the number of years enclosed in brackets. The task before the subject was to localize a recalled experience temporally by specifying his age at the time of the experience. Specification of the memory was taken as evidence of uncertainty, the degree of uncertainty being indicated by the number of years included in the age-estimate. The results indicated that the High-M group specified the age of their experiences more precisely than did the Low-M group. The mean difference between the two groups for the sum of the seven memories was 2.18 years, which amounts to an average difference on each memory individually of about .4 years. These results are in agreement with the requirements of the interpretation of M offered by King. That positive results were obtained with a non-hospitalized sample, in which M production was, as a group, considerably greater than King's hospitalized sample, provides

support. A [illegible] receive [illegible]
significant [illegible], although the observed differences were
in the predicted direction. [illegible] for the
third hypothesis, although the observed differences, while
significant, were in the predicted direction. The overall re-
sults of this study may thus be [illegible]
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of _I_ as "the ability in fantasy to project the self in time
and space in the [illegible]."

The hypothesis which was supported by the data [illegible] High-_I_
[illegible] show [illegible] tendency in estimating [illegible] of
[illegible] than Low-_I_ [illegible]. The [illegible]
of uncertainty in estimating [illegible] the number of years
enclosed in [illegible]. [illegible] before the subject was to
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cant results, in which _I_ prediction was [illegible], consi-
derably greater than [illegible], provides

some basis for considering King's interpretation of the movement response to be a basic or generally applicable interpretation.

It should be noted, however, that the greater precision of the High-M group in estimating the age of memories does not necessarily indicate greater accuracy. There was no attempt to establish the actual age of the experiences recalled by referring to outside sources of information. The most that can be inferred from the results is that High-M producers view their memories as having occurred at a more specific point in time than Low-M producers. The Low-M producers by comparison are more vague in specifying their age at the time of the remembered experiences.

The first hypothesis stated that High-M producers recall memories from an earlier age than Low-M producers. Since this hypothesis was not confirmed by an analysis of the data, it is necessary to examine the meaning of this negative finding and to suggest possible interpretations.

As was noted earlier, the design of this study differed from King's study in the type of Ss used, the number of M produced, and in methodology. Negative results can be attributed to any of these variables. Since the experimental design does not enable the effects of the different modifications to be studied separately we can only offer what appear to be the most reasonable interpretations.

The use of a non-hospitalized, college sample is one of the most obvious possible sources of failure to demonstrate generality in age of early memories. A relatively high level

of M production for the students precluded formation of a Low-M group with as few as zero or one M. One might assume that the students were also able to recall earlier memories, as a group, than would be true for a hospitalized, or even for a more heterogeneous non-hospitalized sample. However, the positive findings with regard to the second hypothesis suggests that the type of sample cannot be primarily responsible for negative findings with regard to the first hypothesis. Thus we are forced to take a closer look at the assessment of the dependent variable for the first hypothesis.

Attention had already been called to the relatively crude measurement provided by the seven items of the group-administered questionaire. It seems likely in retrospect that the tasks set for the subject of estimating the age of the seven memories were not stringent enough to clearly differentiate Ss on the basis of their ability to recall early memories. Further research is needed to investigate this possibility. Such research might employ an instrument which poses more difficult tests of ability to recall early memories. For example; increased specificity of time and place, greater number and variety of memories, and also measurement of the time taken to recall early experiences. The fact that the observed differences were in the predicted direction suggests that further exploration with a more sensitive instrument and a less homogeneous sample may be fruitful. Since the data suggest possible sex differences on this variable, it is suggested that future research should address itself to this posibility.

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While the negative results on the variable of age of reported experiences does not argue conclusively against King's interpretation of M, the specific negative implications should not be overlooked. This study has shown that for college students, the number of M does not predict age estimates of reported early memories on a group questionaire. Only further research can determine the presence and extent of empirical relations between these variables in different samples and with a more sensitive methodology.

The third hypothesis concerning the ability to enumerate playmates and toys from pre-school years received no confirmation in this study. While this task appears to provide a sensitive measure of the ability to recall early memories, there is some doubt as to whether this is actually the case. Despite the relatively wide range of scores on these tasks (from 0-16 playmates, and from 0-16 toys were listed), the data are positively skewed, with the majority of Ss listing less than three playmates and less than four toys. The fact that the data, particularly on the number of playmates, are clustered in the range from 0 to 4 playmates, indicates that this task did not offer the wide range of scores necessary for sensitive measurement. It is possible that the negative results are partially attributable to this crudety in the measuring device. The fact that the difference between High-M and Low-M groups is more marked in the number of toys listed, where the scores are more widely distributed, lends some mild support to this possibility.

It is worth noting that the variability on this task is determined not only by the ability to recall, but also by reality considerations. It was assumed for the purposes of this study that the groups did not differ with respect to the number of playmates or toys they have known. There was no provision for the more stringent and desirable test of whether one of the groups recalled a greater proportion of the playmates or toys that they had actually had as children. If the assumption of an equal number of toys and playmates among High-M and Low-M groups is valid, the results indicate that the High-M sample has no significant advantage over the Low-M sample in recalling toys and playmates, a result contrary to our hypothesis. It is conceivable, however, that some systematic difference exists with regard to the actual number of toys and playmates known in early childhood. For example, a variety of early interpersonal experiences may be one of the developmental prerequisites for High-M production. Or, on the contrary, one might equally well suppose that only a small number of stable interpersonal relationships suffice, and that interpersonal fantasy is developed as a means of further populating one's interpersonal world. The present study offers no light on these interesting speculations.

It is worth noting [illegible] is determined not only by [illegible], but also by reality considerations. It was [illegible] for the purposes of this study [illegible] did not differ [illegible] to the number of [illegible] or boys they [illegible]. There was no provision for [illegible] that of whether one of the [illegible] of the playmates or toys [illegible] children. If the [illegible] of [illegible] number of toys and playmates [illegible] in [illegible], to [illegible] [illegible] that the [illegible] advantage over the [illegible] in [illegible] toys and playmates, a result [illegible]. It is [illegible]-able, however, that [illegible] differences with regard to the [illegible] in early childhood. For [illegible], a variety of [illegible] interpersonal experiences may [illegible] for [illegible] production. Or, on the contrary, [illegible] well suppose that only a small number of [illegible] interpersonal relationships suffice, [illegible] in developed [illegible] means of [illegible]'s inter-[illegible] small world. The present study [illegible] light on these interesting speculations.

SUMMARY

In a recently published study, King (1958) critically reviews current interpretations of the Rorschach human movement response (M), and offers the following as a basic interpretation: "M reflects the ability in fantasy to project the self in time and space in the interpersonal sphere." Hypotheses derived from this formulation received confirmation in his investigation among male veterans instititionalized in a neuropsychiatric hospital. The present study was designed to test the applicability of King's interpretation of M in a non-pathological setting.

Three hypotheses relating M production to the ability to recall early memories were derived from King's formulation. Specifically, it was hypothesized that High-M producers, as compared with Low-M producers, would: (1) recall memories from an earlier age; (2) show less uncertainty in estimating the age of early memories; and (3) recall more elements in early memories.

Subjects were college students drawn from classes in introductory and general psychology at Michigan State University. A total of 120 subjects were tested with a group administered Rorschach and an Early Memory Questionaire developed for this study. A High-M group, consisting of subjects with seven or more M, and a Low-M group, consisting of subjects with three or fewer M were formed. These preliminary groups were then equated on the variables of age, intelligence, and Rorschach R. The final groups each contained 26 subjects.

An analysis of the data yielded statistically significant support for the second hypothesis, but not for the first and third. The High-M group was significantly less uncertain in estimating age of early memories. The two groups did not differ significantly on age of recalled memories or on number of memory elements recalled.

In the discussion it was pointed out that the present study differs from that of King in several important respects. Specifically there are differences in the type of subjects used, in the frequency of M reported for high and low groups, and in the methodology employed. That this study obtained significant results for one out of the three hypotheses tested, despite the above differences, was interpreted as offering some limited support for the proposed interpretation, and as indicating the need for further research in this area.

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Appendix I

INSTRUCTIONS FOR GROUP RORSCHACH

The test which you are about to take is a rather interesting one and I think you will enjoy it. All you have to do is look at some slides which will be projected on the screen and write down what you see. Now the point about these slides is that they are nothing more or less than reproductions of ink blots. These are the ink blots developed by Hermann Rorschach which you have probably heard about in your psychology courses.

Your task is simply to look at the slides, and write down what they remind you of, resemble, or what they might be. Sometimes you may see several different things in one blot. Each of these slides will be shown to you for three minutes, and you may write down your answers at your own time in the left half of the sheet before you. (Illustrate).

There will be 10 slides in all. Number the slides with Roman numerals as they are shown. Put these numbers in the small column on the extreme left side of your paper. It may help you later in the test if you also make a point of numbering your answers to each slide as you write them down.

Are there any questions?

Here is the first slide. Put the Roman numeral I in the small column at the left.

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There will be 10 slides in all. Number the slides with Roman numerals as they are shown. Put these numerals in the small column on the extreme left side of your paper. It may help you later in the test if you will make a point of numbering your answers to each slide as you write them down.

Are there any questions?

Here is the first slide. Put the Roman numeral I in the small column at the left.

Instructions for Inquiry

Well, this has been the first part of the Rorschach experiment. Now we shall go on to the second. I'm sure you will have seen a lot of amusing and different things in the various inkblots, but one of the important aspects of this test is the fact that I must know as accurately as possible just what it is you have seen and where it is you have seen it. In order that you can do this, you will find a small diagram representing each slide on the location sheet which has just been handed to you.

On this sheet I would like you to indicate the areas on the blots where you saw the things you reported. To keep your answers straight, you should number your answers to each blot, - if you forgot to do so before. Then, with your pencil, draw a line around the area where you saw that particular object and attach to that area the number of the answer you are describing. For example, suppose you saw in the first blot:

(1) a butterfly
(2) a dog's head
(3) some outstretched hands

Circle each of the areas where these things were seen and number the areas with the same numbers you gave your answers. Like this: (illustrate)

Before you begin to mark off your answers, there is something else you should do for me. You have to help me reconstruct, as accurately as possible, the kind of experiences you have been having, or some of the characteristics of the things you saw. You might for instance, have seen a butterfly in this first slide. Perhaps the butterfly looked as if

Instructions for Inquiry

[illegible]ul, while th[illegible] experience[illegible]. I'm sure you will have seen a lot of [illegible] different things in the various inkblots, but one of the [illegible] is that it is the fact that I [illegible] possible just what it is you [illegible] you have seen it. In order that you can do this, you will find a small diagram [illegible] the same location [illegible] which has just been [illegible] to you.

On this sheet I would like you to indicate the areas on the blots where you saw the things you reported. To keep your answers straight, a small number [illegible] to each blot, – if [illegible]. Then, with your pencil, draw a line around the [illegible] that parti-cular object [illegible] the number of the answer you are describing. [illegible] example, suppose [illegible] the first blot: (1) a butterfly
(2) a dog's head
(3) [illegible]

Circle each of the areas where th[illegible] were seen and number the areas with the same numbers you gave your answers. Like this: (illustrat[illegible])

Before you begin to mark off your [illegible], there is something else you should do for me. You have to help me re-construct, as accurately as possible, the kind of experiences you have been having, [illegible] of the [illegible] of the thi[illegible]. You might for instance, have seen a butter-fly in this first blot. Perhaps the butterfly [illegible]

it were flying, with wings outstretched, or then, again, perhaps it was just the shape that reminded you of a butterfly. Or, you may have seen the hands at the top of Card I. Perhaps they looked as if they were reaching up for something or waiting to receive something. You may have mentioned this sort of thing when you first wrote your answer, but now is the time to add these things if you did not mention them before. Put this additional information in the column just to the right of your answers. Some of the other cards had colors on them, and there the colors may have influenced what you saw or how you saw it. These are the sorts of added bits of information that I would like to have you include in that right hand column next to your answers. Are there any questions?

Remember, you are to locate and number each answer on the miniature blots, and then add whatever information you care to about your answers. Now we will show each slide again for you to refer to in doing these two things.

Card Number	Name _____ Age _____ _____
	Subj ect's Answer Sheet

1159-830

Appendix II

RAW & G.F.K.

Early Memories

How far back do your early memories go? People show wide differences in this respect. The purpose of this questionnaire is to obtain information about early memories. You will be asked to describe briefly the nature of some of your early memories and to estimate your age at the time of each memory.

In estimating your age, underline the appropriate number as indicated in the first example below. If you cannot be definite about the specific year of the memory, use parentheses to show the range of years in which the experience (memory) occurred and then underline the most likely year of the memory. This is illustrated in the second example below.

Example 1 Years: 1 2 3 4 5 6 7 8 9 10 11 12
Example 2 Years: 1 2 3 4 (5 6 7 8) 9 10 11 12

Question 1. Think it over carefully and then briefly describe the earliest memory that you can recall.

At what age were you at the time of this memory?
Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 2. Think it over carefully and then briefly describe the earliest memory of your mother.

At what age were you at the time of this memory?
Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 3. Think it over carefully and then briefly describe the earliest memory of your father.

At what age were you? Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 4. What is your earliest memory of a house? Describe briefly.

At what age were you? Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 5. What is your earliest memory of clothes? Describe briefly.

At what age were you? Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 6. What is your earliest memory of a playmate? Describe briefly.

At what age were you? Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 7. What is your earliest memory of toys? Describe briefly.

At what age were you? Years: 1 2 3 4 5 6 7 8 9 10 11 12

Question 8. In the previous seven questions, you have listed seven memories. Review them briefly and then rate them "pleasant", "unpleasant", or "neutral" in the spaces provided below.

Memory 1.	Pleasant_____	Unpleasant_____	Neutral_____
Memory 2.	Pleasant_____	Unpleasant_____	Neutral_____
Memory 3.	Pleasant_____	Unpleasant_____	Neutral_____
Memory 4.	Pleasant_____	Unpleasant_____	Neutral_____
Memory 5.	Pleasant_____	Unpleasant_____	Neutral_____
Memory 6.	Pleasant_____	Unpleasant_____	Neutral_____
Memory 7.	Pleasant_____	Unpleasant_____	Neutral_____

Question 9. Not counting relatives, list the names of all your preschool (before kindergarten) playmates that you can remember (if any).

Question 10. List all of your preschool toys that you can remember (if any).