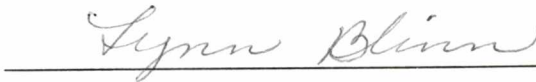


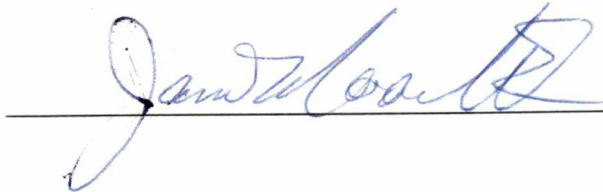
To the Graduate Council:

I am submitting herewith a thesis written by Marsha Parsons Burdette entitled "The Relationship of Creativity, Dream Content, and Attitude Toward Dreams in Fifth Graders." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Child and Family Studies.


D. W. Tegano, Major Professor

We have read this thesis
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THE RELATIONSHIP OF CREATIVITY, DREAM CONTENT,
AND ATTITUDE TOWARD DREAMS
IN FIFTH GRADERS

A Thesis
Presented for the
Master of Science
Degree
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ABSTRACT

The dreams of 55 fifth graders were collected for three days and the dream content was coded for realistic properties, location changes and word count. Creativity was assessed by an ideational fluency task, a global rating of creativity and evaluation of a drawing of the dream and its title. No significant correlations were found between the dream content variables and the ideational fluency measure. The drawing of the dream and title were likewise unrelated to dream content. However, the average global rating of creativity correlated significantly with each dream content variable. T-tests between high creatives ($N = 8$) and low creatives ($N = 9$) revealed significant differences on word count and global rating of creativity. These results were discussed in regard to the measurement of creativity and how it is related to primary process thinking.

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IN FIFTH GRADE CHILDREN

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INTRODUCTION

Gowan (1976) discussed that for creativity "the prime secret is the relaxation of the conscious mind" (p.81). Ghiselin (1952) has collected many reports of creative persons, such as Einstein, Coleridge, Poincare, and Kipling, each with their explanation of how after conscious preparation and incubation, it is an unconscious rush of insight that culminates their work. When the mind is dreaming, it is relaxed and only unconsciously active.

Some famous creative persons actually attribute their discoveries to having had a specific dream. Kekule dreamed of a snake biting its own tail which he says lead him to the conceptualization of the benzene ring (Koestler, 1964). Mendeleev reported that he had a dream where he saw a table of all the elements, this was the organization of the Periodic Table (Krippner, 1972). Other dreams have reportedly inspired musical compositions by Beethoven, and novels such as Dr. Jeckyll and Mr. Hyde to name a few. Creativity has been theoretically linked to unconscious processes by many theorists (Freud, 1963, 1959, 1957; Jung, 1966, 1960; Kris, 1952; & Kubie, 1958). Thus, creativity and dreams are related, though this connection has rarely been empirically examined.

REVIEW OF LITERATURE

Past research has established a relationship between creativity and the content of dreams. Creativity and dream content are believed to arise from the same source, that is the unconscious. Although the terminology may be different, many theorists use similar ideas to describe each phenomenon. The idea of primary process thought (Freud, 1965; Noy, 1969) and "secondary symbolism" (Piaget, 1962) are used in describing both dreams and creativity. Primary process, a Freudian psychoanalytic term which means symbolic, nonlogical, unconscious thought, contains what Piaget describes as secondary symbolism, that is, unconscious symbols whose significance is not understood by the child. Shapiro (1975) believes the capacity for symbolizing, which may be conscious or unconscious, is the foundation on which the creative process is based, and explains that children are described as having easier access to primary process thinking and to preconscious sources.

Researchers have discovered that certain characteristics in dream content can accurately separate adults and adolescents into groups of high and low creative potential (Adelson, 1960; Sylvia, Clark, & Monroe, 1978; Domino, 1976; Schecter, Schmeidler, & Staal, 1965; Sladeczek & Domino, 1985). In these studies, however, different criteria were used for determining the composition of the

high and low creative groups.

Adelson (1960) a psychotherapist/ professor collected dreams from the students (30 extremely homogeneous college women) in his creative writing course. At the end of the course he distinguished 8 students as highly creative and 7 students as noncreative, based on their literary inventiveness, originality in choice of theme and treatment of their assignments. The 15 students' dreams were then examined, the creatives had produced a total of 52 dreams and the noncreatives, a total of 46 dreams. Adelson (1960) coded the global degree of realism of dreams using his own 3-point realism-unrealism scale: 1 = impossible, 2 = improbable, and 3 = realistic /commonplace, and he compared the various similarities and differences of the dream reports. Creatives, compared to noncreatives, were found to have more impossible dreams, bizarre dreams, and dreams in exotic and foreign settings. In addition, they much less often dreamed of their immediate environment, typically had more than one scene change (as many as 7), and often described things in terms of color.

Sylvia et al. (1978) conducted a similar experiment using a larger sample pool and more stringent measures of creativity. They extracted ten high and ten low creative undergraduates from a pool of 423 university students using scores on several cognitive measures of creativity (Functionally Remote Associations Test, The Brick Uses Test,

and the Round and Edible Objects Test), and used a laboratory setting for dream collection. Sylvia et al. (1978) arrived at a few of the same conclusions as Adelson, that is, creatives have more unusual and varied dream settings, and use more words to describe their dreams. Non-creatives were found to describe their dream setting as "home" 60% of the time.

Domino (1976) compared the dreams of 38 male high school students deemed creative through teacher nominations and high scores on two creativity measures (The Remote Associations Test and The Alternative Uses Test) with the dreams of a control group of students. The dreams were rated on the presence of primary process thinking using a 7-point scale developed by Auld, Goldenberg, and Weiss (1968). This scale of primary process thought ranges from logical to extremely bizarre with distinctive classifications in between. (Briefly, they are: 1 = the dream is logical and nothing unusual is happening, 4 = highly illogical or quite impossible series of events, 7 = the dream as a whole is extremely bizarre, uncanny, and autistic.) Domino found that dream reports of creative students do exhibit greater primary process thinking (i.e., are more bizarre) and also found that primary process thinking is significantly related to creativity within relatively homogeneous group of creative and control male high school students.

Schecter et al. (1965) did not separate subjects into

high and low creatives but chose a homogeneous sample of 105 college students majoring either in art, engineering, or science and found a statistically significant relationship between dream imaginativeness and scores on creativity tests. Art students remembered their dreams more frequently. Their dreams were characterized by fantastic situations and events, and by greater complex variation of themes within a single dream. By contrast, the nonartist groups tended to report dreams that were strongly based in reality.

Thus, there are few research studies which have investigated the relationship between dreams and creativity, and the available studies have used methodology and creativity measures that are not comparable. However, there seems to be empirical evidence for a relationship between creativity and certain dream content variables, that is, color, word count, location, and realistic properties.

In discussing children's dreams and their content, it is important to address the issue of whether or not children understand what a dream is and whether or not they can remember a dream upon request. Piaget (1929) classified children's understanding of the dream into three distinct phases: at approximately age 5-6, the child believes the dream to come from outside; around age 7-8 the child believes the source of the dream to be in the head; and around age 9-10 the child believes the dream to be a product

of thought that takes place inside the head. Children between 9-11 years of age, have been found to respond "most descriptively and elaborately ... where they are asked the night before to write and/or draw something the next morning about a dream they had during the night" (Catalano, 1984, p.284). Since fifth grade classes typically consist of 10-11 year old students, the sample for this study was obtained from two fifth grade classes.

Research has shown boys from six to twelve years old report dream content on 72% of lab awakenings, which is only slightly lower than that typically observed with adults (Foulkes, Pivik, Steadman, Spear, & Symonds, 1967). Their dreams reflected normal daily events and were primarily realistic in content.

In addition, Garfield (1984) conducted an exploratory study in which she collected dreams from 120 children between the ages of five and twelve years old. The majority of participants (69%) were between the ages of five and eight, these children were asked to write their dream and in many cases to draw a picture as well. Garfield (1984) has noted such factors as locations, word count, inanimate objects, animals, and dream people to be important in understanding the dreams of children.

Thus, the number of locations and realistic properties of a dream have been found to be empirically linked to creativity in adults and adolescents, however, research in

the area of children's dreams and creativity is scarce. It is clear that fifth grade children can relate their dreams, and content variables, such as realism and location, can be assessed. However, the question of the relationship of these dream content variables to creativity in children remains unanswered. Therefore, this study investigated the relationship of the content of children's written dream reports to children's creativity.

METHOD

Subjects

A sample of 55 children (30 girls and 25 boys) with a mean age of 10 years 11 months ($SD = 5.04$ months) was recruited from two fifth grade classes at an intermediate school in a predominantly middle class suburb of a southeastern city. Data were collected from students who agreed to participate and had parental consent to participate in the study. Of 65 students in the classes, 57 agreed to participate in the study. Of the eight nonparticipating children, one was absent throughout the entire project, three were identified learning disabled, and four students chose not to participate. In addition, one student was omitted due to absence and one student was eliminated as an outlier, according to procedures

established by Grubbs (1969), due to extreme scores on the creativity measure (originality score of 191, $z = 4.11$). Due to missing data, (i.e., not all subjects completed all tests) the sample for the various measures ranged from 50 to 55.

Procedure

The purpose of this study was to examine the nature of the relationship between children's creativity scores and dream content. Data were collected as part of a "Dream Log" project in the fifth grade classrooms. Students were asked to write actual dream reports for three consecutive school days; to complete a questionnaire about actual dream content (Information About the Dream) for each dream; and to submit one titled drawing that depicts one of their own written dream reports. Later, each student was individually administered a creativity measure (MSFM) and two subtests of an intelligence test (WISC-R).

Two separate analyses were performed on the data. First, correlations were computed for the entire sample examining the relationship between creativity, both the MSFM and the global rating of creativity, and each dream content variable. Second, the sample was divided into two groups, high and low creatives, according to originality scores on the MSFM. T-tests compared the two groups on all variables.

Instruments

Information About the Dream. The Information About the Dream questionnaire was developed after reviewing relevant literature (Adelson, 1960; Catalano, 1984; Domino, 1976; Foulkes et al., 1967; Foulkes, 1982; Hall & Van de Castle, 1966; Schecter et al, 1965; Sylvia et al., 1978). The content descriptors found to be instrumental in separating creatives' from non-creatives' dreams were compiled for this measure: color, location, and a rating of the degree of realism. The Information About the Dream was developed from this list and was field-tested with a group of twenty students who were currently in the fifth grade. The students appeared to have no problems understanding and appropriately answering the questions.

The dream collection was set up as a creative writing activity that consisted of approximately 30 minutes of morning class time. The researcher explained how to keep a record of dream activity, or a "dream log". If students could not recall a dream or did not have a dream they wanted to share, they were asked to write about a daydream. The students who chose this option were asked to write the word "daydream" on the top of their papers, so the researcher could omit the daydreams from the data analysis. Only 16 daydreams were reported.

Upon completion of their written dream report each day, the students were asked to fill out an Information About the Dream questionnaire which included marking whether or not the dream was in color, and listing the locations of the dream. The researcher recorded the total word count, the total number of colors used in written dream report, and the colors used to describe clothing. The dream was also rated on a Realism scale (Adelson, 1960) where 1 was impossible, 2 was unusual, and 3 was realistic. Each dream was rated for realism by two independent coders (93% agreement). A full copy of the Information About the Dream questionnaire is found in Appendix B.

Global Rating of Creativity. Each written dream report was given a global rating of creativity. Two experts in the area of creativity were asked to sort the dreams into four categories from low to high creativity. After the initial sorting, the raters were asked to reread each pile of dreams and check for consistency. The interrater agreement was 95%, that is, the raters agreed on the category for 136 of the 140 dreams. In addition, a college educated layperson with no training in the area of creativity, child development, or education was given the same instructions and asked to sort the dreams. When compared to one of the expert raters, this layperson agreed with the expert in 117 of the 140 dreams reaching 82% agreement. The ratings of the first expert were arbitrarily chosen for data analysis.

Dream Picture and Title. On the last day of data collection, students were asked to draw one of their dreams and to title the dream. Specific instructions were adapted from the Picture Construction task of the Torrance Tests of Creative Thinking (Torrance, 1966). The instructions were:

I want you to remember one of your dreams, then draw this dream. When you have completed drawing your dream, think up a name or a title for it and print the title on the back of the drawing. Make your title as clever and unusual as possible. Use the title to help you tell about your dream. Go ahead with your picture making it different from anyone else's and making it tell as complete and as interesting a story about your dream as possible. You will have ten minutes.

The drawing was rated on "Storytelling Articulatness" (Torrance, 1966) where:

- 0= figure but no story line, lack of detail;
- 1= figure includes detail, but no story line;
- 2= uses details, shows relationship, tells story; and
- 3= same as 2, with elaboration and detail in drawing.

The title was scored for abstractness (Ball & Torrance, 1984) where:

- 0= obvious class title,
- 1= simple title with modifier,
- 2= imaginative, descriptive title, and
- 3= abstract, but appropriate.

Illustrations were reliably scored for storytelling articulateness and abstractness of title by two independent raters with 89% and 92% agreement, respectively.

Multidimensional Stimulus Fluency Measure. Within three weeks of the dream collection the subjects were individually administered the Multidimensional Stimulus Fluency Measure (Moran, Milgram, Sawyers & Fu, 1983). The MSFM is based on previous research (Wallach & Kogan, 1965; Ward, 1968; Starkweather, 1971) and assesses ideational fluency. Ideational fluency has been found to be an important part of the creative process (Guilford, 1956, 1967; Mednick, 1962; Wallach & Kogan, 1965) and, in fact, is the most commonly used single predictor of creativity. This test was administered according to established protocols (Godwin & Moran, in press) in a gamelike fashion in an untimed and nonevaluative atmosphere. The MSFM is made up of three tasks: Uses, Pattern Meanings, and Instances. The Uses task consists of asking the subject to list all of the uses he or she could think of for a box and a piece of paper. For the Pattern Meanings task, subjects are asked to look at two 3-dimensional wooden shapes and list what these shapes could be. In the Instances tasks subjects list all of the things they can think of that are red or round.

Subjects were asked to generate as many responses as possible. All responses were recorded by the researcher. The test was scored individually according to established procedures (Godwin & Moran, in press). The responses were coded as either popular or original. Popular responses were those given by 5% or more of the sample, that is, responses

which were given three or more times (5% of 55). Original responses were those given by less than 5% of the sample. Statistical infrequency is an established procedure for determining originality scores on the MSFM (Moran, et al., 1983) and similar tests (Wallach & Kogan, 1965; Torrance, 1974). The preferred score is the number of original responses. Two research assistants were trained to agreement on the scoring of the MSFM (Uses, box=86%, paper=92%; Patterns, hammer=98%, moon=97%; and Instances, round=96%, red=98%).

Godwin and Moran (in press) reported adequate scoring reliability and consistency of the MSFM, and Moore and Sawyers (1987) found the MSFM to have reasonable test-retest reliability over a two- to three-year period. Generally, subtests of the MSFM are found to be moderate to high significant intercorrelations and are unrelated to IQ and to age (Godwin & Moran, in press). A complete copy of the MSFM is found in Appendix C.

Wechsler Intelligence Scale for Children-Revised (WISC-R). Two subtests of the WISC-R (Wechsler, 1974), the vocabulary and block design, were also administered individually to each student, and were used to assess intelligence (IQ). The WISC-R is a convergent thinking task and was administered after the MSFM. In this way, students were not influenced to give a "correct" answer on the MSFM. IQ scores were extrapolated from the block design and the

vocabulary according to procedure established in Tellegen & Briggs (1967), and were based on the correlations of vocabulary and block design to full scale reliability ($r = .82$ and $r = .73$, respectively). These two subtests have been used in past research as an estimate of IQ.

RESULTS

Means and standard deviations for all variables are reported in Table 1. Correlational analysis was used to examine the relationship between children's creativity scores and dream content. The dream content variables examined were realism, location, and word count. Only seven students mentioned at least one color, and only one student mentioned two colors in the 140 dreams, and none of these were to describe clothing, thus the color content variables were not considered in the data analysis. The creativity variables were the MSFM (total fluency, original and popular responses), storytelling articulateness, title abstractness, and global rating of creativity.

In this analysis, the MSFM, a cognitive measure of creativity, was not significantly correlated with the dream content (see Table 2). Story articulateness and title

Table 1

Means and Standard Deviations For All Variables

Variable ¹	<u>M</u>	<u>SD</u>
Total Fluency (n = 55)	62.96	49.67
Original Responses (n = 55)	26.89	32.78
Popular Responses (n = 55)	36.07	18.04
Storytelling Articulateness (n = 51)	2.00	.89
Title Abstractness (n = 50)	1.06	.84
Average Global Rating of Creativity (n = 54)	2.48	.77
Average Word Count (n = 54)	67.52	49.11
Average Location (n = 54)	1.67	.81
Average Realism (n = 54)	2.17	.59
WISC-R (n = 54)	105.39	16.07

¹ Variation in sample size is due to missing data.

Table 2

Correlations of Creativity and Dream Content

	1	2	3	4	5	6	7	8	9
1. Total Fluency	—	.99***	.96***	.13	.09	-.01	.04	.13	.18
2. Original Responses		—	.90***	.14	.06	-.00	.05	.11	.18
3. Popular Responses			—	.11	.15	-.03	.01	.16	.18
4. Storytelling Articulateness				—	-.05	.10	.33**	-.17	.12
5. Title Abstractness					—	.10	-.08	.02	-.03
6. Average Global Rating of Creativity						—	.27*	-.59***	.66***
7. Average Location							—	-.33*	.39**
8. Average Realism								—	-.33*
9. Average Word Count									—

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

abstractness were likewise unrelated to dream content. However, the average global rating of creativity, an affective measure of creativity, correlated significantly with dream content (average word count, $r = .66$, $p < .001$; average location, $r = .27$, $p < .05$; and average realism, $r = -.59$, $p < .001$). In summary when creativity was measured by a global rating of the dream, it was associated with dreams that contained a higher number of words, more locations, and more bizarre and impossible qualities. Interestingly, the relationship of location and global rating of creativity was mediated by word count ($r = .05$, when word count is partialled out) and realism ($r = .12$, with realism partialled out). Partial correlations are found in Appendix F.

When extreme groups were analyzed, high creatives were identified by scores on the MSFM greater than one standard deviation above the mean, yielding eight scores; and low creatives as the nine lowest scores on the MSFM, where the seventh, eighth and ninth scores were the same. T-tests between the high ($M = 99.00$, $SD = 23.49$) and low groups ($M = 4.33$, $SD = .67$, see Table 3) revealed that high creatives demonstrated a higher average word count $t(7.7) = 3.39$, $p < .05$; higher average global rating of creativity, $t(15) = 2.25$, $p < .05$; and

Table 3

Comparison of Extreme Groups High Creatives and Low Creatives on All Variables Assessed by Means of Student's t

	<u>High C</u> N=8	<u>Low C</u> N=9	
<u>Variable</u>	<u>M</u>	<u>M</u>	<u>t</u>
Average Global Rating of Creativity	2.48	1.83	2.25*
Title Abstractness	1.14	.56	1.93
Storytelling Articulateness	2.43	2.33	.25
Average Word Count	97.10	39.69	2.39* ¹
Average Realism	2.20	2.19	.10
Average Location	1.79	1.50	.89
WISC-R	115.38	100.11	2.72*
Age (in months)	130.25	132.56	-.97

¹ The preliminary analysis indicated unequal variances, thus, the t-test was adjusted for unequal variances.

higher WISC-R scores $t(15) = 2.72, p, .05$. (Complete t-test information is found in Appendix G.)

DISCUSSION

Creativity, when measured according to an ideational fluency task (MSFM) with only high and low creatives considered, found high creatives to have higher global ratings of creativity and higher word counts. On the other hand, when the total sample was analyzed, the MSFM did not correlate with any of the dream content variables, however, the global rating of creativity correlated with realism and word count. This discrepancy may be illuminated by examining an important aspect of the data collection procedure. The idea of a gamelike, nonevaluative atmosphere is necessary when administering a creativity measure, such as the MSFM. A similar environment is also favorable for the collection of honest and detailed dream reports. This type of atmosphere encourages the students to relax and be spontaneous, hence allowing more access to their primary process thought. In this type of environment the students have no need to be guarded or analytical. In this way, creativity, like dream work, is an avenue into primary process thinking.

When the total sample was analyzed, students who were judged as highly creative had dreams with more words and

more bizarre qualities than students judged as low in creativity. It is possible that a student may use more words to explain an unfamiliar (i.e., more bizarre) event, person, or place than to explain a dream situation that resembles more familiar waking life. It is also reasonable that reporting more locations in a dream would also cause the student to use more words to describe the dream. Therefore, word count appears to be the mediating variable. Realism, on the other hand, is associated with fantasy predisposition which is a known correlate of creativity (Domino, 1976; Moran, Sawyers, Fu, & Milgram, 1984; Schaefer, 1971; Suler, 1980), hence, the correlation between global rating of creativity and realism is unaffected by partialling out word count.

The lack of correlation between creativity as measured by the MSFM and dream content, however, also leads one to question whether the global creativity rating and the MSFM are measuring the same construct. Previous research with dreams has used varied methods to measure creativity such as teacher nominations, creativity questionnaires, dream ratings, metaphoric thinking tasks and various types of ideational fluency tasks. Looking closely, these methods of measuring creativity may be classified into two categories: cognitive and affective measures of creativity. Cognitive creativity, measured by metaphorical thinking and ideational fluency tasks, includes characteristics such as associative

thinking, remembering, perceiving and sensing, and can be likened to secondary process thought (the counterpart of primary process thought) or logical realistic thinking. Affective creativity, measured by teacher nominations and global creativity ratings, includes attributes such as temperament, emotion, moods and feelings, and can be labeled as primary process thought, or nonlogical and unrealistic thinking.

Teacher nominations here are considered as an affective measure of creativity although depending on the teacher they may also be a cognitive measure of creativity. As a whole, however, global dream ratings are similar to the teacher nominations of creative students in that the rater is looking for the same indicators in both methods. The more fantastic, impossible, unrealistic, and unusual qualities of a student or of a student's dream, the more creative; while more realistic, commonplace and uninventive qualities are considered indicators of low creativity. In fact, in previous research (Adelson, 1960; Schecter et al., 1965; Domino, 1976; Sylvia, et al., 1978; Sladeczek & Domino, 1985) dreams were rated according to realistic properties. Some of these studies used the Freudian psychoanalytic explanation of realism, that is, an indication of primary process thought. These studies report evidence of primary process (e.g., symbolic thought) more often in the dreams of high creative subjects, which would suggest that high

creatives appear to have the ability to be less logical (more impossible and unrealistic) than low creatives. Thus teachers who nominate students as high creative may be judging them on their ability to be less logical, more impossible and unrealistic.

The findings suggest that some definitional rigor needs to be applied in explaining what form of creativity is actually being measured. Taylor (1988) discussed the issue of defining creativity and referred to the "totem pole characteristics". He purported that many individual characteristics work together in various combinations to form many types of creative persons. In interpreting the findings of the present study, the cognitive and affective characteristics of creativity measured in this study may be equally important, but not entirely sufficient, in the "totem pole" conceptualization of the creative individual. That is, these findings indicate that creativity is a multifaceted construct and should be investigated as such. The lack of correlation between MSFM scores and global ratings of creativity is certainly indicative of this. Future research should consider both cognitive and affective measures in relating children's dream content and creativity.

In several studies (Adelson, 1960; Schecter et al., 1965; Domino, 1976; Sylvia et al., 1978; Sladeczek & Domino, 1985) subjects were identified as creative (very high or

very low) and then dreams were collected. This selection process omitted moderate creatives from the sample. In the Sylvia et al. (1978) study only 10 high and 10 low creatives were studied out of an original sample of 423 students. Interpretation of the findings of these studies cannot be extended beyond the extremes in a population because the dreams of students who were moderately creative were never investigated. The methodology in the present study, however, included the "middle" creatives and may thereby generalize to similar populations.

In another study with fifth grade students, teacher ratings of creative students were found to be unrelated to objective cognitive measures of creativity. Using the same measure of ideational fluency, the MSFM, Miller and Sawyers (in press) found that fifth grade teachers identified intelligent children as creative rather than children with high originality scores on the MSFM. In the related dream studies, initial selection of the sample was often based on teacher nominations (Adelson, 1960; Domino, 1976). Objective cognitive indices of creativity (ideational fluency tasks and metaphorical thinking tasks) were administered after selection had been narrowed first by teacher nominations. What happened to those students who were actually "creative" but were never judged so by their teachers? That is, if a cognitive creativity test were used to determine high and low creatives, the composition of the

sample may have been different. If an affective measure of creativity had been used after the groups were separated by teacher nominations, the results of these studies, again, may have been different.

In the analysis of the extreme groups, the present study replicated one of the Sylvia et al. (1978) findings where the dream reports of the high creatives contained more words than the low creatives. However, Sylvia et al., (1978) found high creatives to have more novel and unique dream reports whereas the present study found no significant differences on realistic properties of dreams between the extremes. Yet, when the total sample ($N=55$) was used in the present study, average global creativity ratings were found to be significantly correlated to realism ratings.

Sylvia et al. (1978) collected dream reports in a sleep lab where researchers awakened the subjects throughout the night to collect dream reports. The present study collected the dream reports retrospectively, that is, the students were asked to write the dreams they remembered from the previous night. Therefore, comparing the findings of these two studies is further compounded by the methodological differences.

Perhaps in order to answer the question of whether or not creativity and dream content are related, a thoughtful discussion of necessary attributes of creativity is appropriate. As discussed earlier, there appear to be two

categories of creativity, that is, cognitive and affective. Furthermore, these can be broken down into objective (measures unrelated to dreams) and subjective (measures related to dreams) measures. In reviewing previous research on creativity and dreams (Adelson, 1960; Schecter et al., 1965; Domino, 1976; Sylvia et al., 1978; Sladeczek & Domino, 1985) measures can be categorized in a table as shown in Figure 1.

The objective cognitive category includes the ideational fluency and metaphorical thinking tasks, that is, cognitive measures that are separate (objective) from dreams. In the objective affective category there are teacher nominations and creativity questionnaires, again unrelated to dreams. Global dream ratings for creativity may be classified in the subjective affective quadrant; subjective because creativity is related to dreams. It is important to realise that these quadrants may not always be mutually exclusive. Although not found in studies of creativity and dreams, perhaps, Gough's (1980) Adjective Checklist or Amabile's (1983) method of consensual judgement of collages for creativity may provide a means of assessing objective affective creativity where the measure of affective creativity is not related to dreams. Before the relationship of creativity and dreams can be defined as cognitive subjective (i.e., related to word, realism, and

	OBJECTIVE	SUBJECTIVE
COGNITIVE	Metaphorical Thinking (Domino, 1976; Sylvia et al., 1978) Ideational Fluency (Burdette, 1990; Domino, 1976; Sylvia et al., 1978)	Dream Content: Colors, Word Count, Realism, Locations (Adelson, 1960; Burdette, 1990; Domino, 1976; Schechter, et al., 1965; Sladeczek & Domino, 1985; Sylvia, et al., 1978)
AFFECTIVE	Teacher Nominations (Adelson, 1960; Domino, 1976; Sladeczek & Domino, 1985) Creativity Questionnaire (Schechter, et al., 1965)	Global Rating of Creativity (Burdette, 1990; Schechter, et al., 1965; Sylvia, et al., 1978)

Figure 1. Categorization of creativity measures

location) more thought is needed about how creativity is measured.

In addition, studies with comparable methodologies are needed, including studies that provide information about total samples of subjects not just high and low creatives. The results of this study reinforce an understanding of creativity as a multifaceted construct, with both cognitive and affective components. In the present study, dream content was not related to the cognitive measure of creativity. However, dream content was found to be related to global creativity ratings of the dreams. Subsequent research should systematically examine the relationships of dream content to both cognitive and affective measures of creativity to provide a clearer picture of how the content of primary process thinking may be related to creativity.

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APPENDIXES

APPENDIX A
INFORMAL ADDITIONAL DATA

In addition to the report on pages 1-32, creativity was further explained and children's attitudes toward dreams was also investigated.

REVIEW OF LITERATURE

Creativity

Researchers have found that the best way to judge young peoples' creativity or creative potential is through evaluation of their thinking processes (i.e., the approach they take in solving problems, the number of possible solutions they can think of, etc.).

For the present study, creativity has been defined as "the interpersonal and intrapersonal process by means of which original, high quality, and genuinely significant products are developed" (Sawyers, Moran, Tegano, 1990, p.70). This definition is developmental and centers on the criterion of originality of ideas (process) for children; quality of products for adolescents; and significance of products for adults. Ideational fluency or more specifically, original thinking, operates as a criterion measure for the potential for creative thinking in children.

Wallach (1970) summarized a large number of empirical studies using a similar definition of creativity as

ideational fluency and reported (1) original thinking is relatively independent of intelligence, and (2) the quality of ideational output is related to its quantity. It appears that empirical studies (Milgram & Arad, 1981; Milgram, Milgram, Rosenbloom, & Rabkin, 1978) support Mednick's (1962) postulation of an order effect in original responding. That is, the generation of many ideas leads to the production of a few highly original ones and the more popular responses are more likely to be given earlier in the response sequence, while the more original responses appear later in the response sequence (Milgram et al., 1978; Wallach & Kogan, 1965; Ward, 1968, 1969).

Ideational fluency measures typically have lenient standards for what constitutes a solution. In these measures all responses are regarded as solutions to the test problems unless they do not in any way address the question, that is, quality does not count, but responses must be appropriate. Ideational fluency, then, has to do with the generation of a quantity of ideas from which original responses may be judged. Originality, then, has to do with the quality of a response. In this study, originality served as the criterion for creativity. Originality was determined by statistical infrequency of responses (Moran, Milgram, Sawyers, & Fu, 1983).

Attitude Toward Dreams

Research in the area of children's attitudes toward dreams is nonexistent. In 1982, Domino developed a questionnaire about attitudes towards dreams (QAD), and explored the relationship of those attitudes to creativity. The QAD was administered to 196 high school students who were asked to rate each question on a five point scale: strongly agree, agree, don't know, disagree, and strongly disagree. The five response choices were later numerically collapsed into three using strongly agree/agree as one option, don't know as the second, and disagree/strongly disagree as the third (Domino, 1982). The QAD responses for boys and for girls were submitted to a chi square analysis, and 12 of the items reached significance, 11 at the .05 level and one at the .01 level (Domino, 1982). Domino found adolescents to have varied attitudes about dreams. An overall analysis of the questionnaire did not indicate any sex differences in attitudes. Domino did not address reliability and validity of his instrument. A full copy of the QAD is found in Appendix H.

Speculating about dreams and holding a theory about dreams are related to estimates of dream frequency (Robbins & Tanck, 1988; Cernovsky, 1984). Research has found a relationship between a person's attitude toward dreams and their actual dream content.

Cernovsky (1984) developed and administered a questionnaire on attitude toward dreams to a group of 46 undergraduates, and he asked these students to estimate their own dream frequency in the last six months by circling the appropriate response (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 30, 40, 50, or more than fifty). In 1988, Robbins and Tanck conducted a similar experiment using 123 undergraduates who actually reported their dreams for ten days. They found a positive relationship between the level of interest undergraduates had about their dreams and their recall for dreams, and also discovered that recalled dreams can stimulate an interest in the meaning of dreams (Robbins & Tanck, 1988).

Given that a person is motivated to remember their dreams there is one obvious difficulty. Dreams occur primarily in images, or pictures. In order to share a dream a person must translate these pictorial representations into words, either verbally or through writing (Freud, 1965; Hall & Nordby, 1972). Many times much is lost in the translation. Morris (1985) reports that allowing her clients to draw dream images often led to messages and insights not evident to the dreamer in his/her verbal dream reports. Morris (1985) explains,

Drawing, like dreaming, is a function of the right brain: It stimulates the brain to perform intuitively and simultaneously. Speech is a function of the left brain, motivating it to operate logically and linearly. Therefore, the combination and interaction of drawing and speech

creates a fuller, richer experience since it utilizes both hemispheres of the brain. ("The Dream Workbook", p. 161.)

In summary, research with adults has found a relationship between attitudes toward dreams and creativity, and also between creativity and actual dream content. No research has been published assessing children's attitudes toward dreams, and very little work has been done in the area of the content of children's dreams. Therefore, this study investigated the relationship of children's attitudes toward dreams, actual dream content, and creativity.

OVERVIEW OF LARGER STUDY

Through investigating children's attitudes toward dreams, dream content and their relationship to creativity we may begin to understand a unique thought process. The creative process has been theorized as problem solving (Stein, 1974) and specifically as associative fluency (Mednick, 1962). By examining dreams and creativity we may begin to understand how the ability to generate original ideas (associative fluency) may be related to attitudes and content of dreams.

In addition, dreams are important for understanding both children and adults, in fact, "dreams may be our best window into the inner mental life of children, who otherwise are neither interested in, nor competent at introspection"

(Foulkes, 1982, p.8). By talking to children about dreams, we can explore their feelings and concerns in a nonthreatening and nonevaluative manner.

Research Questions of Larger Study

Due to the paucity of literature in the area of children's dreams, the proposed study was one of an exploratory nature. The issues investigated are as follows:

- (1) What is the relationship between children's scores on a creativity measure and their attitudes about dreams?
- (2) What is the relationship between children's scores on a creativity measure and their dream content?
- (3) What is the relationship between children's attitudes about dreams and their dream content?

Assumptions

Two basic assumptions were made in designing this study. First was the assumption that children would report their actual dreams. As Schechter, Schmeidler, and Staal (1955, p. 419) concluded, "Invention (of a dream) seems unlikely, both because of anonymity and because culturally no great prestige or connotations ... are associated with dream recall". Therefore, in most cases children are expected to be reporting actual dreams.

The second assumption is that students would be motivated to remember their dreams. Foulkes (1982) had reason to believe that motivation may have been a factor in his studies of children's dreams. The majority of his 9-11 year old sample of children (that is, 13 out of 16 children) reported dreams, with the exception of one girl who had been held back in school due to poor motivation, and two boys who showed relative disinterest in the experiment.

METHOD

The purpose of this study was to examine the nature of the relationship between attitudes toward dreams, actual dream content, and creativity in fifth grade children. A description of the subjects, procedure and instruments are presented in this Appendix. Fifth grade subjects were asked to complete a questionnaire about their views of dreams and dreaming (Questionnaire About Dreams); to write actual dream reports for three consecutive school days; to complete a questionnaire about actual dream content (Information About the Dream) for each dream; and to submit one drawing depicting one of their own written dream reports. Later, each student was individually administered a creativity measure (MSFM) and two subtests of an intelligence measure (WISC-R). When all data were collected, each student was asked to complete an evaluation of the project.

Subjects

A sample of 55 children (30 girls and 25 boys) with a mean age of 10 years 11 months ($SD = 5.04$ months) was recruited from two fifth grade classes at an intermediate school in a predominantly middle class suburb of a southeastern city. Data were collected from students who agreed to participate and had parental consent to participate in the study. Of 65 students in the classes, 57 agreed to participate in the study. Of the eight nonparticipating children, one was absent throughout the entire project, three were identified learning disabled, and four students chose not to participate. In addition, one student was omitted due to absence and one student was eliminated as an outlier, according to procedures established by Grubbs (1969), due to extreme scores on the creativity measure (originality score of 191, $z = 4.11$).

Procedure

The class was approached one week before actual data collection began. At this time the students were given informed consent forms to be signed by students and parents. The researcher briefly explained that she was interested in what fifth grade students dream. It was requested that the forms be returned by Friday of that week, whether they

agreed to participate or not. A folder was placed in each room for students to return forms, so the teachers were not bothered with collection procedures, and so there was no daily disruption of the class to remind the students. Each classroom was provided with a reminder poster for display during this week. On Friday of the same week, the researcher returned for a few minutes during the end of the school day to pick up the returned forms. At this time she talked with the class briefly to thank them for their time and interest, and to spark some excitement for the project which began the following Monday.

The actual dream data collection took one week. Approximately 30 minutes of morning class time was set up as a creative writing assignment. All students participated in the morning activities, but the dreams were only collected from the students who had informed consent.

Daily Schedule of Events

Day 1. The students were given a revised version of the Questionnaire About Dreams (QAD) (Domino, 1982). The researcher explained how to keep a record of dream activity, or a "dream log". Students were asked to try to remember their dreams for the next week. Students were given a folder to house their dream work. Index cards with removable stickers with numbers (01 through 60) were passed around the room so that students could choose their "secret subject number". The students were asked to stick their

secret number inside their dream folder for safe keeping, and to print their name on the index card that also had the same number on it. The researcher used these cards to make a master list of subjects. The master list was destroyed after data collection was completed.

Days 2, 3, and 4. The researcher provided colored notebook paper for the students to record one of their dreams from the previous night. The students were asked to choose a dream that they would like to share and write it on the paper provided by the researcher. If a student could not recall a dream or did not have a dream he/she wanted to share, he/she was asked to write about a daydream. The students who chose this option were asked to write the word "daydream" on the top of their papers. (Only 16 daydreams were reported.) All subjects were asked to place their subject number on each page of the dream report. When students finished recording their dreams, they were then asked to answer a few questions (Information About the Dream) pertaining to their dream. The dreams and appropriate questions with answers were collected before the examiner left the room.

Day 5. The researcher provided materials on which the students drew one of their dreams. Specific instructions were adapted from the Picture Construction task of the Torrance Tests of Creative Thinking (Torrance, 1966). The instructions were:

I want you to remember one of your dreams, then draw this dream. When you have completed drawing your dream, think up a name or a title for it and print the title on the back of the drawing. Make your title as clever and unusual as possible. Use the title to help you tell about your dream. Go ahead with your picture making it different from anyone else's and making it tell as complete and as interesting a story about your dream as possible. You will have ten minutes.

After nine minutes, the students were reminded to title their dream on the back of the drawing. After ten minutes, the students were asked to put their subject number on their art work, and the completed pictures were collected.

MSFM and WISC-R. After the week of actual dream data collection, the researcher and research assistant obtained permission from each teacher for convenient times when they could allow children to be taken out of the class individually to be given the MSFM, and the subtests of the WISC-R. The WISC-R, is a convergent thinking task and was administered after the MSFM. In this way, students were not influenced to give a "correct" answer on the MSFM. Test administration took approximately 30 minutes per child.

Evaluation. After all data were collected, the teachers were provided with an evaluation questionnaire for each child. They were asked to instruct the students to anonymously (i.e., no name, no subject number) complete the questions about the project and their reaction to keeping a dream log. The questions were open-ended so that the children could express their views more easily. The

teachers collected the evaluations and stored them in an envelope provided by the researcher. This envelope was picked up the following week.

Instruments

The Questionnaire About Dreams (QAD). The 33 item Questionnaire About Dreams or QAD (Domino, 1982) was administered prior to actual dream collection. Each question was read aloud by the researcher, while the students followed along silently, and circled their answer (1= agree, 2= unsure, 3= disagree) for each of the 32 statements. A copy of the QAD is found in Appendix H.

Information About the Dream. See page 9.

Global Rating of Creativity. See page 10.

Dream Picture and Title. See page 11.

Multidimensional Stimulus Fluency Measure. See page 12.

Wechsler Intelligence Scale for Children-Revised (WISC-R). See page 13.

Evaluation of Project. The Evaluation consisted of open-ended questions that were designed to help determine how the project was received by the students. A copy of the Evaluation questionnaire is found in Appendix K.

RESULTS AND DISCUSSION

The results and discussion for dream content and creativity are found in the main section of this thesis.

Creativity and Story Articulateness/ Title Originality

The present study allowed the students to draw and title their dreams. The results revealed no evidence of a relationship between creativity and the ability to tell a story using only a drawing (pictorial, image expression) or the ability to title the drawing (written, verbal expression). Even though this measure of subjective cognitive creativity did not prove significant here, it would be rash to abandon such an idea of an subjective cognitive approach to measuring creativity. Perhaps instead of rating the dream drawing for elaborateness, the pictures could have been rated for realism as the written dreams were rated. This rating of drawings, would be more subjective, but also cognitive, and might be viewed as another option for separating high creatives from low creatives.

Creativity and the QAD

No significant differences were found between high creatives and low creatives responses to the QAD items when

subjected to a chi-square analysis, whether creativity was measured by the MSFM or by the average global rating of creativity. (A chart of frequencies for the QAD is found in Appendix I.)

The QAD and Dream Content

No significant relationship was found between content variables and the QAD when these variables were subjected to chi-square analysis. It could very well be that no relationship exists between a students' attitude about dreams and actual dream content. This question was originally exploratory in nature and no previous empirical evidence supports this relationship.

The Evaluation

The majority of students (93%) found the dream log activity to be enjoyable, while many (75%) reported that they learned something about themselves. Most students (85%) believe that paying attention to dreams is important, and many (72%) would encourage their friends to keep a dream journal. Over half of the students reported that they will continue to write their dreams.

On an evaluation sheet consisting of five yes/ no questions each containing a query for explanation, the mean

number of words written was 40. This was an optional activity that could have been answered with only five words. It appears the children were intrinsically motivated to share their thoughts and ideas about dreams. Therefore, it is possible to conclude that the students enjoyed participating in the activity.

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APPENDIX B
INFORMATION ABOUT THE DREAM

PLEASE CHECK ONE:

- ☐ DREAM
☐ NIGHTMARE

SUBJECT NUMBER:

DATE:

DAY: 1 2 3

INFORMATION ABOUT THE DREAM

1. Choose a word that best describes your dream's theme.

2. How did you feel after this dream?

3. Was this dream in ☐ color?
 ☐ black and white?
 ☐ I don't know.

4. Did your dream take place in the same location?
 ☐ yes
 ☐ no

List the locations that you remember:

APPENDIX C

MULTIDIMENSIONAL STIMULUS FLUENCY MEASURE (MSFM)

MSFM
Creativity Research
Examiner Report Form

Subject Number _____ Date: _____ Time of Day _____

Gender: Male Female Experimenter _____

Race: _____

The Examiner Says:

Today we are going to play some games. They are a new kind of game which you have probably not played before. We will play several different games. These are thinking and imagination games. You don't have to hurry. We can play as long as you want.

Proceed to Task 1.

General Comments:

Instances Task Instructions

"Now we're going to play a game called 'All the things you can think of.' I might say 'Tell me things that hurt' and I would like you to tell me as many things as you can that hurt. Let's try it. Please tell me all the things you can think of that hurt." (Let the child try to generate responses.) Then reply with "Yes, that's fine. Some other kinds of things which hurt are falling down, getting slapped, fire, getting bruised, a knife and probably there are a lot of other things too." (The examiner should vary answers to as to give all of these which the child did not give.) Then proceed by saying "You see that there are all kinds of different answers in this game. Do you know how to play?" (If the child indicates understanding of the game then proceed with test items. If the child does not understand, repeat procedure from beginning. If child is still not understanding, terminate test session). The examiner should then say "Now remember, I will name something and you are supposed to name as many things as you can. Take as long as you want. OK, let's try another." (No help should be given to the child when test items are being used.)

1. Name all the things you can think of that are Round.
2. Name all the things you can think of that are Red.

When child stops responding, ask "What else can you think of" or "Is there anything else you can think of" until child indicates he or she has no more responses.

Instances Answer Form - Round

Subject Number _____

Name all the things you can think of that are ROUND:

Child's Response _____

Instances Answer Form - Red

Subject Number _____

Name all the things you can think of that are RED:

Child's Response _____

Patterns Task Instructions

This task deals with the three dimensional designs. The administration of the test should go as follows:

"In this game I'm going to show you some blocks. After looking at each one I want you to tell me all of the things you think each block could be. Here is an example--you can turn it any way you'd like to." (Give the example block to the child.) "What could this be?" (Let the child respond). "Yes, those are fine. Some other things I was thinking of were a bridge, a bed, a building block, a chair and there are probably a lot of other things too." (The experimenter should vary answers so as to give different ones than the child. If the child indicates understanding of the game, then proceed with the tasks.)

Patterns Answer Form -



Subject Number _____

Name all the things you think this could be:



Child's Response

Patterns Answer Form -



Subject Number _____

Name all the things you think this could be:



Child's Response

MSFM
Creativity Research

Uses Task Instructions

"Now today we have a game called 'What can you use it for?' The first thing we're going to play with will be a pencil. (Experimenter hands pencil to child). I want you to tell me all the things you can think of that you can do with a pencil, or play with it, or make with it. What can you use a pencil for?" (Let child try to generate responses). Then replay with "Yes, that's fine. Some other things you could use a pencil for are as a flagpole, to dig in the dirt, or you could use a pencil as a mast in a toy boat. Probably there are a lot of other things too." (The examiner should vary answers so as to give all of these which the child did not give). Then proceed by saying "You see that there are all kinds of different answers in this game. Do you know how to play?" If the child does not understand, repeat procedure from beginning. If child still doesn't understand, terminate. The examiner should then say: "Now remember I will name something and you are supposed to tell me as many uses for it that you can think of. Take as long as you want. Let's try this one." (No help should be given to the child on test items).

1. What can you use a BOX for?

2. What can you use PAPER for?

Problems may arise when children ask additional questions. For example, if the child asks "What size box?" the experimenter should reply with a very neutral answer such as "Whatever size you think of." All clarifications of the test questions should be of non-committal type.

When the child stops responding ask "What else can you think of" or "Is there anything else you can think of" until child indicates he or she has no more responses

Uses Answer Form - Box

Subject Number _____

What can you use a BOX for?

Child's Response

Uses Answer Form - Paper

Subject Number _____

What can you use PAPER for?

Child's Response

APPENDIX D
LIST OF VARIABLE NAMES

Variable Labels and Values

Position of Data	Label	Variable/ Values
<u>Record 1</u>		
1,2	SUBNUM	Subject Number
8,9,10	AGE	Age in Months
11	SEX	1 = Male 2 = Female
<u>Questionnaire About Dreams (QAD)</u>		
		1 = Agree 2 = Unsure 3 = Disagree
13	QAD1	Everyone dreams every night.
14	QAD2	Dreams are basically silly and not important.
15	QAD3	Dreams often predict the future.
16	QAD4	Dreams have hidden meanings.
17	QAD5	Dreams are a way by which the dead speak to us.
18	QAD6	Dreams can result in useful inventions.
19	QAD7	Some people never dream.
20	QAD8	Dreams occur in black and white (rather than in color).
21	QAD9	Dreams can be used to create a poem, a painting, or a work of art.
22	QAD10	Bizarre dreams are a sign of mental illness.
23	QAD11	God can speak to us through dreams.
24	QAD12	What we dream about is usually what happened the day before.
25	QAD13	Old people often dream about dying.

- 43 QAD31 In my religion, dreams are very important.
 44 QAD32 The analysis of dreams is a silly thing.

DREAM #1

- 45 TYP1 Type of Dream
 1= Dream
 2= Nightmare
 3= Daydream
- 46 RDC1 Dream Color
 1= Color
 2= Black and white
 3= I don't remember
- 47,48 LOC1 Number of Locations of Dream
- 49,50,51 TWC1 Number of Colors Used in Dream
- 52,53,54 TCU1 Total Colors Used in Dream
- 55,56,57 CDC1 Number of Colors Used to Describe Clothing
- 58 REA1 Realistic Properties of the Dream
 1= Impossible
 2= Unusual
 3= Realistic

DREAM #2

- 59 TYP2 Type of Dream
 1= Dream
 2= Nightmare
 3= Daydream
- 60 RDC2 Dream Color
 1= Color
 2= Black and white
 3= I don't remember
- 61,62 LOC2 Number of Locations of Dream
- 63,64,65 TWC2 Total Word Count for Dream
- 66,67,68 TCU2 Number of Colors in Dream
- 69,70,71 CDC2 Number of Colors Used to Describe Clothing

72	REA2	Realistic Properties of the Dream
		1= Impossible
		2= Unusual
		3= Realistic

DREAM #3

73	TYP3	Type of Dream
		1= Dream
		2= Nightmare
		3= Daydream

74	RDC3	Dream Color
		1= Color
		2= Black and white
		3= I don't remember

75,76	LOC3	Number of Locations of Dream
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RECORD 2

6,7,8	TWC3	Total Word Count for Dream
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9,10,11	TCU3	Number of Colors in Dream
---------	------	---------------------------

12,13,14	CDC3	Number of Colors Used to Describe Clothing
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15	REA3	Realistic Properties of the Dream
		1= Impossible
		2= Unusual
		3= Realistic

DRAWING OF DREAM

16	ART	Articulateness of Dream Picture
		0= Figure contains one or more objects or characters, but tells no story.
		1= Includes detail but tells no story.
		2= Tells story using details, and relationship between characters.
		3= Same as #2 with elaboration and sequencing.

17	TITLE	Title Abstractness
		0= Obvious class titles.
		1= Simple descriptive title at concrete level.
		2=Imaginative descriptive title in which modifier goes beyond concrete.
		3= Abstract but appropriate title, going beyond what can be seen and telling a story.

MSFM

18,19,20	UO	<u>Uses</u> Original Responses
21,22,23	UX	Popular Responses
24,25,26	PO	<u>Pattern Meanings</u> Original Responses
27,28,29	PX	Popular Responses
30,31,32	IO	<u>Instances</u> Original Responses
33,34,35	IX	Popular Responses
36,37,38	WISCR	Extrapolated WISC-R Score

Global Rating of Creativity

- 1= Low Creative
- 2= Medium Low Creative
- 3= Medium High Creative
- 4= High Creative

40	C1	Global Rating of Creativity for Dream #1
41	C2	Global Rating of Creativity for Dream #2
42	C3	Global Rating of Creativity for Dream #3

Computed Variables

AVGC	The average of all global rating of creativity scores per subject. (The mean of C1, C2, and C3.)
AVGTWC	The average of all word count scores per subject. (The mean of TWC1, TWC2, and TWC3.)
AVGREA	The average of all realism scores per subject. (The mean of REA1, REA2, and REA3.)
AVGLOC	The average of all location scores per subject. (The mean of LOC1, LOC2, and LOC3.)
ORIG	The score for Original responses (those occurring only 5% of the time in the total sample) on the MSFM. The total score when the Uses, Patterns, and Instances original responses are tallied per child. (ORIG = UO + PO + IO)
POP	The score for Popular responses (those responses occurring more than 5% of the time in the total sample) on the MSFM. The total score when the Uses, Patterns, and Instances popular responses are tallied per subject. (POP = UX + PX + IX)
TF	The score for Total Fluency is the combination of the Popular responses score and the Original responses score per subject. (TF = ORIG + POP)

APPENDIX E

RAW DATA

O B S	S U B N U M E R A S E X				R A C E	Q A D 1	Q A D 2	Q A D 3	Q A D 4	Q A D 5
	2	134	FEMALE	.	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE
2	3	129	MALE	.	AGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
3	4	139	MALE	.	.	DISAGREE	AGREE	.	DISAGREE	DISAGREE
4	5	129	FEMALE	.	DISAGREE	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE
5	6	135	FEMALE	.	DISAGREE	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE
6	7	132	MALE	.	.	DISAGREE	AGREE	.	.	.
7	8	128	MALE	.	AGREE	DISAGREE	DISAGREE	.	DISAGREE	DISAGREE
8	9	123	FEMALE	.	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
9	11	145	MALE	.	DISAGREE	DISAGREE	.	AGREE	DISAGREE	DISAGREE
10	12	131	MALE	.	DISAGREE	DISAGREE	AGREE	AGREE	.	.
11	13	121	FEMALE	.	DISAGREE	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE

O B S	Q A D 6	Q A D 7	Q A D 8	Q A D 9	Q A D 0	Q A D 1	Q A D 2
	6	7	8	9	0	1	2
1	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE
2	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE
3	.	DISAGREE	.	AGREE	.	.	DISAGREE
4	AGREE	.	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
5	AGREE	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
6	.	.	DISAGREE	AGREE	DISAGREE	AGREE	AGREE
7	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	.	DISAGREE
8	AGREE	AGREE	.	AGREE	DISAGREE	DISAGREE	AGREE
9	AGREE	AGREE	.	DISAGREE	DISAGREE	AGREE	DISAGREE
10	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
11	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE

O B S	Q A D 3	Q A D 4	Q A D 5	Q A D 6	Q A D 7	Q A D 8	Q A D 9
	3	4	5	6	7	8	9
1	AGREE	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE
2	DISAGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
3	.	.	.	.	.	AGREE	.
4	.	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	AGREE
5	.	AGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
6	.	AGREE	AGREE	DISAGREE	.	AGREE	AGREE
7	.	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
8	.	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE
9	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE
10	DISAGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
11	DISAGREE	AGREE	AGREE	AGREE	AGREE	DISAGREE	AGREE

	Q A D 2 0	Q A D 2 1	Q A D 2 2	Q A D 2 3	Q A D 2 4	Q A D 2 5	Q A D 2 6
O B S							
1	AGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE
2	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE
3			DISAGREE	DISAGREE	DISAGREE	DISAGREE	AGREE
4	AGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE
5	AGREE	AGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE
6		AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE
7	DISAGREE	AGREE	DISAGREE		DISAGREE	DISAGREE	AGREE
8	AGREE	AGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE
9	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE
10	DISAGREE	AGREE	DISAGREE		AGREE	AGREE	AGREE
11	AGREE	AGREE	DISAGREE	AGREE		DISAGREE	DISAGREE

	Q A D 2 7	Q A D 2 8	Q A D 2 9	Q A D 3 0	Q A D 3 1	Q A D 3 2
O B S						
1	DISAGREE	DISAGREE	DISAGREE	DISAGREE		DISAGREE
2	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE
3		DISAGREE	DISAGREE		DISAGREE	AGREE
4	DISAGREE	DISAGREE		AGREE	DISAGREE	DISAGREE
5	AGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
6	AGREE				DISAGREE	AGREE
7	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE
8	AGREE		AGREE	DISAGREE	DISAGREE	DISAGREE
9	AGREE		AGREE	AGREE		DISAGREE
10	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
11	AGREE	DISAGREE	DISAGREE	DISAGREE		DISAGREE

	T Y P 1	R D C 1	L O C 1	T W C 1	T C U 1	C D 1	R E A 1	T Y P 2
O B S								
1	NIGHTMARE	COLOR	1	148	0	0	REALISTIC	DREAM
2	DAY DREAM							DREAM
3	DREAM	COLOR	1	12	0	0	UNUSUAL	DREAM
4	NIGHTMARE	COLOR	2	110	1	0	UNUSUAL	NIGHTMARE
5	NIGHTMARE	DON'T KNOW	1	157	0	0	UNUSUAL	NIGHTMARE
6	NIGHTMARE	COLOR	1	47	0	0	REALISTIC	NIGHTMARE
7	NIGHTMARE	COLOR	1	23	0	0	IMPOSSIBLE	DREAM
8	DREAM	COLOR	3	62	0	0	IMPOSSIBLE	DREAM
9	DREAM	DON'T KNOW	1	32	0	0	IMPOSSIBLE	DREAM
10	NIGHTMARE	COLOR	3	155	0	0	REALISTIC	NIGHTMARE
11	DREAM	COLOR	3	280	0	0	REALISTIC	DAY DREAM

O	R	L	T	T	C	R	T	R	L	T	T
B	D	O	W	C	D	E	Y	D	O	W	C
S	C	C	C	U	C	A	P	C	C	C	U
	2	2	2	2	2	2	3	3	3	3	3
1	BLACK/WHITE	2	170	0	0	IMPOSSIBLE	DREAM	COLOR	1	84	0
2	BLACK/WHITE	1	52	0	0	REALISTIC	DREAM	COLOR	1	40	0
3	COLOR	1	44	0	0	UNUSUAL	DREAM	COLOR	1	29	0
4	COLOR	2	80	0	0	IMPOSSIBLE			.	.	.
5	DON'T KNOW	4	338	0	0	UNUSUAL	NIGHTMARE	COLOR	1	211	1
6	COLOR	1	15	0	0	IMPOSSIBLE	DREAM	COLOR	1	10	0
7	COLOR	.	13	0	0	REALISTIC	DREAM	COLOR	1	13	0
8	DON'T KNOW	2	19	0	0	REALISTIC	DREAM	COLOR	3	67	0
9	COLOR	1	16	0	0	REALISTIC	DREAM	COLOR	1	13	0
10	COLOR	2	81	0	0	UNUSUAL	NIGHTMARE	COLOR	2	57	0
11		.	.	.	.		NIGHTMARE	COLOR	2	141	0

O	C	R		T	U	U		P	P	I	I	W
B	D	E	A	I	S	S	A	A	N	N	I	
S	C	A	R	L	S	S	T	T	T	T	C	C
	3	3	T	E	O	X	O	X	O	X	R	1
1	0	REALISTIC	1	1	5	9	3	6	3	19	109	4
2	0	UNUSUAL	2	1	1	5	0	7	3	13	112	.
3	0	UNUSUAL	1	0	3	6	0	5	2	14	88	1
4	.		.	.	21	15	24	12	23	48	109	4
5	0	UNUSUAL	2	1	10	10	7	9	53	52	106	2
6	0	REALISTIC	2	1	5	8	10	7	5	8	88	2
7	0	REALISTIC	1	1	3	4	4	4	3	17	129	3
8	0	REALISTIC	2	3	8	9	3	6	14	32	117	2
9	0	REALISTIC	2	0	3	3	1	7	0	14	86	2
10	0	IMPOSSIBLE	3	1	3	6	4	5	2	11	106	3
11	0	UNUSUAL	2	0	8	4	7	7	16	19	111	4

O B S	SUB		A G E	S E X	R A C E	Q A D 1	Q A D 2	Q A D 3	Q A D 4	Q A D 5	Q A D 6
12	14	126	FEMALE	.	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	
13	15	133	FEMALE	.	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	
14	16	132	FEMALE	.	DISAGREE	DISAGREE	DISAGREE	.	DISAGREE	AGREE	
15	17	133	FEMALE	.	DISAGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE	
16	18	130	MALE	.	DISAGREE	DISAGREE	AGREE	.	.	AGREE	
17	19	132	FEMALE	.	DISAGREE	AGREE	.	.	DISAGREE	AGREE	
18	20	125	FEMALE	.	DISAGREE	DISAGREE	.	.	DISAGREE	.	
19	21	135	FEMALE	.	.	DISAGREE	DISAGREE	.	DISAGREE	.	
20	22	127	FEMALE	.	DISAGREE	DISAGREE	.	AGREE	DISAGREE	AGREE	
21	23	126	FEMALE	.	DISAGREE	DISAGREE	.	AGREE	.	AGREE	
22	24	133	FEMALE	.	DISAGREE	.	.	AGREE	.	AGREE	

O B S	Q A D 7	Q A D 8	Q A D 9	Q A D 10	Q A D 11	Q A D 12	Q A D 13
12	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE	AGREE
13	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE	AGREE
14	AGREE	DISAGREE	AGREE	.	.	DISAGREE	.
15	AGREE	.	AGREE	.	AGREE	DISAGREE	AGREE
16	AGREE	.	.	.	.	DISAGREE	.
17	.	DISAGREE	AGREE	DISAGREE	.	AGREE	DISAGREE
18	AGREE	DISAGREE	AGREE	.	AGREE	DISAGREE	AGREE
19	.	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
20	AGREE	.	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE
21	.	DISAGREE	AGREE	DISAGREE	.	.	.
22	DISAGREE	.	AGREE	DISAGREE	AGREE	DISAGREE	.

O B S	Q A D 4	Q A D 5	Q A D 6	Q A D 7	Q A D 8	Q A D 9	Q A D 10	Q A D 11
12	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE
13	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE
14	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE
15	AGREE	.	AGREE	.	DISAGREE	AGREE	AGREE	AGREE
16	AGREE	.	AGREE	AGREE	.	AGREE	AGREE	AGREE
17	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE
18	.	.	AGREE	.	DISAGREE	AGREE	.	AGREE
19	.	.	AGREE	.	DISAGREE	AGREE	AGREE	AGREE
20	AGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE
21	DISAGREE	DISAGREE	AGREE	.	DISAGREE	AGREE	.	AGREE
22	AGREE	.	AGREE	.	.	AGREE	AGREE	AGREE

	Q	Q	Q	Q	Q	Q	Q
	A	A	A	A	A	A	A
O	D	D	D	D	D	D	D
B	2	2	2	2	2	2	2
S	2	3	4	5	6	7	8
12	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	AGREE	DISAGREE
13	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	AGREE	DISAGREE
14	AGREE	AGREE	.	AGREE	DISAGREE	AGREE	DISAGREE
15	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE
16	DISAGREE	AGREE	AGREE	AGREE	AGREE	.	.
17	AGREE	.	.	AGREE	AGREE	AGREE	.
18	AGREE	.	DISAGREE	.	.	.	DISAGREE
19	AGREE	AGREE	.	.	.	.	.
20	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
21	.	.	.	AGREE	.	DISAGREE	DISAGREE
22	.	AGREE	.	AGREE	AGREE	AGREE	.

	Q	Q	Q	Q	T	R	L	T	T	C
	A	A	A	A	Y	D	O	W	C	D
O	D	D	D	D	Y	D	O	W	C	D
B	2	3	3	3	P	C	C	C	U	C
S	9	0	1	2	1	1	1	1	1	1
12	DISAGREE	AGREE	DISAGREE	DISAGREE	DREAM	DON'T KNOW	1	78	0	0
13	DISAGREE	AGREE	DISAGREE	DISAGREE	NIGHTMARE	COLOR	3	91	1	0
14	DISAGREE	AGREE	.	DISAGREE	NIGHTMARE	COLOR	1	29	0	0
15	DISAGREE	AGREE	DISAGREE	DISAGREE	DREAM	DON'T KNOW	2	68	0	0
16	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DREAM	COLOR	2	38	0	0
17	DISAGREE	DISAGREE	AGREE	DISAGREE	.	.	.	.	.	.
18	DISAGREE	.	DISAGREE	DISAGREE	DREAM	COLOR	1	30	0	0
19	DISAGREE	.	.	DISAGREE	DREAM	COLOR	1	49	0	0
20	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DREAM	COLOR	1	89	0	0
21	.	DISAGREE	DISAGREE	DISAGREE	DREAM	DON'T KNOW	2	192	0	0
22	.	.	DISAGREE	DISAGREE	DREAM	COLOR	3	105	0	0

	R	T	R	L	T	T	C	R	T
	E	Y	D	O	W	C	D	E	Y
O	E	Y	D	O	W	C	D	E	Y
B	A	P	C	C	C	U	C	A	P
S	1	2	2	2	2	2	2	2	3
12	REALISTIC	DAY DREAM	.	.	.	.	.	.	NIGHTMARE
13	IMPOSSIBLE	NIGHTMARE	BLACK/WHITE	1	53	0	0	IMPOSSIBLE	DREAM
14	REALISTIC	DREAM	COLOR	1	28	0	0	REALISTIC	DREAM
15	IMPOSSIBLE	DREAM	COLOR	1	51	0	0	UNUSUAL	DREAM
16	REALISTIC	DREAM	DON'T KNOW	1	20	0	0	REALISTIC	NIGHTMARE
17	.	.	.	.	.	.	.	.	.
18	IMPOSSIBLE	DREAM	COLOR	3	130	0	0	REALISTIC	DREAM
19	REALISTIC	DAY DREAM	.	.	.	.	.	.	NIGHTMARE
20	REALISTIC	DAY DREAM	.	.	.	.	.	.	DREAM
21	IMPOSSIBLE	DAY DREAM	.	.	.	.	.	.	NIGHTMARE
22	REALISTIC	NIGHTMARE	DON'T KNOW	3	167	0	0	IMPOSSIBLE	DREAM

OBS	RDC3	LOC3	TWC3	TCUC3	REAC3	TUATL	USSL	USSL	PAAT	PAAT	INNT	INNT	WISC			
12	DON'T KNOW	1	108	0 0	UNUSUAL	3 1	35	15	19	12	79	63	144	1	3	3
13	COLOR	2	67	1 0	IMPOSSIBLE	3 1	11	8	5	7	8	18	106	4	3	4
14	BLACK/WHITE	1	29	0 0	REALISTIC	2 1	1	9	1	6	3	14	103	1	2	3
15	COLOR	3	65	2 0	REALISTIC	0 2	23	15	5	6	7	21	115	4	3	2
16	COLOR	1	25	0 0	REALISTIC	2 1	6	5	1	8	9	26	91	1	2	2
17		.	.	.	.	.	.	2	6	3	7	5	18	77	.	.
18	COLOR	2	46	0 0	REALISTIC	3 2	2	6	1	5	1	10	106	2	2	3
19	COLOR	2	44	1 0	IMPOSSIBLE	1 1	4	8	4	4	10	13	120	1	.	3
20	COLOR	1	73	0 0	IMPOSSIBLE	3 1	28	14	48	20	46	48	123	1	.	4
21	COLOR	1	82	0 0	IMPOSSIBLE	3 2	6	3	0	7	1	7	100	4	.	4
22	COLOR	3	93	0 0	IMPOSSIBLE	3 2	43	12	31	13	27	30	117	2	4	3

OBS	SUB	AN	SE	RA	QA	QA	QA	QA	QA	QA
				CE	AD	AD	AD	AD	AD	AD
					1	2	3	4	5	
23	25	133	FEMALE	.	DISAGREE	.	DISAGREE	AGREE	DISAGREE	
24	26	131	FEMALE	.	DISAGREE	DISAGREE	.	.	DISAGREE	
25	27	134	MALE	.	DISAGREE	DISAGREE	.	AGREE	DISAGREE	
26	28	132	MALE	.	.	DISAGREE	AGREE	.	DISAGREE	
27	30	136	FEMALE	.	DISAGREE	DISAGREE	.	AGREE	DISAGREE	
28	32	143	MALE	.	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	
29	33	136	FEMALE	.	DISAGREE	DISAGREE	.	AGREE	.	
30	34	132	MALE	.	DISAGREE	DISAGREE	.	AGREE	DISAGREE	
31	36	134	MALE	.	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	
32	37	132	MALE	.	DISAGREE	DISAGREE	AGREE	.	DISAGREE	
33	38	126	MALE	.	DISAGREE	DISAGREE	-----	AGREE	.	

OBS	QA	QA	QA	QA	QA	QA	QA	QA
	AD	AD	AD	AD	AD	AD	AD	AD
	6	7	8	9	0	1	1	2
23	AGREE	.	DISAGREE	AGREE	.	.	.	DISAGREE
24	AGREE	.	DISAGREE	AGREE	.	.	.	AGREE
25	AGREE	.	DISAGREE	AGREE	DISAGREE	AGREE	.	AGREE
26	.	.	DISAGREE	.	DISAGREE	.	.	DISAGREE
27	AGREE	.	DISAGREE	AGREE	AGREE	AGREE	.	DISAGREE
28	DISAGREE	AGREE	AGREE	DISAGREE	AGREE	AGREE	.	DISAGREE
29	AGREE	.	DISAGREE	.	.	AGREE	.	AGREE
30	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	.	.
31	AGREE	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	.	DISAGREE
32	AGREE	DISAGREE	DISAGREE	AGREE	.	.	.	DISAGREE
33	.	.	DISAGREE	.	.	AGREE	.	.

OBS	QA	QA	QA	QA	QA	QA	QA	QA
	AD	AD	AD	AD	AD	AD	AD	AD
	1	1	1	1	1	1	1	1
	3	4	5	6	7	8	9	
23	.	AGREE	DISAGREE	AGREE	.	DISAGREE	AGREE	
24	.	AGREE	AGREE	AGREE	.	.	AGREE	
25	.	AGREE	.	DISAGREE	.	AGREE	.	AGREE
26	.	.	DISAGREE	AGREE	DISAGREE	.	.	AGREE
27	.	AGREE	AGREE	.	DISAGREE	.	.	AGREE
28	AGREE	.	.	AGREE	.	.	.	AGREE
29	.	AGREE	AGREE	AGREE	.	DISAGREE	AGREE	
30	.	AGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE	
31	.	AGREE	.	AGREE	DISAGREE	AGREE	AGREE	
32	.	AGREE	AGREE	DISAGREE	.	AGREE	AGREE	
33	.	AGREE	.	DISAGREE	.	.	.	AGREE

	Q A	Q A	Q A	Q A	Q A	Q A	Q A
O	D	D	D	D	D	D	D
B	2	2	2	2	2	2	2
S	0	1	2	3	4	5	6
23	AGREE	AGREE	DISAGREE	AGREE	.	AGREE	AGREE
24	AGREE	AGREE	DISAGREE	DISAGREE	.	AGREE	AGREE
25	AGREE	AGREE	.	.	.	AGREE	AGREE
26	.	AGREE	AGREE	DISAGREE	.	DISAGREE	.
27	.	AGREE	DISAGREE	AGREE	.	DISAGREE	AGREE
28	AGREE	DISAGREE	AGREE	AGREE	AGREE	.	DISAGREE
29	AGREE	AGREE	AGREE	.	DISAGREE	.	DISAGREE
30	AGREE	AGREE	.	AGREE	AGREE	.	AGREE
31	AGREE	.	.	.	AGREE	AGREE	AGREE
32	AGREE	AGREE	DISAGREE	AGREE	.	DISAGREE	DISAGREE
33	AGREE	AGREE	.	.	.	.	AGREE

	Q A	Q A	Q A	Q A	Q A	Q A
O	D	D	D	D	D	D
B	2	2	2	3	3	3
S	7	8	9	0	1	2
23	AGREE	.	AGREE	.	DISAGREE	AGREE
24	AGREE	DISAGREE	DISAGREE	.	DISAGREE	.
25	AGREE	DISAGREE	AGREE	DISAGREE	.	DISAGREE
26	.	DISAGREE	.	DISAGREE	DISAGREE	.
27	AGREE	DISAGREE	.	AGREE	.	AGREE
28	.	AGREE	AGREE	DISAGREE	AGREE	.
29	AGREE	.	DISAGREE	DISAGREE	.	DISAGREE
30	AGREE	.	AGREE	AGREE	AGREE	DISAGREE
31	AGREE	DISAGREE	DISAGREE	.	DISAGREE	DISAGREE
32	AGREE	.	.	AGREE	DISAGREE	DISAGREE
33	AGREE	.	.	.	.	DISAGREE

	T Y	R D	L O	T W	T C	C D	R E	T Y
O	P	C	C	C	U	C	A	P
B	1	1	1	1	1	1	1	2
S	1	1	1	1	1	1	1	2
23	DREAM	COLOR	1	34	0	0	REALISTIC	DREAM
24	NIGHTMARE	COLOR	4	35	0	0	REALISTIC	DREAM
25	NIGHTMARE	DON'T KNOW	1	27	0	0	REALISTIC	DREAM
26	DAY DREAM	.	.	.	.	.	.	NIGHTMARE
27	DREAM	COLOR	6	66	0	0	IMPOSSIBLE	DREAM
28	DREAM	BLACK/WHITE	3	87	0	0	REALISTIC	DREAM
29	DAY DREAM	.	.	.	.	.	.	DREAM
30	NIGHTMARE	COLOR	1	37	0	0	UNUSUAL	DREAM
31	DREAM	COLOR	2	57	0	0	REALISTIC	DREAM
32	NIGHTMARE	COLOR	1	40	0	0	REALISTIC	.
33	DREAM	COLOR	1	84	0	0	IMPOSSIBLE	DREAM

O	R	L	T	T	C	R	T	R	L	T	T
B	D	O	W	C	D	E	Y	D	O	W	C
S	C	C	C	U	C	A	P	C	C	C	U
	2	2	2	2	2	2	3	3	3	3	3
23	COLOR	1	31	0	0	IMPOSSIBLE					
24	BLACK/WHITE	1	21	0	0	REALISTIC	NIGHTMARE	COLOR	2	30	0
25	BLACK/WHITE	1	18	0	0	UNUSUAL	NIGHTMARE	COLOR	1	54	0
26	DON'T KNOW	1	32	0	0	REALISTIC	DREAM	DON'T KNOW	1	31	0
27	COLOR	6	98	0	0	REALISTIC	DREAM	BLACK/WHITE	5	95	0
28	BLACK/WHITE	1	28	0	0	REALISTIC	DREAM	BLACK/WHITE	1	33	0
29	DON'T KNOW	1	51	0	0	REALISTIC	DREAM	DON'T KNOW	1	10	0
30	COLOR	2	25	0	0	IMPOSSIBLE	NIGHTMARE	COLOR	3	37	0
31	COLOR	3	69	0	0	REALISTIC	DREAM	COLOR	2	63	0
32											
33	COLOR	2	24	0	0	REALISTIC	DREAM	COLOR	1	45	0

O	C	R	T	U	U	P	P	I	T	W
B	D	E	A	S	E	A	A	S	S	I
S	C	A	R	L	S	T	T	T	T	C
	3	3	T	E	O	X	O	X	X	R
23	.	.	.	.	9	6	13	12	20	24
24	0	REALISTIC	3	2	7	11	3	10	21	34
25	0	IMPOSSIBLE	1	3	8	8	4	4	2	23
26	0	REALISTIC	2	3	2	4	8	7	7	21
27	0	IMPOSSIBLE	3	0	4	6	12	2	2	9
28	0	REALISTIC	2	1	9	8	8	3	6	16
29	0	REALISTIC	3	1	2	7	1	6	13	15
30	0	UNUSUAL	3	0	1	8	3	6	1	13
31	0	UNUSUAL	3	0	21	7	3	9	17	25
32	.	.	.	.	4	8	3	7	6	11
33	0	REALISTIC	3	1	1	9	4	6	4	22

O B S	S U B U M	A G E	S E X	R A C E	Q A D 1	Q A D 2	Q A D 3	Q A D 4	Q A D 5
34	39	133	FEMALE	.	DISAGREE	DISAGREE	.	AGREE	DISAGREE
35	40	136	FEMALE	.	AGREE	DISAGREE	AGREE	AGREE	DISAGREE
36	41	130	MALE	.	AGREE	DISAGREE	DISAGREE	.	DISAGREE
37	42	129	FEMALE	.	AGREE	DISAGREE	.	AGREE	.
38	44	135	MALE	.	DISAGREE	DISAGREE	AGREE	AGREE	.
39	46	130	FEMALE	.	.	DISAGREE	AGREE	.	.
40	47	135	MALE	.	DISAGREE	.	AGREE	AGREE	DISAGREE
41	49	125	FEMALE	.	.	DISAGREE	DISAGREE	.	DISAGREE
42	50	143	MALE	.	AGREE	AGREE	.	AGREE	DISAGREE
43	51	135	FEMALE	.	DISAGREE	DISAGREE	DISAGREE	AGREE	DISAGREE
44	53	129	FEMALE	.	AGREE	.	DISAGREE	.	DISAGREE

O B S	Q A D 6	Q A D 7	Q A D 8	Q A D 9	Q A D 10	Q A D 11	Q A D 12
34	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
35	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	.	DISAGREE
36	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
37	.	DISAGREE	.	AGREE	.	AGREE	.
38	.	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	.
39	AGREE	AGREE	DISAGREE	.	.	AGREE	AGREE
40	AGREE	DISAGREE	AGREE	AGREE	.	AGREE	AGREE
41	AGREE	DISAGREE	.	AGREE	DISAGREE	.	DISAGREE
42	.	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE
43	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
44	AGREE	.	DISAGREE	AGREE	DISAGREE	.	DISAGREE

O B S	Q A D 3	Q A D 4	Q A D 5	Q A D 6	Q A D 7	Q A D 8	Q A D 9
34	DISAGREE	AGREE	DISAGREE	.	.	DISAGREE	AGREE
35	DISAGREE	AGREE	.	.	DISAGREE	DISAGREE	AGREE
36	.	AGREE	AGREE	AGREE	AGREE	.	AGREE
37	AGREE	.	.	.	DISAGREE	.	AGREE
38	.	AGREE	AGREE	AGREE	AGREE	DISAGREE	AGREE
39	.	.	AGREE	AGREE	.	AGREE	.
40	.	.	AGREE	AGREE	.	DISAGREE	AGREE
41	.	DISAGREE	AGREE	AGREE	.	DISAGREE	AGREE
42	.	.	.	.	AGREE	DISAGREE	AGREE
43	AGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	AGREE
44	.	AGREE	.	AGREE	.	DISAGREE	AGREE

	Q A D	Q A D	Q A D	Q A D	Q A D	Q A D	Q A D
O B S	2 0	2 1	2 2	2 3	2 4	2 5	2 6
34	AGREE	AGREE	DISAGREE	AGREE	.	DISAGREE	AGREE
35	AGREE	AGREE	DISAGREE	DISAGREE	.	DISAGREE	DISAGREE
36	AGREE	AGREE	DISAGREE	.	AGREE	DISAGREE	AGREE
37	AGREE	.	AGREE	AGREE	.	AGREE	.
38	AGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE
39	AGREE	.	AGREE	AGREE	.	AGREE	AGREE
40	AGREE	AGREE	AGREE	.	AGREE	AGREE	.
41	DISAGREE	AGREE	AGREE	AGREE	AGREE	DISAGREE	AGREE
42	.	AGREE	AGREE	AGREE	DISAGREE	AGREE	AGREE
43	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE	AGREE
44	.	AGREE	.	AGREE	.	DISAGREE	AGREE

	Q A D	Q A D	Q A D	Q A D	Q A D	Q A D
O B S	2 7	2 8	2 9	3 0	3 1	3 2
34	AGREE	DISAGREE	AGREE	.	AGREE	DISAGREE
35	AGREE	DISAGREE	DISAGREE	.	DISAGREE	DISAGREE
36	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE
37	AGREE	DISAGREE	AGREE	.	AGREE	DISAGREE
38	AGREE	DISAGREE	DISAGREE	.	DISAGREE	DISAGREE
39	.	DISAGREE	.	.	.	AGREE
40	AGREE	.	AGREE	DISAGREE	.	DISAGREE
41	AGREE	.	DISAGREE	.	.	DISAGREE
42	AGREE	DISAGREE	DISAGREE	.	.	.
43	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE
44	.	DISAGREE	.	.	DISAGREE	DISAGREE

	T Y P	R D C	L O C	T W C	T C U	C D C	R E A	T Y P
O B S	1	1	1	1	1	1	1	2
34	DREAM	COLOR	1	38	0	0	REALISTIC	DREAM
35	DREAM	COLOR	1	89	0	0	UNUSUAL	DREAM
36	DREAM	COLOR	4	22	0	0	REALISTIC	DREAM
37	DREAM	COLOR	3	52	0	0	IMPOSSIBLE	.
38	DAY DREAM	.	.	.	.	.	.	NIGHTMARE
39	DREAM	COLOR	2	50	0	0	IMPOSSIBLE	DREAM
40	DREAM	COLOR	1	38	0	0	REALISTIC	DREAM
41	DREAM	COLOR	1	65	0	0	IMPOSSIBLE	DAY DREAM
42	NIGHTMARE	COLOR	2	50	0	0	IMPOSSIBLE	NIGHTMARE
43	NIGHTMARE	BLACK/WHITE	1	115	0	0	IMPOSSIBLE	DREAM
44	DREAM	DON'T KNOW	1	126	0	0	UNUSUAL	NIGHTMARE

O	R	L	T	T	C	R	T	R	L	T	T
B	D	O	W	C	D	E	Y	D	O	W	C
S	C	C	C	U	C	A	P	C	C	C	U
	2	2	2	2	2	2	3	3	3	3	3
34	COLOR	2	70	0	0	IMPOSSIBLE	DREAM	COLOR	4	172	0
35	COLOR	3	124	0	0	UNUSUAL	DREAM	COLOR	2	73	0
36	COLOR	1	33	0	0	REALISTIC	NIGHTMARE	DON'T KNOW	1	12	0
37		.	.	.	.		DREAM	DON'T KNOW	1	37	0
38	COLOR	1	16	0	0	REALISTIC	DAY DREAM		.	.	.
39	COLOR	2	92	0	0	UNUSUAL	NIGHTMARE	DON'T KNOW	2	64	0
40	COLOR	1	69	0	0	UNUSUAL	DREAM	COLOR	1	26	0
41		.	.	.	.		DREAM	COLOR	1	78	1
42	COLOR	1	8	0	0	REALISTIC	NIGHTMARE	COLOR	1	9	0
43	COLOR	1	53	0	0	IMPOSSIBLE	DAY DREAM		.	.	.
44	COLOR	2	96	0	0	UNUSUAL	DREAM	COLOR	1	50	0

O	C	R	T	U	U	P	P	I	T	W				
B	D	E	I	S	S	A	A	N	N	I				
S	C	A	A	S	S	T	T	S	S	S				
	3	3	T	E	O	X	X	O	X	R				
										C				
										C				
										C				
34	0	UNUSUAL	1	2	4	6	3	7	3	14	83	2	3	3
35	0	UNUSUAL	1	0	6	7	1	7	15	31	91	4	3	2
36	0	IMPOSSIBLE	2	1	16	10	10	12	95	45	106	1	2	3
37	0	REALISTIC	2	0	2	8	0	7	1	13	91	1	.	1
38	.		0	0	3	6	4	4	7	19	117	.	2	.
39	0	IMPOSSIBLE	2	1	3	8	1	9	3	11	117	2	3	3
40	0	UNUSUAL	2	.	1	7	2	3	3	11	103	3	3	2
41	0	REALISTIC	0	1	14	8	15	5	11	21	108	2	.	3
42	0	IMPOSSIBLE	1	3	2	6	6	7	4	23	100	4	1	3
43	.		2	0	5	6	2	7	2	7	112	4	3	.
44	0	UNUSUAL	2	1	6	7	2	7	3	9	100	3	3	2

O B S	S U B		A G E	S E X	R A C E	Q A D		Q A D		Q A D		Q A D			
	N U M					1		2		3		4		5	
45	54	.	MALE	.	DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE	AGREE	AGREE		
46	55	124	FEMALE	.	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE		
47	56	130	MALE	.	DISAGREE	DISAGREE	.	AGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE		
48	57	133	MALE	.	DISAGREE	DISAGREE	.	AGREE	AGREE	AGREE	AGREE	AGREE	AGREE		
49	58	121	MALE	.	DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE	AGREE	AGREE		
50	59	139	MALE	.	DISAGREE	DISAGREE	.	DISAGREE	AGREE	AGREE	AGREE	AGREE	AGREE		
51	60	127	FEMALE	.	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE		
52	62	132	FEMALE	.	DISAGREE	DISAGREE	DISAGREE	.	AGREE	AGREE	AGREE	DISAGREE	DISAGREE		
53	63	129	MALE	.	DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE		
54	64	129	FEMALE	.	DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE		
55	65	132	MALE	.	DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE		

	Q	Q	Q	Q	Q	Q	Q
O	A	A	A	A	A	A	A
B	D	D	D	D	D	D	D
S	6	7	8	9	0	1	2
45	AGREE	DISAGREE	DISAGREE	.	AGREE	AGREE	DISAGREE
46	AGREE	.	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
47	AGREE	AGREE	DISAGREE	AGREE	.	DISAGREE	.
48	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	.	.
49	AGREE	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	DISAGREE
50	AGREE	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	AGREE
51	DISAGREE	.	DISAGREE	.	DISAGREE	AGREE	DISAGREE
52	AGREE	.	DISAGREE	AGREE	DISAGREE	AGREE	AGREE
53	AGREE	DISAGREE	.	.	DISAGREE	AGREE	AGREE
54	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE
55	AGREE	DISAGREE	AGREE	AGREE	.	.	AGREE

	Q	Q	Q	Q	Q	Q	Q
	A	A	A	A	A	A	A
O	D	D	D	D	D	D	D
B	1	1	1	1	1	1	1
S	3	4	5	6	7	8	9
45	AGREE	AGREE	.	AGREE	AGREE	.	AGREE
46	.	AGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
47	.	AGREE	DISAGREE	AGREE	.	DISAGREE	.
48	.	AGREE	.	AGREE	DISAGREE	DISAGREE	AGREE
49	DISAGREE	AGREE	AGREE	AGREE	DISAGREE	DISAGREE	AGREE
50	.	AGREE	AGREE	DISAGREE	AGREE	AGREE	.
51	.	DISAGREE	.	AGREE	DISAGREE	DISAGREE	.
52	AGREE	AGREE	AGREE	.	DISAGREE	DISAGREE	AGREE
53	.	AGREE	AGREE	.	DISAGREE	AGREE	AGREE
54	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE	DISAGREE	AGREE
55	DISAGREE	AGREE	.	DISAGREE	DISAGREE	DISAGREE	DISAGREE

O	Q	Q	Q	Q	Q	Q	Q
B	A	A	A	A	A	A	A
S	D	D	D	D	D	D	D
	2	2	2	2	2	2	2
	0	1	2	3	4	5	6
45	AGREE	.	DISAGREE	AGREE	DISAGREE	AGREE	AGREE
46	.	DISAGREE	AGREE	AGREE	AGREE	DISAGREE	AGREE
47	AGREE	AGREE	DISAGREE	DISAGREE	.	DISAGREE	AGREE
48	.	.	DISAGREE	.	AGREE	.	.
49	AGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE
50	AGREE	AGREE	DISAGREE	.	AGREE	AGREE	AGREE
51	AGREE	AGREE	DISAGREE	.	.	DISAGREE	DISAGREE
52	AGREE	.	AGREE	DISAGREE	AGREE	DISAGREE	AGREE
53	AGREE	AGREE	DISAGREE	AGREE	AGREE	.	AGREE
54	DISAGREE	AGREE	DISAGREE	AGREE	AGREE	DISAGREE	AGREE
55	AGREE	AGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE

O	Q	Q	Q	Q	Q	Q
B	A	A	A	A	A	A
S	D	D	D	D	D	D
	2	2	2	3	3	3
	7	8	9	0	1	2
45	AGREE	DISAGREE	DISAGREE	DISAGREE	AGREE	DISAGREE
46	AGREE	.	DISAGREE	DISAGREE	DISAGREE	DISAGREE
47	DISAGREE	.	DISAGREE	DISAGREE	DISAGREE	.
48	.	DISAGREE	DISAGREE	DISAGREE	.	.
49	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
50	AGREE	DISAGREE	DISAGREE	AGREE	DISAGREE	DISAGREE
51	.	DISAGREE	DISAGREE	DISAGREE	.	DISAGREE
52	AGREE	DISAGREE	.	DISAGREE	DISAGREE	DISAGREE
53	.	DISAGREE	.	DISAGREE	DISAGREE	.
54	AGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE	DISAGREE
55	DISAGREE	DISAGREE	AGREE	AGREE	DISAGREE	DISAGREE

O	T	R	L	T	T	C	R	T
B	Y	D	O	W	C	D	E	Y
S	P	C	C	C	U	C	A	P
	1	1	1	1	1	1	1	2
45	NIGHTMARE	COLOR	3	246	0	0	IMPOSSIBLE	NIGHTMARE
46	NIGHTMARE	COLOR	2	154	0	0	REALISTIC	DREAM
47	NIGHTMARE	BLACK/WHITE	1	23	0	0	IMPOSSIBLE	DREAM
48	DREAM	COLOR	1	20	0	0	REALISTIC	DAY DREAM
49	DREAM	BLACK/WHITE	1	17	0	0	REALISTIC	DREAM
50	NIGHTMARE	COLOR	1	26	0	0	REALISTIC	.
51	DREAM	COLOR	1	90	1	0	REALISTIC	DREAM
52	NIGHTMARE	BLACK/WHITE	1	33	0	0	REALISTIC	DAY DREAM
53	DREAM	COLOR	1	38	0	0	IMPOSSIBLE	DREAM
54	DREAM	COLOR	5	70	0	0	REALISTIC	DREAM
55	DAY DREAM	.	.	.	.	.	.	DREAM

O	R	L	T	T	C	R	T	R	L	T
B	D	O	W	C	D	E	Y	D	O	W
S	C	C	C	U	C	A	P	C	C	C
	2	2	2	2	2	2	3	3	3	3
45	COLOR	3	142	0	0	IMPOSSIBLE	DAY DREAM			
46	COLOR	1	150	0	0	REALISTIC	DREAM	COLOR	1	106
47	BLACK/WHITE	1	31	0	0	REALISTIC	DREAM	COLOR	1	32
48							DREAM	COLOR	1	31
49	BLACK/WHITE	1	23	0	0	IMPOSSIBLE	DREAM	BLACK/WHITE	2	11
50							DREAM	COLOR	1	27
51	COLOR	2	184	0	0	IMPOSSIBLE	NIGHTMARE	COLOR	2	77
52							DREAM	COLOR	2	84
53	DON'T KNOW	1	29	0	0	IMPOSSIBLE	DREAM	COLOR	4	100
54	COLOR	1	102	0	0	UNUSUAL	DREAM	COLOR	1	137
55	COLOR	4	22	0	0	UNUSUAL	DREAM	COLOR	1	96

O	C	R	T	U	U	P	P	I	T	W
B	D	E	I	S	S	A	A	N	N	I
S	C	A	R	L	S	T	T	S	T	S
	3	3	T	E	O	X	O	O	X	R
45	.		2	1	0	7	4	8	2	12
46	0	REALISTIC	1	1	4	7	4	8	9	14
47	0	REALISTIC	3	1	1	7	2	2	2	14
48	0	REALISTIC	1	1	7	9	3	4	89	63
49	0	REALISTIC	1	0	4	7	4	5	2	9
50	0	UNUSUAL	2	1	3	8	1	4	8	18
51	0	IMPOSSIBLE	2	2	3	8	5	9	3	16
52	0	UNUSUAL	2	1	4	4	5	7	4	16
53	0	IMPOSSIBLE	3	1	3	4	2	6	3	11
54	0	REALISTIC	3	1	22	13	15	14	41	53
55	0	IMPOSSIBLE	3	0	2	5	0	8	2	14

02 1342 133131331333113133111311313333232101148000000312021700000001
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 17 1332 3311311212131121231111331331331302068000000111010510000002
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 40 1362 131131331323312 33111332331332331101089000000211031240000002
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 46 1302 23122113221122112121211212322211102050000000111020920000002
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 47 1351 321131311211221123111121121213231101038000000311010690000002
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 106000000311004007004008009014097 222
 56 1301 32113113123221312321133231323322201023000000112010310000003
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 57 1331 32122133132221213312232122233322110102000000033 0330000003
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 59 1391 3231111313112113112113211113313321010260000003
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 137000000331022013015014041053106 222
 65 1321 231231311221312333311331113311333101028002002311040220000002
 096000000130002005000008002014097 32

APPENDIX F
PARTIAL CORRELATIONS

--- PARTIAL CORRELATION COEFFICIENTS ---
 CONTROLLING FOR.. AVGLOC

	TF	ORIG	POP	ART	TITLE	AVGC	AVGREA	AVGTWC
TF	1.0000 (.47) P= .	.9886 (.47) P= .000	.9592 (.47) P= .000	.1373 (.47) P= .173	.0961 (.47) P= .256	-.0512 (.47) P= .363	-.2086 (.47) P= .075	.1756 (.47) P= .114
ORIG	.9886 (.47) P= .000	1.0000 (.47) P= .	.9056 (.47) P= .000	.1377 (.47) P= .173	.0666 (.47) P= .325	-.0365 (.47) P= .402	.1781 (.47) P= .110	.1660 (.47) P= .127
POP	.9592 (.47) P= .000	.9056 (.47) P= .000	1.0000 (.47) P= .	.1279 (.47) P= .191	.1454 (.47) P= .159	-.0755 (.47) P= .303	.2528 (.47) P= .040	.1827 (.47) P= .104
ART	.1373 (.47) P= .173	.1377 (.47) P= .173	.1279 (.47) P= .191	1.0000 (.47) P= .	-.0301 (.47) P= .419	.0070 (.47) P= .481	-.0667 (.47) P= .324	-.0077 (.47) P= .479
TITLE	.0961 (.47) P= .256	.0666 (.47) P= .325	.1454 (.47) P= .159	-.0301 (.47) P= .419	1.0000 (.47) P= .	.1306 (.47) P= .186	-.0041 (.47) P= .489	-.0020 (.47) P= .494
AVGC	-.0512 (.47) P= .363	-.0365 (.47) P= .402	-.0755 (.47) P= .303	.0070 (.47) P= .481	-.1306 (.47) P= .186	1.0000 (.47) P= .	-.5803 (.47) P= .000	.6434 (.47) P= .000
AVGREA	.2086 (.47) P= .075	.1781 (.47) P= .110	.2528 (.47) P= .040	-.0667 (.47) P= .324	-.0041 (.47) P= .489	-.5803 (.47) P= .000	1.0000 (.47) P= .	-.2296 (.47) P= .056
AVGTWC	.1756 (.47) P= .114	.1660 (.47) P= .127	.1827 (.47) P= .104	-.0077 (.47) P= .479	-.0020 (.47) P= .494	.6434 (.47) P= .000	-.2296 (.47) P= .056	1.0000 (.47) P= .

(COEFFICIENT / (D.F.) / SIGNIFICANCE)

" . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

--- PARTIAL CORRELATION COEFFICIENTS ---
 CONTROLLING FOR.. AVGTWC

	TF	ORIG	POP	ART	TITLE	AVGC	AVGLOC	AVGREA
TF	1.0000 (.47) P= .	.9880 (.47) P= .000	.9573 (.47) P= .000	.1161 (.47) P= .213	.1015 (.47) P= .244	-.2198 (.47) P= .065	-.0558 (.47) P= .352	-.2653 (.47) P= .033
ORIG	.9880 (.47) P= .000	1.0000 (.47) P= .	.9012 (.47) P= .000	.1237 (.47) P= .199	.0700 (.47) P= .316	-.1910 (.47) P= .094	-.0324 (.47) P= .413	.2267 (.47) P= .059
POP	.9573 (.47) P= .000	.9012 (.47) P= .000	1.0000 (.47) P= .	.0943 (.47) P= .260	.1540 (.47) P= .145	-.2594 (.47) P= .036	-.0959 (.47) P= .256	.3203 (.47) P= .012
ART	.1161 (.47) P= .213	.1237 (.47) P= .199	.0943 (.47) P= .260	1.0000 (.47) P= .	-.0504 (.47) P= .365	.0293 (.47) P= .421	.3125 (.47) P= .014	-.1360 (.47) P= .176
TITLE	.1015 (.47) P= .244	.0700 (.47) P= .316	.1540 (.47) P= .145	-.0504 (.47) P= .365	1.0000 (.47) P= .	.1684 (.47) P= .124	-.0700 (.47) P= .316	.0113 (.47) P= .469
AVGC	-.2198 (.47) P= .065	-.1910 (.47) P= .094	-.2594 (.47) P= .036	-.0293 (.47) P= .421	1.0000 (.47) P= .	.0462 (.47) P= .376	-.5753 (.47) P= .000	
AVGLOC	-.0558 (.47) P= .352	-.0324 (.47) P= .413	-.0959 (.47) P= .256	.3125 (.47) P= .014	-.0700 (.47) P= .316	1.0000 (.47) P= .	-.2269 (.47) P= .058	
AVGREA	.2653 (.47) P= .033	.2267 (.47) P= .059	.3203 (.47) P= .012	-.1360 (.47) P= .176	.0113 (.47) P= .469	-.5753 (.47) P= .000	1.0000 (.47) P= .	

(COEFFICIENT / (D.F.) / SIGNIFICANCE)

" . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

--- PARTIAL CORRELATION COEFFICIENTS ---

CONTROLLING FOR.. AVGREA

	TF	ORIG	POP	ART	TITLE	AVGC	AVGLOC	AVGTWC
TF	.10000 (.47) P= .	.9887 (.47) P= .000	.9579 (.47) P= .000	.1710 (.47) P= .120	.0927 (.47) P= .263	.0962 (.47) P= .255	.0792 (.47) P= .294	.2470 (.47) P= .044
ORIG	.9887 (.47) P= .000	1.0000 (.47) P= .	.9039 (.47) P= .000	.1714 (.47) P= .120	.0615 (.47) P= .337	.0930 (.47) P= .263	.0889 (.47) P= .272	.2320 (.47) P= .054
POP	.9579 (.47) P= .000	.9039 (.47) P= .000	1.0000 (.47) P= .	.1594 (.47) P= .137	.1466 (.47) P= .157	.0962 (.47) P= .255	.0556 (.47) P= .352	.2601 (.47) P= .036
ART	.1710 (.47) P= .120	.1714 (.47) P= .120	.1594 (.47) P= .137	1.0000 (.47) P= .	.0509 (.47) P= .364	.0017 (.47) P= .495	.2984 (.47) P= .019	.0688 (.47) P= .319
TITLE	.0927 (.47) P= .263	.0615 (.47) P= .337	.1466 (.47) P= .157	.0509 (.47) P= .364	1.0000 (.47) P= .	.1472 (.47) P= .156	.0736 (.47) P= .308	.0252 (.47) P= .432
AVGC	.0962 (.47) P= .255	.0930 (.47) P= .263	.0962 (.47) P= .255	.0017 (.47) P= .495	1.0000 (.47) P= .	1.0000 (.47) P= .	.1183 (.47) P= .209	.6449 (.47) P= .000
AVGLOC	.0792 (.47) P= .294	.0889 (.47) P= .272	.0556 (.47) P= .352	.2984 (.47) P= .019	.0736 (.47) P= .308	.1183 (.47) P= .209	1.0000 (.47) P= .	.3030 (.47) P= .017
AVGTWC	.2470 (.47) P= .044	.2320 (.47) P= .054	.2601 (.47) P= .036	.0688 (.47) P= .319	.0252 (.47) P= .432	.6449 (.47) P= .000	.3030 (.47) P= .017	1.0000 (.47) P= .

(COEFFICIENT / (D.F.) / SIGNIFICANCE)

" " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

APPENDIX G

T-TESTS

TTEST PROCEDURE

VARIABLE: WISC-R

WISC-R SCORES

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	115.37500000	13.07055032	4.62113738
2	9	100.11111111	9.99305314	3.33101771

VARIANCES	T	DF	PROB > T
UNEQUAL	2.6795	13.1	0.0188
EQUAL	2.7240	15.0	0.0157

FOR H0: VARIANCES ARE EQUAL, F' = 1.71 WITH 7 AND 8 DF
 PROB > F' = 0.4677

VARIABLE: TITLE

DRAWING TITLE

GROUP	N	MEAN	STD DEV	STD ERROR
1	7	1.14285714	0.37796447	0.14285714
2	9	0.55555556	0.72648316	0.24216105

VARIANCES	T	DF	PROB > T
UNEQUAL	2.0889	12.5	0.0578
EQUAL	1.9348	14.0	0.0735

FOR H0: VARIANCES ARE EQUAL, F' = 3.69 WITH 8 AND 6 DF
 PROB > F' = 0.1286

VARIABLE: ART

DRAW-ARTICULATE

GROUP	N	MEAN	STD DEV	STD ERROR
1	7	2.42857143	0.78679579	0.29738086
2	9	2.33333333	0.70710678	0.23570226

VARIANCES	T	DF	PROB > T
UNEQUAL	0.2510	12.3	0.8060
EQUAL	0.2546	14.0	0.8027

FOR H0: VARIANCES ARE EQUAL, F' = 1.24 WITH 6 AND 8 DF
 PROB > F' = 0.7582

TTEST PROCEDURE

VARIABLE: AVGTWC

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	97.10416667	66.27198273	23.43068419
2	9	39.68518519	16.07371138	5.35790379

VARIANCES	T	DF	PROB > T
UNEQUAL	2.3889	7.7	0.0451
EQUAL	2.5266	15.0	0.0233

FOR HO: VARIANCES ARE EQUAL, F' = 17.00 WITH 7 AND 8 DF
 PROB > F' = 0.0006

VARIABLE: AVGREA

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	2.20833333	0.50982412	0.18025005
2	9	2.18518519	0.45218946	0.15072982

VARIANCES	T	DF	PROB > T
UNEQUAL	0.0985	14.2	0.9229
EQUAL	0.0993	15.0	0.9222

FOR HO: VARIANCES ARE EQUAL, F' = 1.27 WITH 7 AND 8 DF
 PROB > F' = 0.7383

VARIABLE: AVGLOC

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	1.79166667	0.73327922	0.25925335
2	9	1.50000000	0.61237244	0.20412415

VARIANCES	T	DF	PROB > T
UNEQUAL	0.8839	13.7	0.3920
EQUAL	0.8939	15.0	0.3855

FOR HO: VARIANCES ARE EQUAL, F' = 1.43 WITH 7 AND 8 DF
 PROB > F' = 0.6217

TTEST PROCEDURE

VARIABLE: AVGC

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	1.62500000	0.51754917	0.18298126
2	9	1.33333333	0.50000000	0.16666667

VARIANCES	T	DF	PROB > T
-----------	---	----	-----------

UNEQUAL	1.1784	14.6	0.2575
EQUAL	1.1810	15.0	0.2560

FOR H0: VARIANCES ARE EQUAL, F' = 1.07 WITH 7 AND 8 DF
 PROB > F' = 0.9142

VARIABLE: SEX

GENDER

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	1.75000000	0.46291005	0.16366342
2	9	1.33333333	0.50000000	0.16666667

VARIANCES	T	DF	PROB > T
-----------	---	----	-----------

UNEQUAL	1.7838	15.0	0.0948
EQUAL	1.7752	15.0	0.0962

FOR H0: VARIANCES ARE EQUAL, F' = 1.17 WITH 8 AND 7 DF
 PROB > F' = 0.8519

VARIABLE: AGE

AGE IN MONTHS

GROUP	N	MEAN	STD DEV	STD ERROR
1	8	130.25000000	3.15096357	1.11403385
2	9	132.55555556	5.98145281	1.99381760

VARIANCES	T	DF	PROB > T
-----------	---	----	-----------

UNEQUAL	-1.0095	12.4	0.3321
EQUAL	-0.9743	15.0	0.3453

FOR H0: VARIANCES ARE EQUAL, F' = 3.60 WITH 8 AND 7 DF
 PROB > F' = 0.1084

APPENDIX H
QUESTIONNAIRE ABOUT DREAMS (QAD)

SUBJECT NUMBER:

Circle Gender: Male Female

Directions: Please read the questions asked and then decide if you agree (1), if you disagree (3), or if you are unsure if you agree or disagree (2). Circle the number corresponding to your answer for each of the 33 items.

QUESTIONNAIRE ABOUT DREAMS

	<u>Agree</u>	<u>Unsure</u>	<u>Disagree</u>
	1	2	3
1. Everyone dreams every night.			
2. Dreams are basically silly and not important.	1	2	3
3. Dreams often predict the future.	1	2	3
4. Dreams have hidden meanings.	1	2	3
5. Dreams are a way by which the dead speak to us.	1	2	3
6. Dreams can result in useful inventions.	1	2	3
7. Some people never dream.	1	2	3
8. Dreams occur in black and white (rather than in color).	1	2	3
9. Dreams can be used to create a poem, a painting, or a work of art.	1	2	3
10. Bizarre dreams are a sign of mental illness.	1	2	3
11. God can speak to us through dreams.	1	2	3
12. What we dream about is usually what happened the day before.	1	2	3
13. Old people often dream about dying.	1	2	3
14. Dreams reflect goals we wish to achieve.	1	2	3
15. Understanding one's dreams can make your life better.	1	2	3
16. I make a special effort to remember my dreams.	1	2	3

	<u>Agree</u>	<u>Unsure</u>	<u>Disagree</u>
17. During dreams the soul is released from the body and wanders around.	1	2	3
18. Most dreams occur because of what we eat (as for example, indigestion).	1	2	3
19. I would like to understand my dreams better.	1	2	3
20. People usually dream about what they are concerned with in their lives.	1	2	3
21. Dreams are like a window into our subconscious.	1	2	3
22. The dreams I remember are usually embarrassing.	1	2	3
23. The more soundly we are asleep, the more likely we are to dream.	1	2	3
24. Dreams are full of symbols.	1	2	3
25. It is possible to decide before falling asleep, what one will dream about.	1	2	3
26. Most dreams involve activities and settings that are very unusual and fantastic.	1	2	3
27. Remembering one's dreams is a sign of a good imagination.	1	2	3
28. People born blind do not dream.	1	2	3
29. Dreams are like your personality; if you are a happy person, your dreams will be happy.	1	2	3
30. Usually dreams reflect what is going on around you while you sleep; for example, a dripping faucet will cause you to dream about water.	1	2	3
31. In my religion, dreams are very important.	1	2	3
32. The analysis of dreams is a silly thing.	1	2	3

APPENDIX I
FREQUENCIES FOR QAD

Frequency of Fifth Grader Responses to Items on the Questionnaire
About Dreams

	<u>Agree</u>	<u>Unsure</u>	<u>Disagree</u>
1. Everyone dreams every night.	12	8	35
2. Dreams are basically silly and not important.	4	7	44
*3. Dreams often predict the future.	23	16	16
*4. Dreams have hidden meanings.	34	17	3
5. Dreams are a way by which the dead speak to us.	3	12	40
*6. Dreams can result in useful inventions.	43	9	3
7. Some people never dream.	15	16	24
*8. Dreams occur in black and white (rather than in color).	4	9	41
*9. Dreams can be used to create a poem, a painting, or a work of art.	44	8	3
10. Bizarre dreams are a sign of mental illness.	4	15	36
11. God can speak to us through dreams.	32	15	8
12. What we dream about is usually what happened the day before.	12	7	36
13. Old people often dream about dying.	11	33	11
*14. Dreams reflect goals we wish to achieve.	39	9	7
*15. Understanding one's dreams can make your life better.	22	18	15
*16. I make a special effort to remember my dreams.	39	7	8
17. During dreams the soul is released from the body and wanders around.	9	20	26
18. Most dreams occur because of what we eat (as for example, indigestion).	10	10	35
19. I would like to understand my dreams better.	49	5	1

20. People usually dream about what they are concerned with in their lives.	38	10	7
*21. Dreams are like a window into our subconscious.	44	7	4
22. The dreams I remember are usually embarrassing.	17	7	31
23. The more soundly we are asleep, the more likely we are to dream.	28	14	13
*24. Dreams are full of symbols.	25	20	10
*25. It is possible to decide before falling asleep, what one will dream about.	24	8	23
*26. Most dreams involve activities and settings that are very unusual and fantastic.	39	7	9
27. Remembering one's dreams is a sign of a good imagination.	37	10	8
28. People born blind do not dream.	1	16	38
29. Dreams are like your personality; if you are a happy person, your dreams will be happy.	14	12	29
30. Usually dreams reflect what is going on around you while you sleep; for example, a dripping faucet will cause you to dream about water.	11	17	27
31. In my religion, dreams are very important.	6	15	34
32. The analysis of dreams is a silly thing.	7	7	41

*Domino (1982) found these items to show significant response differences between creatives and controls using high school students.

APPENDIX J
CONSENT LETTERS

Dear Parent or Legal Guardians:

I am a graduate student in Child and Family Studies at The University of Tennessee, Knoxville and am interested in learning more about children's dreams. I would like your child to participate in a creative writing assignment about dreams. I would like your child to complete a questionnaire on attitudes toward and knowledge of dreams, and I will use the information as a part on my graduate study at the University of Tennessee. This classroom activity to learn more about children's dreams will be done as a group activity by all of the students. I am requesting permission to use the information from your child's creative writing activity for my project.

As part of this project, I would also like to interview your child individually. If permitted to participate in this project, he or she will be asked to do some creative activities which involves identifying some shapes and giving uses for familiar items. There are no right or wrong answers and no names will be used in reporting the findings. My experience has been that most children very much enjoy participation in this kind of project. In addition, two subtests of the Weschler Intelligence Scale for Children-Revised (WISC-R) will be administered. The interview will take only a few minutes.

The information will be kept strictly confidential and used for research purposes only, in other words, your child's name will not appear in association with this project and a master list of participants will be kept in a locked file cabinet. There is no risk to your child, in fact the nature of these activities should be fun for the child. Each child will be asked for voluntary participation and may withdraw from the study at any time. If your child does not choose to participate or if your child chooses to withdraw it will in no way affect his/her classroom evaluation or his/her grades. A copy of the creativity test, the subtests of the WISC-R and the classroom activity plans will be placed in the office of Farragut Intermediate School for your appraisal. I will be more than happy to share a summary of the results with you upon completion of the project, although I am not permitted to discuss the test results of individual children.

Your cooperation is appreciated. If you choose to allow your child to participate, please sign the accompanying form and return it to your child's school program. Please call me, Marsha Parsons at 974-5980, or my supervisor Dr. Deborah Tegano at 974-4538 if you have any questions.

Respectfully,

Marsha Parsons
Child and Family Studies
University of Tennessee, Knoxville
974-5980

Dear Student:

I am a student in Child and Family Studies at The University of Tennessee, Knoxville and am interested in learning more about children's dreams. I would like you to participate in a creative writing activity about dreams. I would like you to complete a questionnaire on attitudes toward and knowledge of dreams, and I will use the information as a part on my study at the University of Tennessee. This classroom activity to learn more about children's dreams will be done as a group activity by all of the students. I am asking to use the information from your creative writing activity for my project.

As part of this project, I would also like to talk to you individually. If you agree to participate in this project, you will be given asked to do some creative activities which involves identifying some shapes and giving uses for familiar items. There are no right or wrong answers and no names will be used in reporting the findings. My experience has been that most students very much enjoy doing this kind of activity. In addition, two subtests of the Weschler Intelligence Scale for Children- Revised (WISC-R) will be administered. The interview will take only a few minutes.

The information will be kept strictly confidential and used for research purposes only, in other words, your name will not appear in association with this project and I will keep all of the information in a locked file cabinet. There is no risk to you, in fact the nature of these activities should be fun for you. Each student will be asked for voluntary participation and may withdraw from the study at any time. If you do not choose to participate or if you choose to withdraw it will in no way affect your grades. I will be more than happy to share a summary of the results with you when the project is complete, although I am not permitted to discuss the test results of individual students.

Your help is appreciated. If you choose to agree to participate, please sign the accompanying form and return it to your teacher. Please call me, Marsha Parsons at 974-5980, or my supervisor Dr. Deborah Tegano at 974-4538 if you have any questions.

Respectfully,

Marsha Parsons
Child and Family Studies
University of Tennessee, Knoxville
974-5980

APPENDIX K
EVALUATION

Circle Gender: Male Female

EVALUATION

Did you enjoy keeping a dream log?

Why or why not?

Did you learn anything about yourself from writing down your dreams?

Do you believe that paying attention to your dreams is important?

Why or why not?

Would you encourage your friends to keep a dream log?

Will you continue to write your dreams, at least occasionally?

VITA

Marsha Parsons Burdette, daughter of Jerry M. and Keitha P. Parsons, was born in Memphis, Tennessee on December 4, 1962. In December 1985 she received a Bachelor of Science degree in Psychology from Appalachian State University in Boone, NC. She completed the requirements for the Master of Science degree in Child Development and received her degree in December, 1990 from The University of Tennessee, Knoxville. Presently, Marsha is a doctoral candidate in Experimental Psychology, also at UTK.

The author is a member of Omicron Nu, Knox Area Association on Young Children, and Association for the Study of Dreams. She is co-author of an article in Tennessee's Children (1988) on play and problem solving. In 1989, she co-authored a poster presentation, The effects of structure and play period duration on preschooler's play, at the Society for Research in Child Development in Kansas City, MO.