MENTAL ASSOCIATIONS IN COLORED CHILDREN

by

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A. B., University of Wichita, 1933

A THESIS

submitted in partial fulfillment of the

requirements for the degree of

MASTER OF SCIENCE

KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

1937

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## HISTORY OF THE PROBLEM

A knowledge of the methods and results of previous in-
vestigators of children's associations is indispensable.
The first careful study of children's associations was
published in 1898 by Ziehen (6). Ziehen used 45 boys of
ages eight to 14. These he studied individually, chiefly
by the oral method. The instructions to the subject, while
similar to those used by later investigators, may have
differed from them somewhat because of certain implications
or suggestions. The child, upon having a word called out to
him, had, as quickly as possible, to indicate that represen-
tation which immediately followed the mental content awak-
ened directly by the stimulus word. It is evident that
there is here a suggestion that the stimulus word called out
to the child shall not immediately be followed by another
word, but that it shall first call up an image, and that
this first image shall then be followed by a second image
to be designated verbally. This suggestion was, no doubt,
strengthened by the further questioning of the child, since,
immediately upon giving his response, he was asked whether
he had thought of a definite object.

Ziehen formulated his main problem as follows: Does
the association of ideas in the child as compared with the
adult show a preponderance or lack of certain types of

association? To answer this question, he compared the
results obtained with children with those obtained from a
large number of analogous investigations with adults. He
obtained a very striking and important result. With adults,
as the commonest case, he found that the stimulus word
awakened a general idea which in turn called up another
general idea, designated by the response word. He estimated
that this form of association occurred in 80 per cent of all
the associations of his adults. With children, on the other
hand, this association through general ideas was rare,
though Ziehen says that it gradually increases in frequency
with the age of the child. As by far the commonest case
with children, he found that the stimulus word called up an
individual or concrete idea, which called up another indi-
vidual idea. Ziehen says that while it is well known that a
child does not employ the same range of general ideas in his
thinking as does the adult, he was nevertheless astonished
to discover to what extent the individual presentations
predominate in the mind of the child. He concludes that in
this respect the association of ideas in the child is
different from that of the adult. He concluded that adults
tend to think in terms of general ideas, whereas children
think in terms of concrete representations.

Ziehen was followed in his pioneer work by Meumann (2)

who studied the mental associations of over 800 school chil-
dren, distributed in 19 classes, in the hope of obtaining
criteria of degree of intelligence. He used four groups of
12 words each: first, concrete substantives; second, verbs;
third, adjectives; fourth, abstract substantives. The words
were read to a class of children by their teacher, and to
each word the children had to write as a response the very
first word that came into their minds. The teacher gave a
few examples first. With few exceptions, the children
readily comprehended the aim of the experiment. Among the
eight-year-old children, however, there were a few who
continually wrote words which stood in no connection with
the stimulus words. Neumann presents hardly any of his
actual data, and it is not clear just what method he used in
arriving at his conclusions. The latter, however, are
stated in great detail.

As characteristics of the associations of the less
intelligent children, which serve to distinguish them from
the more intelligent, Neumann mentions the following ten-
dencies: (1) The less intelligent more often misunderstand
or misinterpret the stimulus words. (2) They more often
fail to write down a response. In the case of abstract
substantives, they may omit 60 or 70 per cent of the
responses. (3) They give a greater number of senseless

responses. The word written may be seneeless or may stend
in no apparent relation to the stimulus word. (4) Their
responses show less mental work, or, es we might say, less
thought. They take more often the form of e mere word
change or rhyme, simple opposites, or worde frequently
named together, for example, cat - mouee. (5) Their re-
sponees are more dependent upon the connections established
in their school exercises. (6) As already noted by Ziehen,
their responses are more apt to deviate from the concrete
associetions characteristic of children, to exhibit an ap-
parent precocity by tendencies toward general and ebstract
terms, and to show perseveration, of which Meumann dis-
tinguishes three kinds. First, the response word may con-
sist in the repetition of e previoue stimulue or response
word. After its first occurrence, euch a response stands
in ho epparent connection with the stimulus word. Second,
and more commonly, a stimulus word starts e dominating
chain of representetions which then determine euccessive
responees independently of the stimulus word. Third, the
subject may hold to the same category of response, for ex-
emple, e strengthening edjective. This ie en index of less
intelligence only when the peraietent category is not
typical of the ege in question.

Wreschner (5), in the course of hie extremely deteiled

study of association, obtained data on free association
with two children, one of three and three-fourth years of
age. He recorded their oral responses to something over
300 words, and compared them with the responses of 20
adults, with whom he used a list of words varying in number
from 57 to 503. All the responses were classified by the
aid of a classification system of about 40 headings, and a
comparison was then made of the percentages for adults and
children under each heading. Of course the number of chil-
dren used is entirely too small to give these percentages
any considerable reliability. Wreschner's investigation,
however, shows how greatly children may vary in the type of
their associations, since, in a group of only eight boys,
he distinguished three markedly different classes.

Without attempting to explain in full Wreschner's
classification scheme, we shall note the main similarities
and differences shown to exist between children and adults
by his percentages. Adults gave over twice as many logical
associations, over one-fourth of their associations being of
this sort. This appears to be due to the greater frequency
of association of opposites, similarities, and synonyms, and
associations from effect to cause. Association of opposites
is by far the commonest form of lo$_g$ical association among
adults, and is about five times as frequent with the adults

as with the two children. Another type of association which occurred more frequently with the adults than with the children is that which Wreschner terms verbal or speech completion. It includes three sub-types: word completion, such as snow - ball; speech reminiscences, such as fox - goose; and a certain class of attributive unions, such as mother - dear. For all of these sub-types, the percentages were greater for the adults. Taken together, they constituted about one-fourth of the adults' associations, but only seven per cent of the children's.

The children, on the other hand, favored two forms of predicative connections. One of these is the reaction-word-subject type, in which the reaction word constitutes a subject of the stimulus word, such as round - circle. This form of reaction constitutes about one-fourth of the children's associations, but less than one-tenth of the adults'. The other predicative connection preferred by the children is the stimulus-word-object, in which the stimulus word is the object of the reaction word, such as sand - strew. This form of reaction constituted nearly one-tenth of the children's associations, but only one or two per cent of the adults'. The children also gave more frequently than adults associations classified as spatial-temporal localizations, for example, windy - outside; still - night. These

constituted about one-tenth of the children's associations,
but only about one-thirtieth of the adults' associations.
In all other respects than those mentioned no appreciable
differences in association type existed between the adults
and the children.

Rosanoff and Rosanoff (3) published a study in 1913
designed to answer the question, "At what age in childhood
or in youth do the associational tendencies, as they are
observed in normal adults, become fully developed, and what
is the rate and manner of their development?" Using the
Kent-Rosanoff list of 100 words, they obtained the responses
of 300 school children, 25 of each age from four to 15 in-
clusive. In making tests the technique as originally pre-
sented could not in all cases be followed exactly; the best
way seemed to be to ask the child, after his confidence had
been gained and he had become composed, "What does table
make you think of?" Failing to obtain a response, the
examiner would select some other word such as, "What does
music make you think of?" or "What does black make you
think of?" In this way, eventually, a response was
obtained, and it was then possible to proceed with the
stimulus words in their proper order.

Rosanoff claimed that many of the stimulus words often
evoked either no response at all or only some such response

ee "I don't know that", or "Mama never taught me that".
Such instances were recorded as failures of reaction, but at
the conclusion of every test the stimulus words to which no
responses were obtained were given again with a view to ro-
ducing the number of failures of reaction in every case to
e practical minimum. The percentage of individuel reactions
in the Kent-Rosenoff adult frequency tables is 6.8. This
means that to each of the stimulus words there occurred,
excluding doubtful reactions, on an average of 68 responses
with e frequency of only one. Now the data obtained with
children were cleseified according to the same rules, using
the adult frequency tables ae e standard.

Woodrow and Lowell (4) gave the Kent-Rosenoff stimulus
words to 1,000 Minneepolis school children of ages nine to
12. The children were given 100 stimulus words end their
responses were compiled into association tables. Since
Kent and Rosenoff had made frequency tables for adults,
Woodrow end Lowell were able to take these adult frequency
tables for comparison and thus drew conclusions.

Woodrow and Lowell compered their results of children's
reactions with those of adults by making association type
tables. These association types included contrast, derk -
light; part-whole, fruit - tree; contiguity, table - dishes;
adjective noun, deep - hole; verbs, table - eat; and

similarity, <u>dark</u> - <u>black</u>. Tables were made for individual responses of white children and adults. The results showed that adults gave 68 per cent more individual responses than the white children gave.

The main points established by their comparison of the mental associations of children and adults are as follows:

1. In general, children's associations differ enormously from those of adults.

2. Marked differences exist between children and adults in the frequency of various types of association. The types which occur more frequently with adults than with children are the following: contrast, superordination, coordination, part-whole, noun-abstract-attribute, participles, and cause-effect. The types which occur more frequently in children than in adults are verbs, verb-objects, noun-adjectives, adjective-nouns, pronouns, sound similarity, contiguity, and whole-part.

3. With only 39 per cent of the stimulus words is the most frequent response the same for both children and adults.

4. Children gave fewer individual responses.

5. The number of different words given in response to any stimulus word is less for children than for adults, being on the average 102 for children and 143 for adults.

## OBJECTIVES

From Woodrow and Lowell's comparison of children's and adults' frequency tables, it seemed to the writer that the frequency tables for white children might not be at all well adapted to colored children. The differences between white children and white adults were marked; there were, therefore, two main objectives in making this study. The first was the development of mental association frequency tables for colored children comparable to those developed by Woodrow and Lowell for white children. The second objective was to make a comparative study of the mental associations of white children, colored children, and white adults. Since there have been no free association frequency tables for colored children, such a study should open new channels for psychological research. Moreover, in as much as the writer is comparing children of entirely different races, backgrounds, and social make-up, it will be interesting to know just what differences in mental life may exist and what may be their underlying causes.

## MATERIALS

The stimulus words used in this free association test were the same as those used by Woodrow and Lowell in their association frequency tables for children. In giving the test the examiner pronounces each stimulus word to a subject

who has been instructed to respond with the first word that
the stimulus word brings to his mind, or the response word.
The total number of response words with their frequencies
constitutes an association frequency table. Ninety of
these stimulus words came from Rosanoff's list. The other
ten were added by Woodrow and Lowell.

## SUBJECTS

The subjects used in this test were pupils from the
colored schools of Manhattan and Wichita, Kansas, and St.
Louis, Missouri. Ninety-three of these subjects were from
Douglas school, Wichita, 186 from L'Overture school,
Wichita, 185 from Dunber school, Wichita, and 40 from
Douglee school, Manhattan, Kansas. Since many of these sub-
jects failed to respond to some stimulus words, 30 more
tests were given during the summer of 1937 to complete the
500 frequency for each stimulus word. These additional
tests were given in St. Louis, Missouri, and Manhattan,
Kansas. The tests were given to colored children selected
from the fourth, fifth, and sixth grades. The ages selected
from these classes were from nine to 12 inclusive.

The social status of these children is indicated,
probably, by their parents' occupations which are listed
below:

1. House workers
2. Porters
3. Packing house workers
4. Painters
5. Mail carriers
6. Landscapers

7. Chauffeurs
8. Maids
9. Federal relief workers
10. Mechanics
11. Cooks
12. Truck drivers

## PROCEDURE

In this investigation of the mental associations of colored children the following procedure was observed:

Before passing out the test papers, the examiner put the classes into a receptive mood by telling a joke, which got a happy response from each subject and developed a cooperative attitude. After everyone had his laugh, the explanations of the test began:

"Boys and girls, I am going to give you a test, and I want every one of you to listen closely and follow directions. I am going to give you a word, and I want you to tell me the first word that comes to your mind when you hear this word. Now, remember I want only the first word that comes to your mind when I pronounce a word. All right, what is the first word that comes to your mind when I pronounce the word table?" Many responses were given, and the operator complimented the children on their ability to follow directions.

"Now, boys and girls, I am going to pass out some sheets of paper, and I want each one to do just what I tell

you." (The papers were passed out to each subject.) "On
the top line of your paper you will see some blank spaces.
In the first blank I want you to put your full name, in the
second blank your age, in the third blank write 'boy' or
'girl', which ever you are, and in the fourth blank I want
you to put the occupation of your parents.

"Now, instead of telling me the first word that comes
to your mind when I pronounce these words, I want each one
of you to write down on this paper I have given you the
first word that comes to your mind. Are there any questions
before we begin?" During the test the subjects were re-
minded to write only the first word that came to their
minds.

While giving the test, the author found that the sub-
jects became tired after the first 50 words, so he gave
the children a rest period of about seven minutes. During
the rest period the test papers were turned over, and each
subject was asked to lay his head on his desk. This was
done so that the children's minds would be fresh for the
next fifty stimulus words.

## RESULTS

The colored and white children's mental associations
were compared in four ways: (1) preferred responses, (2)
association types, (3) individual responses, and

(4) total responses. "Free association", according to
Jung (1), "is the current process generally linked up with
memory-traces, which are revived by the association proc-
ess." He also says, "Every association in real thinking is
accompanied by an almost endless number of more or less
distinct presentations." In making these free association
frequency tables for colored children, the writer was
endeavoring to find criterie of emotionality as indicated
by responses and the trend of mental associations of
colored children.

Table 1 shows the 100 stimulus words arranged in
alphabatical order. The order in which they were read to
the children is indicated by the numbers before the words.
Under the column headed "page" is given for each stimulus
word the page on which the frequency table for that word
may be found.

The development of free association frequency tables
for colored children should be a valuable contribution to
psychological research. By compiling the colored child-
ren's association frequency tables the writer has secured
deta which may serve as a standard in the studies of mental
associations of colored children. The response of any child
to 100 stimulus words, when interpreted correctly, will
afford one of the best pictures of his mental make-up that
can be quickly obtained.

Table 1.  Children's frequency tables

| Stimulus Words | Page | Stimulus Words | Page |
|---|---|---|---|
| 100. afraid | 59 | 45. garden | 38 |
| 38. anger | 35 | 73. ghost | 49 |
| 90. baby | 55 | 40. girl | 36 |
| 63. bath | 46 | 94. green | 57 |
| 29. beautiful | 31 | 77. hammer | 51 |
| 87. bed | 54 | 14. hand | 24 |
| 60. Bible | 45 | 48. hard | 39 |
| 11. black | 22 | 70. head | 48 |
| 99. blossom | 59 | 88. heavy | 55 |
| 66. blue | 47 | 41. high | 36 |
| 57. boy | 43 | 10. house | 22 |
| 55. bread | 42 | 67. hungry | 47 |
| 81. butter | 52 | 86. joy | 54 |
| 17. butterfly | 25 | 97. king | 58 |
| 47. cabbage | 39 | 52. lamp | 41 |
| 19. candy | 26 | 59. laugh | 44 |
| 39. carpet | 35 | 58. light | 44 |
| 20. chair | 27 | 85. lion | 54 |
| 98. cheese | 58 | 72. long | 49 |
| 75. child | 50 | 83. loud | 53 |
| 79. city | 51 | 5. man | 19 |
| 24. cold | 28 | 61. milk | 45 |
| 64. cottage | 46 | 91. moon | 56 |
| 2. dark | 18 | 9. mountain | 21 |
| 6. deep | 20 | 3. music | 18 |
| 82. doctor | 53 | 35. needle | 34 |
| 53. dream | 41 | 69. ocean | 48 |
| 49. eagle | 40 | 68. priest | 47 |
| 44. earth | 38 | 93. quiet | 56 |
| 8. eating | 21 | 36. red | 34 |
| 56. flag | 43 | 27. river | 30 |
| 33. foot | 33 | 31. rough | 32 |
| 76. friend | 50 | 95. salt | 57 |
| 16. fruit | 25 | 13. school | 23 |
| 12. fun | 23 | 92. scissors | 56 |

(Table 1. continued)

Free association tests have been used to measure intelligence, but they have not proved successful. The main value of the free association test is not to tell how much mental ability a child has, but what kind of a mind he has. Colored children live in social surroundings different from those of white children, so there may be a difference in their mental associations. The frequency tables for colored children have enabled the writer to compare white adults and white children with colored children for determining racial difference. The stimulus words are presented in Table 2. In order to read the table one must note the stimulus word at the top of each table, such as, 2. dark. The stimulus word at the top of each table is the word which is read to the subjects. The words the subjects wrote down are the response words. The numerical values are the frequencies for the different response words.

Table 2. The frequency tables

| | Stimulus: 1. TABLE | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| able | 1 | : | food | 25 |
| chair | 118 | : | fork | 1 |
| cups | 1 | : | furniture | 7 |
| cloths | 2 | : | ink | 1 |
| dishes | 25 | : | legs | 17 |
| dinners | 1 | : | marble | 1 |
| eating | 53 | : | plates | 1 |
| egg | 1 | : | sit | 24 |
| eat | 205 | : | wood | 16 |
| | | : | write | 1 |

| | Stimulus: 2. DARK | | | |
|---|---|---|---|---|
| ark | 1 | : | moon | 12 |
| bed | 3 | : | music | 1 |
| black | 91 | : | midnight | 25 |
| color | 46 | : | sleep | 1 |
| blind | 1 | : | sleeping | 1 |
| house | 1 | : | states | 1 |
| home | 1 | : | ship | 1 |
| knife | 1 | : | stars | 14 |
| light | 287 | : | sky | 1 |
| | | : | woods | 11 |

| | Stimulus: 3. MUSIC | | | |
|---|---|---|---|---|
| born | 1 | : | playing | 22 |
| band | 7 | : | play | 1 |
| dance | 20 | : | piano | 53 |
| dancing | 11 | : | round | 1 |
| enjoying | 1 | : | radio | 7 |
| horns | 1 | : | saxophone | 1 |
| hear | 1 | : | sound | 1 |
| hum | 1 | : | sweet | 6 |
| learner | 16 | : | sang | 40 |
| lessons | 8 | : | study | 1 |
| melody | 1 | : | sing | 240 |
| noise | 3 | : | singing | 53 |
| notes | 3 | : | teach | 1 |

(Table 2. continued)

| Stimulus: | 4. SICKNESS | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| bed | 111 | : | idle | 1 |
| bad | 5 | : | lied | 1 |
| die | 2 | : | measles | 1 |
| doctor | 25 | : | man | 1 |
| disease | 1 | : | mother | 1 |
| dinner | 1 | : | men | 1 |
| day | 1 | : | medicine | 24 |
| dead | 1 | : | pain | 15 |
| dying | 1 | : | sad | 6 |
| death | 4 | : | sick | 4 |
| heart | 2 | : | sister | 1 |
| health | 3 | : | suffering | 1 |
| helpful | 3 | : | unconscious | 1 |
| hospital | 49 | : | well | 11 |
| illness | 42 | : | weak | 1 |
| ill | 173 | : | weakness | 1 |

| Stimulus: | 5. MAN | | | |
|---|---|---|---|---|
| angry | 1 | : | lady | 1 |
| big | 1 | : | many | 1 |
| bad | 11 | : | male | 16 |
| child | 11 | : | men | 30 |
| colored | 18 | : | person | 27 |
| coat | 1 | : | porter | 1 |
| clothing | 16 | : | pants | 1 |
| coming | 1 | : | Ruth | 1 |
| daddy | 11 | : | Richard | 1 |
| do | 1 | : | send | 1 |
| fussing | 1 | : | strongest | 1 |
| father | 6 | : | shirt | 11 |
| gentleman | 27 | : | strong | 15 |
| grown | 14 | : | tale | 1 |
| human | 53 | : | trousers | 1 |
| hat | 1 | : | tie | 1 |
| husband | 16 | : | work | 143 |
| herd | 18 | : | walk | 1 |
| head | 1 | : | woman | 29 |
| jack | 1 | : | worker | 10 |

(Table 2. continued)

| Stimulus: 6. DEEP | | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| arm | 2 | : | leap | 1 |
| black | 1 | : | large | 43 |
| clean | 1 | : | lone | 1 |
| dig | 1 | : | muddy | 1 |
| drown | 1 | : | ocean | 17 |
| down | 64 | : | pack | 1 |
| fall | 3 | : | river | 62 |
| far | 2 | : | swing | 1 |
| fear | 1 | : | sea | 26 |
| grass | 1 | : | sink | 1 |
| ground | 1 | : | water | 76 |
| hole | 137 | : | well | 27 |
| leg | 1 | : | week | 1 |
| low | 16 | : | weigh | 10 |

| Stimulus: 7. SOFT | | | | |
|---|---|---|---|---|
| bed | 114 | : | grass | 24 |
| breed | 6 | : | good | 1 |
| cotton | 14 | : | ground | 1 |
| candy | 2 | : | hand | 19 |
| comfortable | 53 | : | hard | 74 |
| cloth | 1 | : | hair | 1 |
| clean | 1 | : | health | 1 |
| coat | 1 | : | lay | 5 |
| color | 1 | : | light | 7 |
| chair | 6 | : | mushy | 3 |
| dinner | 1 | : | mud | 19 |
| dress | 1 | : | nice | 1 |
| easy | 30 | : | off | 1 |
| easily | 25 | : | pillow | 70 |
| feel | 1 | : | silk | 1 |
| fur | 5 | : | sleep | 2 |
| food | 1 | : | silence | 1 |
| fine | 1 | : | slick | 1 |
| fair | 1 | : | sink | 1 |
| fluffy | 1 | : | velvet | 1 |
| | | : | water | 1 |

(Table 2. continued)

| Stimulus: 8. EATING | | : | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| ate | 9 | : | hamburger | 1 |
| apple | 24 | : | health | 1 |
| bread | 44 | : | knife | 1 |
| cooking | 11 | : | lunch | 1 |
| chewing | 1 | : | meeting | 1 |
| candy | 22 | : | meat | 17 |
| cook | 2 | : | mouth | 1 |
| cake | 19 | : | meal | 1 |
| drinking | 2 | : | party | 1 |
| dinner | 26 | : | people | 1 |
| dining | 16 | : | plate | 12 |
| eat | 33 | : | pie | 1 |
| feeding | 1 | : | sat | 1 |
| fruit | 13 | : | sit | 1 |
| full | 3 | : | stomach | 11 |
| food | 55 | : | sweet | 1 |
| good | 19 | : | steak | 1 |
| hungry | 34 | : | teeth | 1 |
| high | 1 | : | table | 89 |

| Stimulus: 9. MOUNTAIN | | : | | |
|---|---|---|---|---|
| Alps | 2 | : | hill | 92 |
| air | 37 | : | high | 47 |
| ball | 1 | : | house | 3 |
| beautiful | 3 | : | live | 1 |
| brick | 1 | : | mount | 3 |
| big | 13 | : | peak | 9 |
| climbing | 42 | : | rock | 81 |
| dirt | 1 | : | sky | 1 |
| falling | 1 | : | silver | 1 |
| glacier | 22 | : | snow | 51 |
| gold | 14 | : | scenery | 1 |
| hilly | 1 | : | tall | 46 |
| | | : | valley | 26 |

(Table 2. continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| | Stimulus: | 10. HOUSE | | |
| bed | 1 | : | living | 76 |
| burn | 47 | : | large | 1 |
| burning | 1 | : | light | 1 |
| break | 1 | : | lumber | 1 |
| building | 1 | : | mouse | 1 |
| big | 11 | : | noise | 1 |
| bungalow | 1 | : | playing | 1 |
| clean | 1 | : | place | 1 |
| color | 1 | : | porch | 1 |
| dark | 1 | : | people | 1 |
| door | 10 | : | rooms | 6 |
| dog | 1 | : | roof | 7 |
| furniture | 54 | : | stay | 3 |
| family | 1 | : | shelter | 4 |
| father | 1 | : | school | 59 |
| fire | 1 | : | table | 1 |
| garden | 1 | : | wood | 27 |
| high | 1 | : | work | 1 |
| home | 37 | : | warm | 3 |
| live | 114 | : | women | 1 |

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| | Stimulus: | 11. BLACK | | |
| back | 1 | : | dog | 1 |
| blackboard | 14 | : | dress | 28 |
| bright | 1 | : | hair | 5 |
| brown | 2 | : | light | 4 |
| board | 13 | : | night | 57 |
| color | 93 | : | paints | 1 |
| cut | 1 | : | pants | 1 |
| cars | 15 | : | show | 1 |
| coal | 3 | : | shoes | 29 |
| cat | 1 | : | time | 1 |
| cover | 1 | : | tar | 1 |
| colored | 16 | : | witches | 1 |
| coat | 1 | : | white | 44 |
| dark | 158 | : | yellow | 1 |

(Table 2. continued)

| Stimulus: 12. FUN | | : | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| baseball | 11 | : | play | 172 |
| games | 3 | : | playing | 51 |
| good | 27 | : | park | 1 |
| had | 1 | : | pranks | 1 |
| happy | 62 | : | playtime | 1 |
| house | 4 | : | pleasure | 20 |
| jolly | 67 | : | running | 1 |
| joy | 28 | : | run | 4 |
| kid | 1 | : | spoon | 1 |
| keen | 1 | : | school | 6 |
| kick | 1 | : | sun | 1 |
| laugh | 21 | : | skating | 2 |
| night | 2 | : | thing | 1 |
| nice | 10 | : | tag | 1 |
| | | : | walk | 1 |

| Stimulus: 13. SCHOOL | | : | | |
|---|---|---|---|---|
| arithmetic | 27 | : | little | 1 |
| boy | 3 | : | large | 1 |
| building | 4 | : | learner | 1 |
| books | 16 | : | law | 1 |
| class | 3 | : | place | 1 |
| children | 11 | : | reading | 10 |
| Dunbar | 18 | : | red | 6 |
| dress | 1 | : | read | 1 |
| education | 13 | : | study | 136 |
| go | 1 | : | studying | 18 |
| house | 20 | : | small | 1 |
| home | 2 | : | teacher | 36 |
| in | 1 | : | teaching | 1 |
| learn | 49 | : | woman | 1 |
| lessons | 59 | : | writing | 1 |
| light | 1 | : | work | 54 |

(Table 2. continued)

| Stimulus: 14. HAND | | : | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| arm | 11 | : | handled | 1 |
| apple | 1 | : | lew | 1 |
| bone | 1 | : | little | 1 |
| bring | 1 | : | lift | 1 |
| beeutiful | 1 | : | man | 11 |
| clean | 23 | : | movement | 1 |
| cerry | 2 | : | middle | 1 |
| cook | 1 | : | nice | 1 |
| dirty | 7 | : | pick up | 1 |
| fill | 1 | : | pen | 1 |
| figure | 1 | : | pencil | 1 |
| finger | 187 | : | reach | 1 |
| fight | 13 | : | sheke | 1 |
| fat | 1 | : | steal | 1 |
| foot | 1 | : | skin | 1 |
| feet | 2 | : | two | 1 |
| flesh | 1 | : | teke | 1 |
| greb | 1 | : | use | 67 |
| girl | 1 | : | woman | 1 |
| hurt | 16 | : | work | 51 |
| hold | 1 | : | write | 33 |
| held | 1 | : | writing | 42 |
| hand | 1 | : | wetch | 1 |

| Stimulus: 15. SHORT | | : | | |
|---|---|---|---|---|
| apples | 1 | : | line | 2 |
| book | 1 | : | long | 28 |
| big | 1 | : | legs | 11 |
| cendy | 1 | : | level | 1 |
| cut | 1 | : | less | 1 |
| dress | 5 | : | man | 26 |
| dog | 1 | : | men | 7 |
| dumpy | 2 | : | neil | 1 |
| fat | 1 | : | nerrow | 1 |
| flying | 1 | : | pents | 15 |
| girl | 1 | : | small | 30 |
| house | 1 | : | people | 17 |
| hand | 1 | : | road | 1 |
| heir | 22 | : | shirt | 3 |
| heert | 1 | : | smile | 1 |

(Stimulus:  15. SHORT continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| inlight | 1 | : | string | 1 |
| little | 106 | : | stub | 1 |
| low | 58 | : | soft | 1 |
|  |  | : | tell | 44 |

| Stimulus: | 16. | FRUIT | | |
|---|---|---|---|---|
| apple | 177 | : | grow | 1 |
| apples | 6 | : | good | 24 |
| board | 1 | : | health | 5 |
| bananas | 62 | : | juicy | 1 |
| California | 1 | : | orange | 93 |
| candy | 1 | : | orchard | 1 |
| eat | 71 | : | pretty | 1 |
| eating | 36 | : | trees | 1 |
| food | 3 | : | sweet | 17 |

| Stimulus: | 17. | BUTTERFLY | | |
|---|---|---|---|---|
| animal | 16 | : | flies | 6 |
| ants | 2 | : | flying | 2 |
| bird | 4 | : | fly | 186 |
| butter | 1 | : | flew | 3 |
| black | 10 | : | flower | 20 |
| bug | 2 | : | grasshopper | 2 |
| bat | 1 | : | insects | 51 |
| butter | 18 | : | legs | 1 |
| butteffinger | 1 | : | nest | 1 |
| beautiful | 11 | : | pretty | 21 |
| bird | 1 | : | summer | 1 |
| caterpiller | 65 | : | sky | 1 |
| creature | 2 | : | spring | 1 |
| color | 1 | : | wing | 60 |
| eagle | 1 | : | worms | 3 |
| yellow | 3 | : | worm | 1 |

(Table 2. continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| Stimulus: 18. SMOOTH | | | | |
| bad | 1 | : | hand | 1 |
| bumpy | 1 | : | high | 1 |
| black | 1 | : | honey | 1 |
| bed | 1 | : | ice | 1 |
| board | 1 | : | iron | 1 |
| cut | 1 | : | like | 1 |
| clear | 1 | : | live | 1 |
| car | 1 | : | level | 107 |
| cool | 1 | : | marble | 1 |
| chair | 1 | : | paper | 52 |
| candy | 1 | : | pretty | 1 |
| clean | 1 | : | pavement | 1 |
| divan | 1 | : | road | 1 |
| clear | 1 | :; | rough | 2 |
| disk | 2 | : | read | 1 |
| easy | 20 | : | self | 1 |
| even | 2 | :: | soft | 10 |
| flat | 1 | : | surface | 1 |
| face | 75 | : | skin | 1 |
| floor | 1 | : | slick | 80 |
| frost | 1 | : | smoothness | 1 |
| glass | 2 | : | straight | 23 |
| hard | 83 | : | sleep | 1 |
| hair | 1 | : | thin | 1 |
| good | 1 | : | table | 3 |

| | | | | |
|---|---|---|---|---|
| Stimulus: 19. CANDY | | | | |
| aches | 1 | ': | for | 1 |
| Baby Ruth | 1 | : | gum | 1 |
| buy | 14 | : | good | 59 |
| brook | 1 | : | honey | 1 |
| blow | 1 | : | like | 3 |
| cake | 15 | : | pork chops | 1 |
| chew | 1 | : | red | 1 |
| can | 1 | : | sweet | 184 |
| cheerful | 1 | : | sugar | 38 |
| candies | 1 | : | sucker | 12 |
| dessert | 14 | : | square | 2 |
| eat | 90 | : | set | 1 |
| eating | 54 | : | taste | 1 |

(Table 2. continued)

| Stimulus: | 20. CHAIR | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| air | 1 | : | mother | 1 |
| bed | 1 | : | nice | 1 |
| brake | 31 | : | rocker | 5 |
| baby | 3 | : | red | 7 |
| broken | 1 | : | streight | 9 |
| band | 1 | : | seat | 46 |
| cook | 1 | : | sit | 176 |
| down | 1 | : | sitting | 64 |
| furniture | 11 | : | sat | 6 |
| hard | 27 | : | set | 40 |
| here | 1 | : | table | 57 |
| house | 1 | : | wood | 1 |
| legs | 6 | : | work | 1 |

| Stimulus: | 21. SWEET | | | |
|---|---|---|---|---|
| apple | 6 | : | fruit | 1 |
| air | 1 | : | fine | 1 |
| baby | 1 | : | good | 39 |
| black | 1 | : | honey | 1 |
| bitter | 4 | : | juicy | 1 |
| cake | 38 | : | meat | 1 |
| candy | 199 | : | sugar | 80 |
| dear | 1 | : | smell | 12 |
| eating | 35 | : | sour | 49 |
| eat | 1 | : | salt | 1 |
| flower | 1 | : | sundae | 1 |
| food | 1 | : | taste | 24 |

| Stimulus: | 22. WHISTLE | | | |
|---|---|---|---|---|
| blow | 125 | : | man | 4 |
| bird | 1 | : | noise | 99 |
| boy | 19 | : | nose | 1 |
| cap | 1 | : | police | 5 |
| boy | 2 | : | shrill | 6 |
| call | 1 | : | shout | 1 |
| exercise | 1 | : | sing | 12 |
| fun | 1 | : | song | 7 |
| glad | 1 | : | sound | 5 |

(Stimulus: 22. WHISTLE continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| horn | 1 | : | teacher | 1 |
| hard | 1 | : | train | 33 |
| horns | 1 | : | tone | 1 |
| hear | 1 | : | tune | 1 |
| holler | 1 | : | wind | 1 |
| loud | 76 | : | women | 2 |
| music | 41 | : | walking | 1 |
| mouth | 3 | : | wax | 1 |
| move | 1 | : | wish | 1 |

| | Stimulus: | 25. | WOMAN | |
|---|---|---|---|---|
| bat | 1 | : | hair | 2 |
| big | 1 | : | large | 1 |
| baby | 10 | : | lady | 74 |
| boy | 1 | : | live | 1 |
| body | 1 | : | like | 1 |
| cook | 2 | : | ladies | 4 |
| clothes | 33 | : | looks | 1 |
| children | 1 | : | mademoiselle | 1 |
| dresses | 47 | : | marry | 1 |
| dress | 3 | : | mother | 142 |
| female | 2 | : | McLean | 1 |
| forest | 1 | : | man | 53 |
| fast | 1 | : | nice | 1 |
| fat | 1 | : | parent | 1 |
| finger | 1 | : | person | 1 |
| girl | 3 | : | pretty | 2 |
| grown | 1 | : | sweep | 1 |
| good | 1 | : | saw | 1 |
| human | 82 | : | silk stockings | 1 |
| handsome | 1 | : | straight | 1 |
| hat | 10 | : | working | 1 |
| head | 1 | : | weak | 1 |

| | Stimulus: | 24. | COLD | |
|---|---|---|---|---|
| burn | 5 | : | ice | 3 |
| bed | 1 | : | lake | 1 |
| blowing | 1 | : | money | 1 |
| blanket | 1 | : | mother | 1 |

(Stimulus: 24. COLD continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| climate | 1 | : | out doors | 1 |
| coal | 20 | : | ocean | 1 |
| coat | 1 | : | old | 1 |
| chilly | 1 | : | rabbit | 1 |
| day | 1 | : | rain | 1 |
| deep | 1 | : | shiver | 1 |
| eat | 1 | : | soul | 1 |
| freezing | 76 | : | snow | 85 |
| freeze | 124 | : | shovel | 1 |
| food | 1 | : | sea | 1 |
| fine | 1 | : | stove | 1 |
| frozen | 1 | : | thin | 1 |
| froze | 1 | : | wood | 1 |
| fuel | 1 | : | wind | 12 |
| fur | 1 | : | winter | 11 |
| fast | 1 | : | warm | 33 |
| hat | 2 | : | water | 90 |
| heat | 1 | : | weather | 11 |

| | Stimulus: | 25. SLOW | | |
|---|---|---|---|---|
| back | 1 | : | law | 1 |
| baby | 1 | : | movie | 2 |
| barely | 1 | : | motor | 1 |
| behind | 1 | : | mole | 1 |
| car | 3 | : | mice | 1 |
| cart | 88 | : | man | 1 |
| coming | 1 | : | poking | 1 |
| creepy | 1 | : | person | 1 |
| dragley | 1 | : | play | 1 |
| dry | 1 | : | poke | 14 |
| draggy | 2 | : | pokey | 1 |
| early | 1 | : | quick | 1 |
| eat | 1 | : | slow | 3 |
| fast | 153 | : | snail | 4 |
| faster | 1 | : | short | 1 |
| feet | 11 | : | summer | 1 |
| human | 1 | : | teed | 1 |
| hay | 1 | : | time | 1 |
| horse | 1 | : | tonic | 1 |
| kid | 1 | : | worker | 1 |
| lazy | 97 | | walk | 87 |

(Table 2. continued)

| Stimulus: 26. WISH | | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| asking | 1 | : | have | 5 |
| bicycle | 2 | : | here | 1 |
| book | 1 | : | had | 62 |
| car | 1 | : | hope | 1 |
| choose | 1 | : | light | 1 |
| candy | 31 | : | luck | 11 |
| children | 1 | : | make | 1 |
| cat | 1 | : | nickel | 1 |
| chicken | 1 | : | odd | 1 |
| clock | 1 | : | something | 76 |
| doll | 1 | : | some | 1 |
| earn | 1 | : | show | 1 |
| fifth | 1 | : | true | 32 |
| for | 1 | : | toy | 1 |
| fish | 1 | : | thinking | 1 |
| gift | 13 | : | ugly | 13 |
| get | 9 | : | went | 183 |
| good | 1 | : | wise | 1 |
|  |  | : | with | 1 |

| Stimulus: 27. RIVER | | | | |
|---|---|---|---|---|
| ball | 1 | : | large | 1 |
| bridge | 42 | : | ocean | 1 |
| creek | 1 | : | pretty | 1 |
| deep | 25 | : | riverside | 16 |
| drown | 21 | : | swim | 45 |
| fish | 1 | : | stream | 12 |
| fishing | 6 | : | swimming | 52 |
| flows | 4 | : | sea | 1 |
| lake | 50 | : | water | 227 |
|  |  | : | washing | 1 |

| Stimulus: 28. WHITE | | | | |
|---|---|---|---|---|
| black | 26 | : | hair | 1 |
| board | 1 | : | lights | 128 |
| boy | 1 | : | man | 1 |
| clean | 26 | : | milk | 1 |
| color | 179 | : | people | 1 |

(Stimulus: 28. WHITE continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| clear | 19 | : | paper | 1 |
| colored | 2 | : | polish | 1 |
| cotton | 1 | : | pure | 1 |
| chalk | 5 | : | pillow | 1 |
| crayolas | 1 | : | race | 2 |
| cat | 1 | : | rusty | 1 |
| dress | 17 | : | red | 1 |
| dark | 14 | : | shirt | 1 |
| day | 1 | : | snow | 58 |
| egg | 1 | : | sheets | 1 |
| football | 1 | : | sheet | 1 |
| hat | 1 | : | silver | 1 |
| | | : | still | 1 |

| Stimulus: 29. BEAUTIFUL | | | | |
|---|---|---|---|---|
| black | 1 | : | lady | 1 |
| coat | 1 | : | lark | 1 |
| cer | 1 | : | lovely | 12 |
| dark | 1 | : | look | 1 |
| dresses | 7 | : | nice | 1 |
| flowers | 30 | : | pretty | 220 |
| girl | 110 | : | princess | 1 |
| good-looking | 71 | : | stork | 1 |
| gorgeous | 2 | : | sweat | 1 |
| hat | 10 | : | women | 65 |
| handsome | 31 | : | wonderful | 1 |
| kind | 1 | : | quiet | 1 |
| | | : | queen | 1 |

| Stimulus: 30. WINDOW | | | | |
|---|---|---|---|---|
| air | 9 | : | looking | 1 |
| a boy | 2 | : | let up | 1 |
| broken | 1 | : | light | 9 |
| break | 33 | : | open | 5 |
| call | 1 | : | raise | 1 |
| curtains | 3 | : | pane | 116 |
| door | 28 | : | sunshine | 1 |
| frame | 1 | : | shade | 1 |
| glass | 199 | : | trees | 1 |

(Stimulus: 30. WINDOW continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| glasses | 1 | : | up | 1 |
| house | 4 | : | winter | 1 |
| home | 1 | : | walk | 1 |
| look | 76 | : | wind | 1 |

| | | | Stimulus: 31. ROUGH | |
|---|---|---|---|---|
| alligator | 1 | : | legs | 1 |
| bumpy | 33 | : | man | 3 |
| bed | 77 | : | mean | 1 |
| bumping | 7 | : | play | 16 |
| bumps | 1 | : | road | 76 |
| boy | 1 | : | raise | 1 |
| big | 1 | : | rain | 1 |
| boys | 13 | : | ragged | 1 |
| bug | 1 | : | smooth | 15 |
| breath | 1 | : | softy | 1 |
| covering | 1 | : | soft | 1 |
| fight | 1 | : | strong | 1 |
| forks | 1 | : | tough | 78 |
| ground | 49 | : | tree | 1 |
| gruff | 1 | : | tender | 1 |
| herd | 92 | : | take | 1 |
| hills | 1 | : | unsmooth | 2 |
| harsh | 2 | : | unlevel | 2 |
| hurt | 1 | : | uneasy | 1 |
| house | 8 | : | us | 1 |
| jerky | 1 | : | wood | 1 |

| | | | Stimulus: 32. STORK | |
|---|---|---|---|---|
| animal | 1 | : | fox | 1 |
| big | 1 | : | going | 1 |
| bird | 245 | : | go | 1 |
| baby | 97 | : | Holland | 1 |
| babies | 16 | : | house | 1 |
| bill | 1 | : | high | 1 |
| corn | 2 | : | legs | 12 |
| cane | 1 | : | nest | 1 |
| chimney | 10 | : | rack | 1 |
| cloth | 1 | : | stop | 9 |

(Stimulus:  32. STORK continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| children | 1 | : | skies | 1 |
| fly | 76 | : | steepler | 1 |
| feet | 13 | : | tall | 2 |
| fast | 1 | : | white | 1 |

|  |  | Stimulus: | 33. FOOT |  |
|---|---|---|---|---|
| blood | 1 | : | people | 1 |
| bed | 1 | : | rug | 1 |
| bird | 1 | : | shoes | 64 |
| corn | 1 | : | sore | 25 |
| feet | 161 | : | skin | 1 |
| flesh | 9 | : | step | 1 |
| hurt | 1 | : | stocking | 12 |
| hand | 1 | : | sound | 1 |
| large | 11 | : | toes | 78 |
| little | 1 | : | web | 1 |
| leg | 2 | : | work | 1 |
| length | 1 | : | walking | 40 |
| meat | 1 | : | walk | 189 |

|  |  | Stimulus: | 34. SPIDER |  |
|---|---|---|---|---|
| ant | 1 | : | fierce | 1 |
| animal | 5 | : | holler | 1 |
| bite | 173 | : | insect | 48 |
| biting | 1 | : | legs | 12 |
| bug | 47 | : | long | 1 |
| black | 1 | : | look | 1 |
| blood | 1 | : | nest | 1 |
| blazes | 1 | : | poison | 13 |
| bad | 1 | : | swell | 1 |
| bed | 1 | : | sting | 1 |
| crawl | 2 | : | ugly | 1 |
| creature | 10 | : | web | 119 |
| dangerous | 42 | : | weave | 1 |
| fight | 1 | : | worm | 1 |
|  |  | : | walk | 1 |

(Table 2. continued)

| Stimulus: | 35. NEEDLE | : | | |
|-----------|-----------|---|-----------|-----------|
| Response Words | Frequency | : | Response Words | Frequency |
| clothes | 1 | : | sew | 208 |
| eye | 5 | : | sewing | 123 |
| go | 1 | : | short | 1 |
| nine | 1 | : | stick | 36 |
| pin | 33 | : | sharp | 7 |
| | | : | thread | 84 |

| Stimulus: | 36. RED | : | | |
|-----------|---------|---|-----------|-----------|
| apple | 2 | : | flame | 1 |
| baby | 1 | : | fire | 1 |
| blood | 4 | : | hat | 66 |
| black | 22 | : | hair | 1 |
| book | 1 | : | handkerchief | 1 |
| bright | 1 | : | man | 1 |
| brave | 1 | : | monkey | 3 |
| blue | 17 | : | orange | 1 |
| brown | 1 | : | paint | 1 |
| color | 227 | : | pretty | 3 |
| coat | 4 | : | paper | 2 |
| crimson | 1 | : | races | 1 |
| car | 1 | : | ribbon | 1 |
| dress | 117 | : | rug | 1 |
| dark | 1 | : | sacks | 1 |
| flag | 11 | : | thread | 1 |
| | | : | rose | 1 |

| Stimulus: | 37. SLEEP | : | | |
|-----------|-----------|---|-----------|-----------|
| awake | 33 | : | lazy | 2 |
| bed | 199 | : | night | 30 |
| babies | 1 | : | nice | 1 |
| baby | 1 | : | nap | 1 |
| child | 1 | : | preserve | 1 |
| dark | 1 | : | quiet | 1 |
| dream | 3 | : | resting | 58 |
| dead | 1 | : | rest | 140 |
| eyes | 2 | : | sound | 4 |
| eat | 1 | : | sleeping | 1 |
| floor | 1 | : | snoring | 1 |
| friend | 1 | : | slept | 1 |
| growth | 1 | : | snore | 1 |

(Stimulus: 37. SLEEP continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| health | 1 | : | still | 1 |
| ice | 1 | : | sweet | 1 |
| lay | 6 | : | tight | 1 |
|  |  | : | tired | 1 |

| | Stimulus: 38. ANGER | | | |
|---|---|---|---|---|
| angry | 22 | : | glad | 1 |
| age | 1 | : | hate | 1 |
| bad | 48 | : | jolly | 1 |
| boy | 1 | : | knees | 1 |
| boxers | 1 | : | mad | 268 |
| cold | 1 | : | mean | 32 |
| cross | 1 | : | rage | 1 |
| dog | 1 | : | rude | 1 |
| fright | 1 | : | sad | 1 |
| fight | 113 | : | silly | 1 |
|  |  | : | unhappy | 1 |

| | Stimulus: 39. CARPET | | | |
|---|---|---|---|---|
| broom | 1 | : | make | 1 |
| bed | 1 | : | money | 1 |
| car | 20 | : | man | 1 |
| color | 34 | : | nail | 11 |
| cloth | 1 | : | penny | 1 |
| earring | 1 | : | rug | 215 |
| down | 1 | : | roof | 1 |
| electric | 1 | : | run | 1 |
| floor | 107 | : | sweep | 55 |
| flower | 1 | : | seat | 1 |
| fish | 1 | : | took | 1 |
| fix | 1 | : | tacks | 1 |
| flying | 1 | : | tent | 1 |
| haul | 1 | : | walk | 22 |
| hard | 1 | : | wood | 1 |
| home | 7 | : | wires | 1 |
| household | 1 | : | work | 1 |
| incent | 1 | : | warm | 1 |

(Table 2. continued)

| | Stimulus: 40. GIRL | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| baby | 5 | : | mama | 1 |
| bear | 1 | : | male | 1 |
| bad | 1 | : | milk | 1 |
| boy | 156 | : | myself | 1 |
| child | 88 | : | maid | 1 |
| curls | 1 | : | nice | 24 |
| cute | 1 | : | person | 5 |
| dress | 33 | : | people | 1 |
| doll | 17 | : | play | 1 |
| daughter | 1 | : | pretty | 44 |
| friend | 1 | : | sisters | 1 |
| female | 33 | : | she | 1 |
| gal | 1 | : | someone | 1 |
| good | 12 | : | straight | 1 |
| human | 2 | : | star | 1 |
| handkerchief | 4 | : | smart | 1 |
| hair | 2 | : | sweet | 1 |
| like | 1 | : | shoe | 1 |
| ledies | 3 | : | woman | 48 |
| lonely | 1 | : | work | 1 |

| | Stimulus: 41. HIGH | | | |
|---|---|---|---|---|
| airplane | 1 | : | mountains | 132 |
| air | 8 | : | priced | 1 |
| Alps | 9 | : | quake | 1 |
| above | 1 | : | rats | 1 |
| breeze | 1 | : | reach | 1 |
| building | . | : | set-up | 1 |
| bird | 2 | : | swing | 1 |
| balls | 1 | : | stars | 1 |
| bees | 1 | : | school | 56 |
| climb | 1 | : | sky | 53 |
| fly | 1 | : | scared | 1 |
| far | 1 | : | skin | 1 |
| fall | 1 | : | tall | 84 |
| hill | 29 | : | tree | 1 |
| higher | 3 | : | up | 24 |
| in the air | 1 | : | world | 1 |
| jump | 4 | : | water | 1 |
| low | 70 | : | wind | 2 |

(Table 2. continued)

| Stimulus: 42. WORKING | | : | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| bad | 1 | : | men | 18 |
| busy | 4 | : | money | 52 |
| boy | 1 | : | mother | 1 |
| daddy | 1 | : | machine | 2 |
| dishes | 13 | : | N. R. A. | 1 |
| digging | 2 | : | occupation | 1 |
| farmers | 1 | : | playing | 7 |
| flowers | 1 | : | paying | 1 |
| garage | 1 | : | pick | 1 |
| garden | 1 | : | plowing | 1 |
| grief | 1 | : | people | 1 |
| ground | 83 | : | planting | 1 |
| hammer | 1 | : | show | 1 |
| hard | 165 | : | steal | 1 |
| hill | 1 | : | small | 1 |
| heart | 1 | : | scrub | 1 |
| job | 1 | : | tired | 1 |
| earn | 1 | : | teacher | 1 |
| living | 1 | : | tool | 1 |
| labor | 12 | : | task | 1 |
| men | 72 | : | work | 38 |
| | | : | yard | 1 |

| Stimulus: 43. SOUR | | : | | |
|---|---|---|---|---|
| apples | 1 | : | pickle | 183 |
| bad | 8 | : | smell | 1 |
| bitter | 37 | : | spoilt | 1 |
| belly | 1 | : | sweet | 43 |
| food | 4 | : | plums | 4 |
| good | 1 | : | stink | 1 |
| like | 1 | : | stale | 1 |
| lemon | 54 | : | sad | 1 |
| milk | 97 | : | stings | 1 |
| men | 1 | : | spoiled | 1 |
| no good | 6 | : | soured | 1 |
| onions | 3 | : | stingy | 1 |
| nasty | 1 | : | unsweet | 13 |
| | | : | vinegar | 33 |

(Table 2. continued)

| Stimulus: | 44. EARTH | | | |
|---|---|---|---|---|
| bed | 1 | : | heaven | 1 |
| ball | 1 | : | high | 1 |
| cities | 1 | : | happy | 1 |
| cold | 1 | : | light | 1 |
| dirt | 34 | : | live | 1 |
| down | 1 | : | land | 32 |
| dark | 106 | : | men | 1 |
| equator | 1 | : | people | 27 |
| flower | 1 | : | plants | 1 |
| fruit | 1 | : | quiet | 1 |
| ground | 180 | : | round | 38 |
| grow | 1 | : | rivers | 1 |
| grown | 1 | : | soft | 1 |
| garden | 1 | : | sky | 3 |
| herd | 122 | : | still | 1 |
| house | 1 | : | tree | 1 |
| | | : | world | 34 |

| Stimulus: | 45. GARDEN | | | |
|---|---|---|---|---|
| beans | 19 | : | ground | 1 |
| candy | 1 | : | hose | 1 |
| dirt | 1 | : | hoe | 1 |
| eating | 12 | : | plants | 138 |
| food | 8 | : | potatoes | 46 |
| flowers | 57 | : | planting | 1 |
| farm | 84 | : | rock | 1 |
| farmers | 1 | : | seeds | 2 |
| fruit | 1 | : | tomatoes | 1 |
| field | 1 | : | vegetables | 162 |
| gate | 5 | : | wheat | 6 |
| greens | 1 | : | working | 1 |
| grows | 41 | : | watch | 1 |

| Stimulus: | 46. SOLDIER | | | |
|---|---|---|---|---|
| army | 32 | : | march | 68 |
| arm | 1 | : | officer | 1 |
| brave | 19 | : | onward | 1 |
| camp | 1 | : | people | 1 |
| fighting | 63 | : | son | 1 |
| flying | 1 | : | scout | 1 |
| France | 1 | : | stiff | 1 |

(Stimulus: 46. SOLDIER continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| gun | 8 | : | shoot | 1 |
| head | 1 | : | straight | 1 |
| human | 1 | : | shooting | 1 |
| hero | 1 | : | veteran | 1 |
| men | 77 | : | war | 216 |

| | | Stimulus: | 47. CABBAGE | |
|---|---|---|---|---|
| age | 1 | : | ground | 1 |
| cornbread | 1 | : | head | 1 |
| cook | 1 | : | halt | 1 |
| carrot | 1 | : | hunting | 1 |
| dinner | 1 | : | kettle | 1 |
| eat | 86 | : | lettuce | 322 |
| eating | 155 | : | leaves | 1 |
| fat | 2 | : | meat | 1 |
| food | 5 | : | plant | 4 |
| garden | 5 | : | rabbit | 1 |
| green | 1 | : | greens | 34 |
| good | 1 | : | rock | 1 |
| grow | 1 | : | spinach | 19 |
| vegetables | 39 | : | worms | 5 |

| | | Stimulus: | 48. HARD | |
|---|---|---|---|---|
| brick | 28 | : | rock | 181 |
| bread | 2 | : | rough | 2 |
| ball | 1 | : | stone | 8 |
| break | 2 | : | soft | 154 |
| book | 1 | : | sidewalk | 1 |
| coal | 1 | : | study | 1 |
| candy | 15 | : | strong | 1 |
| cake | 1 | : | seat | 1 |
| chain | 1 | : | softy | 2 |
| disk | 1 | : | stick | 1 |
| eight | 1 | : | sod | 1 |
| fall | 1 | : | tough | 1 |
| food | 1 | : | tree | 1 |
| froze | 1 | : | unsoft | 1 |
| ground | 9 | : | uncomfortable | 1 |

(Stimulus: 48. HARD continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| heavy | 12 | : | work | 11 |
| huge | 1 | : | write | 1 |
| paper | 1 | : | wood | 8 |
| | | : | worked | 1 |

| | Stimulus: | 49. EAGLE | | |
|---|---|---|---|---|
| animal | 29 | : | flying | 6 |
| airplane | 1 | : | feather | 81 |
| ate | 1 | : | large | 1 |
| bird | 149 | : | mean | 2 |
| big | 8 | : | mountain | 1 |
| bride | 1 | : | nest | 1 |
| brown | 1 | : | object | 1 |
| beasty | 1 | : | paper | 43 |
| carries | 1 | : | run | 1 |
| crow | 1 | : | sleep | 1 |
| equal | 1 | : | sparrow | 1 |
| fly | 163 | : | time | 1 |
| | | : | wings | 1 |

| | Stimulus: | 50. STOMACH | | |
|---|---|---|---|---|
| abdomen | 2 | : | fell | 1 |
| ache | 26 | : | fill | 1 |
| big | 1 | : | fall | 1 |
| belly | 6 | : | guts | 1 |
| body | 97 | : | hurt | 34 |
| bad | 1 | : | heat | 1 |
| candy | 1 | : | hungry | 1 |
| corn | 1 | : | heart | 2 |
| digest | 1 | : | intestine | 16 |
| eat | 170 | : | navel | 1 |
| empty | 20 | : | people | 1 |
| eating | 60 | : | pain | 1 |
| food | 30 | : | starch | 1 |
| full | 18 | : | summer | 1 |
| front | 1 | : | soft | 1 |

(Table 2. continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| | | Stimulus: 51. STEM | | |
| apple | 88 | : | long | 2 |
| air | 1 | : | life | 1 |
| branch | 1 | : | little | 1 |
| berry | 1 | : | match | 27 |
| branches | 1 | : | nobs | 1 |
| breed | 1 | : | pair | 1 |
| cotton | 28 | : | pipe | 1 |
| cabbage | 1 | : | plent | 1 |
| dead | 1 | : | rose | 1 |
| fruit | 5 | : | root | 1 |
| flower | 196 | : | switch | 1 |
| green | 5 | : | strong | 1 |
| grow | 1 | : | stick | 9 |
| hat | 1 | : | tree | 4 |
| leef | 53 | : | tomatoes | 28 |
| leaves | 86 | : | talk | 1 |
| | | : | tall | 1 |

| | | Stimulus: 52. LAMP | | |
|---|---|---|---|---|
| air | 1 | : | light | 308 |
| burn | 19 | : | match | 1 |
| color | 1 | : | oil | 41 |
| coel oil | 1 | : | see | 84 |
| fire | 32 | : | water | 1 |
| | | : | white | 1 |

| | | Stimulus: 53. DREAM | | |
|---|---|---|---|---|
| Aladdin | 1 | : | night | 90 |
| bed | 6 | : | nature | 1 |
| bad | 3 | : | pillow | 1 |
| beautiful | 11 | : | poses | 1 |
| brick | 1 | : | picture | 26 |
| color | 1 | : | person | 1 |
| clear | 1 | : | pretty | 1 |
| demand | 1 | : | sleep | 279 |
| dream | 1 | : | story | 19 |
| eest | 1 | : | see | 2 |
| fairy | 1 | : | stories | 1 |

(Stimulus:  53.  DREAM continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| good | 4 | : | something | 1 |
| girl | 1 | : | true | 51 |
| happiness | 1 | : | trouble | 1 |
| imagination | 1 | : | thing | 1 |
| light | 1 | : | think | 1 |
|  |  | : | tree | 1 |

| Stimulus:  54.  YELLOW | | | | |
|---|---|---|---|---|
| black | 1 | : | grass | 1 |
| banana | 28 | : | green | 1 |
| blue | 2 | : | houses | 1 |
| book | 7 | : | house | 1 |
| bright | 2 | : | lemon | 113 |
| ball | 1 | : | light | 1 |
| color | 197 | : | moon | 11 |
| Chinese | 1 | : | orange | 40 |
| car | 1 | : | pencil | 1 |
| cloth | 1 | : | pillow | 1 |
| corn | 1 | : | purple | 1 |
| dress | 67 | : | sweater | 1 |
| egg | 7 | : | sun | 1 |
| Eskimo | 1 | : | tulip | 1 |
| flower | 2 | : | top | 1 |
| fruit | 1 | : | white | 1 |
| golden | 1 | : | wheat | 1 |

| Stimulus:  55.  BREAD | | | | |
|---|---|---|---|---|
| bond | 1 | : | health | 1 |
| brown | 1 | : | holiday | 1 |
| butter | 1 | : | jelly | 1 |
| crust | 1 | : | meat | 1 |
| corn | 40 | : | paper | 46 |
| eat | 195 | : | sandwich | 1 |
| eating | 5 | : | milk | 2 |
| food | 30 | : | soft | 1 |
| flour | 112 | : | soup | 1 |
| growth | 1 | : | starch | 1 |
| good | 72 | : | trade | 1 |

(Table 2. continued)

| Stimulus: 56. FLAG | | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| American | 244 | : | nation | 2 |
| air | 1 | : | person | 1 |
| blue | 1 | : | pole | 3 |
| country | 44 | : | red | 36 |
| Christopher | 1 | : | raise | 1 |
| cloth | 2 | : | rag | 1 |
| color | 22 | : | rage | 1 |
| freedom | 1 | : | stars and stripes | 56 |
| flying | 1 | : | school | 1 |
| fun | 1 | : | salute | 12 |
| flower | 1 | : | stripe | 2 |
| hang | 1 | : | thirteen | 1 |
| honor | 1 | : | United States | 5 |
| holiday | 1 | : | war | 14 |
| justice | 1 | : | white | 1 |

| Stimulus: 57. BOY | | | | |
|---|---|---|---|---|
| body | 1 | : | hero | 1 |
| bad | 31 | : | hunting | 1 |
| baby | 5 | : | Jesus | 1 |
| big | 1 | : | kid | 1 |
| box | 1 | : | male | 88 |
| basketball | 105 | : | man | 25 |
| burned | 1 | : | mischief | 1 |
| looks | 1 | : | marbles | 1 |
| child | 7 | : | nut | 1 |
| clothes | 1 | : | pants | 5 |
| cook | 1 | : | playmate | 10 |
| candy | 1 | : | person | 6 |
| cute | 1 | : | play | 2 |
| electric | 1 | : | rough | 1 |
| eggs | 1 | : | runt | 1 |
| female | 1 | : | run | 2 |
| good | 1 | : | scout | 1 |
| girl | 144 | : | strong | 1 |
| games | 1 | : | suit | 1 |
| going | 2 | : | shirt | 1 |
| human | 24 | : | short | 1 |
| handsome | 3 | : | weak | 1 |
| | | : | white | 1 |

(Table 2. continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| | Stimulus: | 58. LIGHT | | |
| air | 1 | : | morning | 1 |
| bright | 61 | : | match | 1 |
| bulb | 6 | : | room | 1 |
| burn | 1 | : | reading | 1 |
| cotton | 1 | : | read | 1 |
| dark | 95 | : | sight | 1 |
| day | 17 | : | seeing | 10 |
| drink | 5 | : | soft | 1 |
| dim | 1 | : | silly | 1 |
| electricity | 22 | : | sky | 1 |
| electric | 43 | : | shows | 1 |
| fruit | 1 | : | sun | 1 |
| good | 1 | : | see | 1 |
| him | 1 | : | use | 1 |
| house | 1 | : | up | 2 |
| lamp | 195 | : | whip | 1 |
| lofty | 1 | : | white | 18 |
| living | 1 | : | | |

| | Stimulus: | 59. LAUGH | | |
|---|---|---|---|---|
| animals | 1 | : | happy | 109 |
| angry | 1 | : | hard | 6 |
| boy | 1 | : | holler | 1 |
| cake | 1 | : | joke | 1 |
| children | 1 | : | jolly | 11 |
| clothes | 1 | : | joy | 1 |
| cheer | 1 | : | last | 1 |
| electricity | 1 | : | loud | 4 |
| fun | 12 | : | laughing | 47 |
| funny | 177 | : | long | 1 |
| good | 1 | : | map | 1 |
| gladness | 1 | : | monkey | 1 |
| girl | 1 | : | noises | 1 |
| grin | 18 | : | side | 1 |
| giggle | 1 | : | smile | 79 |
| him | 1 | : | smiling | 2 |
| house | 1 | : | tickle | 11 |
| | | : | write | 1 |

(Table 2. continued)

|  | Stimulus: | 60. | BIBLE |  |
| --- | --- | --- | --- | --- |
| Response Words | Frequency | : | Response Words | Frequency |
| book | 30 | : | Lord | 7 |
| church | 36 | : | preacher | 1 |
| Christ | 3 | : | preach | 1 |
| clean | 1 | : | read | 115 |
| Christian | 2 | : | reality | 1 |
| God | 193 | : | stories | 1 |
| good | 1 | : | scripture | 2 |
| holy | 81 | : | truth | 1 |
| honor | 1 | : | true | 1 |
| Jesus | 9 | : | wash | 1 |
| lesson | 1 | : | words | 1 |
|  |  | : | worship | 10 |

|  | Stimulus: | 61. | MILK |  |
| --- | --- | --- | --- | --- |
| bread | 1 | : | goat | 1 |
| baby | 30 | : | healthful | 12 |
| babies | 3 | : | horses | 1 |
| cow | 115 | : | health | 5 |
| drink | 279 | : | man | 1 |
| drinking | 10 | : | minerals | 1 |
| energy | 1 | : | maid | 1 |
| fast | 1 | : | rest | 1 |
| fat | 1 | : | water | 1 |
| food | 1 | : | vitamins | 1 |
| good | 1 | : | water | 2 |
| go |  | : | white | 20 |

|  | Stimulus: | 62. | SHEEP |  |
| --- | --- | --- | --- | --- |
| animals | 97 | : | fur | 53 |
| boy | 1 | : | goat | 2 |
| bed | 1 | : | herd | 1 |
| bleat | 1 | : | hungry | 1 |
| coat | 2 | : | horse | 1 |
| cattle | 14 | : | lamb | 7 |
| clothes | 1 | : | meat | 1 |
| cover | 1 | : | paper | 1 |
| flock | 1 | : | road | 1 |
|  |  | : | wool | 312 |

(Table 2. continued)

| Stimulus: 63. BATH | | | | |
|--------|--------|---|--------|--------|
| Response Words | Frequency | : | Response Words | Frequency |
| body | 1 | : | need | 1 |
| clean | 156 | : | soap | 1 |
| clothes | 1 | : | smell | 1 |
| dirty | 13 | : | sponge | 4 |
| eat | 1 | : | stink | 1 |
| fire | 1 | : | taking | 1 |
| good | 23 | : | tub | 46 |
| house | 1 | : | wash | 80 |
| hair | 1 | : | water | 166 |
| | | : | understood | 1 |

| Stimulus: 64. COTTAGE | | | | |
|--------|--------|---|--------|--------|
| cheap | 1 | : | little | 2 |
| cheese | 10 | : | logs | 1 |
| cabin | 1 | : | man | 1 |
| fast | 1 | : | pattern | 1 |
| gun | 1 | : | rich | 1 |
| house | 200 | : | school | 25 |
| hut | 16 | : | steps | 1 |
| home | 127 | : | short | 1 |
| living | 1 | : | supper | 1 |
| live | 6 | : | village | 91 |

| Stimulus: 65. SWIFT | | | | |
|--------|--------|---|--------|--------|
| away | 1 | : | kick | 1 |
| arrow | 13 | : | motor | 1 |
| ball | 17 | : | ocean | 1 |
| balls | 1 | : | quick | 80 |
| boy | 10 | : | running | 50 |
| card | 1 | : | run | 15 |
| church | 1 | : | strong | 1 |
| deer | 1 | : | slow | 2 |
| fast | 283 | : | seal | 1 |
| fighting | 2 | : | trick | 1 |
| food | 1 | : | train | 1 |
| going | 1 | : | throw | 1 |
| hit | 1 | : | water | 10 |
| horses | 1 | : | wind | 1 |

(Table 2. continued)

|  | Stimulus: | 66. | BLUE |  |
| Response Words | Frequency | : | Response Words | Frequency |
| --- | --- | --- | --- | --- |
| book | 1 | : | lonely | 1 |
| cap | 1 | : | moon | 10 |
| color | 226 | : | pants | 3 |
| dress | 10 | : | paper | 1 |
| dark | 10 | : | rid | 1 |
| dresses | 5 | : | suit | 28 |
| flew | 1 | : | sky | 130 |
| flowers | 55 | : | shirt | 1 |
| flag | 1 | : | true | 1 |
| fast | 1 | : | tall | 1 |
| head | 1 | : | water | 8 |
| horn | 2 | : | white | 1 |
| hat | 1 | : | wind | 1 |

|  | Stimulus: | 67. | HUNGRY |  |
| --- | --- | --- | --- | --- |
| ache | 1 | : | good | 1 |
| buy | 1 | : | man | 1 |
| drink | 1 | : | pig | 1 |
| dinner | 1 | : | ready | 1 |
| eating | 128 | : | starving | 8 |
| eater | 1 | : | starved | 91 |
| eat | 186 | : | table | 20 |
| empty | 6 | : | tired | 1 |
| food | 45 | : | weak | 1 |
| full | 1 | : | wanting | 1 |
| girl | 1 | : | pill | 1 |

|  | Stimulus: | 68. | PRIEST |  |
| --- | --- | --- | --- | --- |
| amen | 1 | : | king | 106 |
| African | 1 | : | live | 1 |
| Bible | 10 | : | leader | 5 |
| baby | 1 | : | minister | 121 |
| Catholic | 35 | : | man | 1 |
| church | 185 | : | people | 1 |
| drink | 1 | : | pants | 1 |
| deacon | 1 | : | preaching | 5 |
| dress | 1 | : | pens | 1 |
| father | 10 | : | press | 1 |

(Stimulus: 68. PRIEST continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| good | 1 | : | prince | 1 |
| God | 1 | : | ruler | 1 |
| governor | 1 | : | sea | 1 |
| hat | 1 | : | stand | 1 |
| high | 2 | : | you | 1 |

|  |  | Stimulus: | 69. OCEAN |  |
|---|---|---|---|---|
| Atlantic | 42 | : | pal | 1 |
| body | 2 | : | Pacific | 32 |
| big | 1 | : | river | 37 |
| boats | 1 | : | ships | 48 |
| deep | 2 | : | sea | 63 |
| fish | 4 | : | white | 1 |
| hot | 2 | : | weather | 1 |
| wide | 27 | : | water | 233 |
|  |  | : | lake | 3 |

|  |  | Stimulus: | 70. HEAD |  |
|---|---|---|---|---|
| ache | 1 | : | hurt | 1 |
| ball | 1 | : | hat | 1 |
| bed | 1 | : | hear | 1 |
| brain | 96 | : | hit | 1 |
| big | 2 | : | itch | 1 |
| body | 91 | : | long | 31 |
| drank | 1 | : | neck | 1 |
| dead | 5 | : | scare | 1 |
| eye | 1 | : | scalp | 1 |
| ears | 1 | : | swell | 24 |
| hair | 180 | : | sense | 49 |
| face | 3 | : | talk | 1 |
| hands | 1 | : | think | 1 |
|  |  | : | warm | 1 |

|  |  | Stimulus: | 71. STOVE |  |
|---|---|---|---|---|
| burn | 1 | : | hot | 43 |
| big | 1 | : | heat | 50 |
| cooking | 87 | : | heating | 1 |
| coal | 12 | : | little | 1 |

(Stimulus: 71. STOVE continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| cook | 55 | : | nasty | 1 |
| food | 1 | : | round | 5 |
| fire | 237 | : | short | 1 |
| gas | 1 | : | store | 1 |
| | | : | warm | 2 |

| | | Stimulus: | 72. LONG | |
|---|---|---|---|---|
| big | 1 | : | playing | 1 |
| bed | 1 | : | pencil | 1 |
| boys | 1 | : | rope | 3 |
| dress | 38 | : | snake | 1 |
| distance | 1 | : | state | 1 |
| day | 1 | : | school | 1 |
| dead | 1 | : | stem | 24 |
| foot | 1 | : | string | 1 |
| far | 1 | : | scared | 1 |
| hair | 40 | : | short | 136 |
| head | 1 | : | straight | 1 |
| knee | 1 | : | sort | 1 |
| lanky | 2 | : | tall | 180 |
| land | 1 | : | time | 1 |
| leg | 1 | : | tongue | 1 |
| large | 47 | : | wide | 1 |
| miles | 1 | : | wood | 1 |
| narrow | 1 | : | wire | 1 |
| | | : | years | 1 |

| | | Stimulus: | 73. GHOST | |
|---|---|---|---|---|
| afraid | 15 | : | house | 1 |
| bad | 1 | : | haunt | 5 |
| black | 5 | : | man | 1 |
| bones | 1 | : | person | 1 |
| bad man | 1 | : | run | 2 |
| dead people | 1 | : | seat | 1 |
| dog | 1 | : | seem | 1 |
| drunk | 1 | : | story | 1 |
| frightened | 30 | : | speak | 8 |
| foot | 1 | : | spook | 97 |
| give | 1 | : | scared | 159 |

(Stimulus: 73. GHOST continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| go | 1 | : | sheet | 1 |
| God | 1 | : | spirit | 123 |
| graveyard | 1 | : | tell | 1 |
| | | : | white | 27 |

| Stimulus: 74. WHISKEY | | | | |
|---|---|---|---|---|
| alcohol | 63 | : | drink | 179 |
| bells | 1 | : | drinking | 67 |
| Blatz | 1 | : | fire | 1 |
| beer | 5 | : | liquor | 18 |
| bed | 2 | : | man | 1 |
| cow | 1 | : | sound | 1 |
| cargo | 1 | : | sick | 1 |
| drank | 47 | : | strong | 1 |
| drunk | 85 | : | wine | 26 |

| Stimulus: 75. CHILD | | | | |
|---|---|---|---|---|
| baby | 165 | : | little | 50 |
| boy | 73 | : | Mary | 1 |
| children | 82 | : | mother | 1 |
| cute | 1 | : | one | 1 |
| enemy | 1 | : | pal | 1 |
| girl | 62 | : | person | 1 |
| growing | 1 | : | sister | 1 |
| go | 1 | : | sick | 1 |
| human | 23 | : | small | 1 |
| kid | 22 | : | toys | 1 |
| lady | 1 | : | water | 1 |
| | | : | young | 1 |

| Stimulus: 76. FRIEND | | | | |
|---|---|---|---|---|
| best | 1 | : | live | 1 |
| block | 1 | : | mate | 7 |
| buddy | 6 | : | my | 1 |
| boy | 12 | : | neighbor | 66 |
| enemy | 2 | : | parents | 1 |
| enemies | 21 | : | partner | 1 |

(Stimulus: 76. FRIEND continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| good | 176 | : | playmate | 99 |
| girl | 30 | : | pal | 60 |
| Helen | 1 | : | piece | 1 |
| hear | 1 | : | somebody | 1 |
| kind | 1 | : | taking | 1 |
| like | 5 | : | thank | 1 |
| love | 2 | : | warm | 1 |

| Stimulus: | 77. HAMMER | | | |
|---|---|---|---|---|
| ache | 1 | : | hang | 1 |
| beat | 26 | : | hit | 112 |
| break | 1 | : | iron | 22 |
| bang | 1 | : | large | 1 |
| box | 1 | : | nailing | .68 |
| drove | 1 | : | nail | 221 |
| finger | 1 | : | pound | 1 |
| good | 1 | : | steel | 1 |
| hatchet | 8 | : | tools | 25 |
| house | 1 | : | use | 1 |
| | | : | wood | 5 |

| Stimulus: | 78. THIRSTY | | | |
|---|---|---|---|---|
| animals | 17 | : | dry | 57 |
| bread | 1 | : | men | 1 |
| drank | 1 | : | milk | 2 |
| drink | 180 | : | mouth | 3 |
| drinking | 1 | : | sick | 1 |
| | | : | water | 237 |

| Stimulus: | 79. CITY | | | |
|---|---|---|---|---|
| beal | 1 | : | live | 2 |
| building | 18 | : | New York | 24 |
| capital | 1 | : | Oklahoma | 40 |
| country | 1 | : | place | 2 |
| chair | 3 | : | people | 25 |
| counted | 1 | : | state | 138 |
| drum | 1 | : | stork | 1 |

(Stimulus: 79. CITY continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| going | 1 | : | stair | 1 |
| gal | 1 | : | show | 1 |
| heap | 1 | : | seat | 1 |
| houses | 1 | : | scenery | 1 |
| happy | 1 | : | tax | 1 |
| Kansas | 15 | : | town | 95 |
| land | 1 | : | travel | 1 |
| large | 1 | : | Wichita | 116 |

| | | Stimulus: | 80. SQUARE | |
|---|---|---|---|---|
| board | 1 | : | material | 1 |
| block | 206 | : | miles | 52 |
| box | 136 | : | money | 1 |
| butter | 1 | : | noise | 1 |
| corners | 1 | : | odd | 1 |
| chocolate | 1 | : | paper | 1 |
| dollar | 1 | : | round | 71 |
| even | 1 | : | shape | 28 |
| fat | 1 | : | sleep | 1 |
| foot | 1 | : | stick | 1 |
| flat | 1 | : | short | 1 |
| fold | 1 | : | steel | 1 |
| look | 1 | : | table | 1 |
| long | 5 | : | triangle | 1 |

| | | Stimulus: | 81. BUTTER | |
|---|---|---|---|---|
| bread | 164 | : | grease | 4 |
| big | 1 | : | good | 1 |
| cheese | 1 | : | help | 1 |
| churn | 1 | : | lard | 1 |
| cow | 73 | : | milk | 56 |
| cut | 1 | : | soft | 3 |
| dark | 1 | : | salt | 1 |
| eat | 189 | : | spread | 1 |
| eating | 1 | : | stealing | 1 |
| fat | 54 | : | sick | 1 |
| | | : | yellow | 35 |

(Table 2. continued)

| Stimulus: | | 82. DOCTOR | |
|---|---|---|---|
| apple | 1 : | hurt | 1 |
| accident | 1 : | ill | 52 |
| angry | 1 : | medicine | 120 |
| baby | 1 : | man | 37 |
| cure | 1 : | nurse | 49 |
| dentist | 1 : | nose | 1 |
| first aid | 1 : | onion | 1 |
| heal | 1 : | sick | 221 |
| healer | 1 : | sickness | 4 |
| hospital | 1 : | set | 1 |
| help | 1 : | soup | 1 |
| happy | 1 : | train | 1 |

| Stimulus: | | 83. LOUD | |
|---|---|---|---|
| boy | 1 : | quiet | 1 |
| bad | 1 : | silent | 1 |
| cry | 5 : | shrill | 42 |
| fire wagon | 1 : | sound | 11 |
| guard | 1 : | soft | 6 |
| hear | 1 : | scream | 28 |
| holler | 67 : | sort | 1 |
| harm | 25 : | speaking | 1 |
| happy | 1 : | singing | 1 |
| laughing | 1 : | talking | 1 |
| mouth | 3 : | talk | 163 |
| noise | 194 : | voice | 5 |
| noisy | 1 : | word | 1 |

| Stimulus: | | 84. THIEF | |
|---|---|---|---|
| aim | 1 : | night | 1 |
| animal | 1 : | robber | 1 |
| Dillinger | 1 : | steal | 146 |
| fat | 1 : | sleep | 1 |
| hand | 1 : | stealing | 130 |
| man | 1 : | stolen | 1 |
| | : | take | 112 |

(Table 2. continued)

| | Stimulus: 85. LION | | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| animals | 191 | : | growl | 1 |
| beast | 137 | : | groan | 1 |
| bad | 6 | : | jungle | 15 |
| big | 1 | : | king | 5 |
| bite | 18 | : | lick | 1 |
| cattle | 1 | : | master | 1 |
| claws | 1 | : | noise | 1 |
| circus | 63 | : | pork | 1 |
| cub | 1 | : | roar | 1 |
| denger | 1 | : | roaring | 1 |
| den | 1 | : | rest | 1 |
| dangerous | 16 | : | running | 1 |
| died | 1 | : | sheep | 1 |
| eat | 1 | : | tall | 1 |
| forest | 1 | : | tiger | 1 |
| fierce | 2 | : | vicious | 1 |
| | | : | Washington | 1 |

| | Stimulus: 86. JOY | | | |
|---|---|---|---|---|
| chew | 1 | : | likes | 6 |
| cheer | 1 | : | music | 1 |
| enjoying | 1 | : | playful | 1 |
| fun | 64 | : | play | 19 |
| funny | 27 | : | playing | 102 |
| friendship | 1 | : | pleasure | 1 |
| good | 22 | : | peace | 1 |
| gold | 1 | : | sad | 1 |
| glad | 82 | : | show | 1 |
| happiness | 18 | : | sorrow | 1 |
| happy | 292 | : | still | 1 |
| | | : | sweet | 1 |

| | Stimulus: 87. BED | | | |
|---|---|---|---|---|
| big | 1 | : | sleep | 232 |
| bat | 1 | : | sleeping | 120 |
| cover | 25 | : | snore | 1 |
| crying | 1 | : | sweet | 1 |
| hard | 83 | : | sleepy | 1 |

(Stimulus: 87. RED continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| night | 1 | : | soft | 20 |
|  |  | : | toy | 1 |

| | Stimulus: | 88. HEAVY | | |
|---|---|---|---|---|
| brick | 1 | : | lift | 5 |
| big | 15 | ! | large | 15 |
| bat | 1 | : | man | 1 |
| bed | 1 | : | move | 1 |
| carry | 10 | : | mountain | 1 |
| coat | 1 | : | pounds | 1 |
| carrying | 1 | : | road | 15 |
| drop | 1 | : | rock | 32 |
| gold | 1 | : | raise | 1 |
| hand | 30 | : | stone | 2 |
| iron | 38 | : | truck | 2 |
| lead | 60 | : | tight | 2 |
| load | 116 | : | trunk | 1 |
| log | 1 | : | weight | 144 |

| | Stimulus: | 89. TOBACCO | | |
|---|---|---|---|---|
| cigarettes | 70 | : | juice | 1 |
| chews | 3 | : | pipe | 30 |
| cigar | 25 | : | plant | 1 |
| child | 1 | : | raise | 1 |
| cut | 1 | : | rules | 1 |
| eat | 65 | : | smoke | 225 |
| grow | 1 | : | smooth | 1 |
| grain | 1 | : | smoking | 75 |
|  |  | : | weed | 1 |

| | Stimulus: | 90. BABY | | |
|---|---|---|---|---|
| born | 3 | : | infant | 1 |
| boy | 80 | : | innocent | 1 |
| bottle | 30 | : | little | 32 |
| child | 162 | : | married | 1 |
| cry | 1 | : | mouse | 1 |
| eat | 1 | : | Christ | 1 |
| cute | 1 | : | moon | 1 |

(Stimulus: 90. BABY continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| cradle | 1 | : | person | 1 |
| fishing | 1 | : | stork | 89 |
| girl | 63 | : | small | 12 |
| garden | 1 | : | sister | 1 |
| silence | 1 | : | woman | 1 |

|  |  | Stimulus: | 91. MOON |  |
|---|---|---|---|---|
| blue | 1 | : | moonlight | 1 |
| bright | 97 | : | night | 25 |
| bell | 1 | : | round | 5 |
| clouds | 1 | : | romance | 1 |
| cheese | 1 | : | shine | 118 |
| cabbage | 1 | : | stars | 1 |
| dark | 27 | : | sun | 15 |
| light | 178 | : | sky | 15 |
| lady | 1 | : | white | 1 |
|  |  | : | yellow | 1 |

|  |  | Stimulus: | 92. SCISSORS |  |
|---|---|---|---|---|
| cut | 284 | : | color | 1 |
| cutting | 162 | : | knife | 1 |
| cutters | 37 | : | knives | 13 |
|  |  | : | used | 1 |

|  |  | Stimulus: | 93. QUIET |  |
|---|---|---|---|---|
| alone | 1 | : | nice | 3 |
| boy | 2 | : | noise | 25 |
| behave | 1 | : | peace | 51 |
| children | 1 | : | Quaker | 1 |
| forest | 11 | : | room | 58 |
| good | 1 | : | still | 183 |
| give | 1 | : | silence | 80 |
| hospital | 1 | : | soft | 1 |
| hair | 1 | : | sleep | 13 |
| lay | 1 | : | sound | 25 |
| lowly | 1 | : | soundless | 1 |
| leaves | 1 | : | stage | 1 |

(Stimulus: 93. QUIET continued)

| Response Words | Frequency | : | Response Words | Frequency |
|---|---|---|---|---|
| loud | 25 | : | slow | 1 |
| lonesome | 1 | : | talking | 3 |
| mouse | 1 | : | talk | 1 |
| noisily | 1 | : | up | 1 |
| nurse | 1 | : | work | 1 |
|  |  | : | walk | 1 |

| | Stimulus: 94. GREEN | | | |
|---|---|---|---|---|
| bean | 1 | : | garden | 5 |
| blue | 1 | : | live | 1 |
| black | 1 | : | leaves | 37 |
| color | 111 | : | mustard | 59 |
| curtain | 1 | : | paint | 1 |
| dress | 55 | : | stew | 1 |
| dark | 1 | : | tree | 1 |
| eat | 2 | : | thing | 1 |
| grass | 223 | : | werm | 1 |

| | Stimulus: 95. SALT | | | |
|---|---|---|---|---|
| apple | 2 | : | mined | 1 |
| bread | 2 | : | medicine | 1 |
| cooking | 51 | : | peanuts | 1 |
| dry | 1 | : | piece | 1 |
| eating | 4 | : | pepper | 4 |
| eat | 72 | : | queen | 1 |
| food | 159 | : | salty | 1 |
| fish | 1 | : | season | 2 |
| flowing | 1 | : | sea | 1 |
| fine | 1 | : | sugar | 16 |
| grain | 1 | : | sour | 1 |
| ham | 1 | : | sick | 1 |
| ice cream | 1 | : | soup | 1 |
| salt | 1 | : | sweet | 1 |
| jello | 1 | : | seasoning | 87 |
| lard | 1 | : | table | 5 |
| lump | 1 | : | taste | 5 |
| mining | 1 | : | use | 1 |
| meat | 121 | : | water | 2 |
|  |  | : | white | 5 |

(Table 2.  continued)

| Stimulus: | 96. STREET | : | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| Broadway | 1 | : | stand | 1 |
| cers | 204 | : | narrow | 13 |
| cement | 10 | : | sidewalk | 78 |
| cross | 81 | : | place | 1 |
| Cleveland | 1 | : | walk | 1 |
| drive | 1 | : | house | 1 |
| hurt | 1 | : | pavement | 6 |
| Nulen | 1 | : | walking | 1 |
| Ohio | 1 | : | way | 1 |
| wide | 21 | : | Wabash | 1 |
| walks | 1 | : | flower | 1 |
| | | : | milk | 1 |

| Stimulus: | 97. KING | : | | |
|---|---|---|---|---|
| big | 1 | : | money | 44 |
| boss | 1 | : | prince | 1 |
| country | 1 | : | princess | 1 |
| crown | 1 | : | palace | 49 |
| chief | 1 | : | queen | 99 |
| excited | 1 | : | rich | 2 |
| frame | 1 | : | ruler | 211 |
| government | 3 | : | soap | 1 |
| happy | 1 | : | throne | 65 |
| man | 4 | : | walk | 11 |
| master | 1 | : | woman | 1 |

| Stimulus: | 98. CHEESE | : | | |
|---|---|---|---|---|
| boy | 1 | : | good | 1 |
| cows | 5 | : | girl | 1 |
| crackers | 2 | : | hog | 1 |
| chicken | 1 | : | Holland | 1 |
| cottage | 15 | : | hungry | 1 |
| churn | 1 | : | meat | 1 |
| chew | 1 | : | mouse | 28 |
| Dutch | 1 | : | milk | 64 |
| eat | 201 | : | mice | 4 |
| eating | 1 | : | play | 1 |
| food | 11 | : | rat | 88 |
| | | : | yellow | 68 |

(Table 2. concluded)

| Stimulus: 99. BLOSSOM | | : | | |
|---|---|---|---|---|
| Response Words | Frequency | : | Response Words | Frequency |
| blossom | 1 | : | hawthorne | 1 |
| black | 19 | : | ink | 1 |
| bloom | 64 | : | June | 8 |
| blood | 1 | : | mean | 1 |
| flowers | 283 | : | spring | 1 |
| honey | 1 | : | tree | 119 |

| Stimulus: 100. AFRAID | | : | | |
|---|---|---|---|---|
| be | 1 | : | lain | 1 |
| brave | 2 | : | night | 22 |
| cry | 1 | : | running | 1 |
| dog | 1 | : | run | 1 |
| drake | 1 | : | robber | 1 |
| fear | 1 | : | old house | 1 |
| frightened | 129 | : | stay | 1 |
| go | 1 | : | scarey | 1 |
| hair | 1 | : | scared | 276 |
| hear | 20 | : | thing | 1 |
| hurt | 9 | : | water | 1 |
| | | : | whipping | 24 |

## Association Types

Everyone who does practical work in association finds
the classification of associations according to form or
type the hardest and most tedious part. The writer does
not wish to minimize the uncertainty of any classification
of associations, particularly when unaided by introspection.
As to the aid to be obtained from introspection, it may be
questioned if children's introspection would be reliable
for use in the classification of associations according to
their types. Notwithstanding the difficulties, the writer
believes that the careful classifications of associations
that have been made for both white and colored children
are of great value. In spite of the possible errors, the
comparison of these classifications brings out in an unques-
tionable manner a number of striking and important dif-
ferences in the mental processes of white and colored
children.

It did not seem worthwhile to make frequency tables
for all association types. Several of Woodrow and Lowell's
classifications had little value for comparison.

In selecting the classifications, the writer has en-
deavored to get headings which would serve to show the
chief similarities and dissimilarities between the associa-
tions of white and colored children. The following types

were selected from Woodrow and Lowell's study: (1) contrast, (2) similarity, (3) contiguity, (4) adjective-noun, (5) noun-adjective, (6) part-whole, (7) whole-part, (8) verb, (9) cause-effect, (10) verb-object. The meanings of most of these types is sufficiently clear, particularly since they are fully illustrated in Table 3.

Table 3.  Classification of associations:  a comparison
of white adults, white children, and colored
children

| I. Contrast | | | | |
|---|---|---|---|---|
| Stimulus Word | Response Word | White Adults | White Children | *Colored Children |
| 2.  dark | light | 427 | 38 | 275 |
| 4.  sickness | health | 142 | 6 | 1 |
| 5.  men | woman (en) | 394 | 25 | 29 |
|  | lady | ~0 | 0 | 1 |
| 6.  deep | shallow | 180 | 6 | 0 |
| 7.  soft | hard | 365 | 27 | 63 |
| 9.  mountain | valley | 90 | 3 | 26 |
| 11.  black | white | 339 | 27 | 43 |
| 15.  short | long | 279 | 54 | 24 |
| 18.  smooth | rough | 168 | 35 | 1 |
| 21.  sweet | bitter | 277 | 0 | 1 |
|  | sour | 50 | 23 | 46 |
| 23.  woman | man | 301 | 17 | 50 |
| 24.  cold | hot | 292 | 12 | 0 |
|  | warm | 151 | 25 | 31 |
| 25.  slow | fast | 166 | 65 | 138 |
| 28.  white | black | 316 | 28 | 23 |
| 29.  beautiful | ugly | 56 | 0 | 0 |
| 31.  rough | smooth | 308 | 35 | 14 |
| 37.  sleep | awake | 66 | 14 | 28 |
| 40.  girl | boy | 346 | 40 | 152 |
| 41.  high | low | 94 | 25 | 63 |
| 43.  sour | sweet | 60 | 75 | 37 |
| 48.  hard | soft | 350 | 65 | 37 |
| 57.  boy | girl | 328 | 32 | 140 |
| 58.  light- | dark | 349 | 99 | 86 |
| 65.  swift | slow | 367 | 28 | 1 |
| 72.  long | short | 319 | 45 | 126 |

*There were 500 colored children, but 1,000 white
children, and 1,000 white adults.

(I. Contrast continued)

| Stimulus Word | Response Word | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 80. square | round | 231 | 35 | 66 |
| 83. loud | low | 93 | 8 | 0 |
|  | soft | 190 | 13 | 6 |
| 88. heavy | light | 250 | 54 | 0 |
| 93. quiet | noise | 57 | 70 | 20 |
| 97. king | queen | 165 | 50 | 89 |

| II. Contiguity | | | | |
|---|---|---|---|---|
| 1. table | dish (es) | 145 | 159 | 25 |
| 2. dark | night | 221 | 421 | 0 |
| 4. sickness | bed | 54 | 105 | 111 |
|  | doctor | 62 | 116 | 23 |
| 5. man | hat | 7 | 82 | 1 |
| 8. eating | table | 21 | 108 | 88 |
| 9. mountain | snow | 10 | 61 | 51 |
| 14. hand | arm | 63 | 44 | 11 |
| 30. window | light | 186 | 47 | 9 |
| 33. foot | leg (s) | 55 | 115 | 2 |
| 35. needle | thread | 163 | 72 | 83 |
| 37. sleep | bed (s) | 160 | 382 | 197 |
|  | night | 75 | 95 | 30 |
| 38. anger | boy (s) | 49 | 53 | 1 |
| 39. carpet | floor | 3 | 149 | 101 |
| 40. girl | dress | 256 | 240 | 31 |
| 46. soldier | gun | 8 | 61 | 7 |
| 50. stomach | food | 27 | 83 | 30 |
| 51. stem | pipe | 101 | 42 | 1 |
| 53. dream | bed | 70 | 78 | 6 |
|  | night | 11 | 260 | 90 |
| 55. bread | butter | 42 | 8 | 1 |
| 57. boy | ball | 151 | 55 | 0 |
|  | pants | 10 | 63 | 4 |
|  | cap | 1 | 53 | 0 |

(II. Contiguity continued)

| Stimulus Word | Response Word | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 58. light | day | 6 | 67 | 17 |
| 64. cottage | lake | 5 | 117 | 0 |
| 68. priest | church | 166 | 271 | 185 |
| 69. ocean | boat (s) | 7 | 54 | 1 |
| | ship (s) | 35 | 79 | 47 |
| 74. whiskey | saloon | 15 | 57 | 0 |
| 81. butter | bread | 206 | 467 | 165 |
| 82. doctor | medicine | 149 | 136 | 118 |
| | sick | 52 | 448 | 212 |
| | sickness | 104 | 34 | 1 |
| 84. thief | money | 16 | 63 | 0 |
| 87. bed | night | 11 | 106 | 1 |
| 89. tobacco | pipe | 69 | 70 | 30 |
| 90. baby | milk | 1 | 55 | 0 |
| 91. moon | night | 66 | 128 | 178 |
| | sky | 73 | 103 | 15 |
| | stars | 93 | 10 | 1 |
| 96. street | house | 2 | 96 | 0 |
| 97. king | crown | 13 | 124 | 1 |
| | country | 53 | 83 | 1 |
| 98. cheese | mice | 25 | 59 | 1 |
| | mouse | 13 | 128 | 28 |
| | rat (s) | 15 | 89 | 85 |

### III. Similarity

| | | | | |
|---|---|---|---|---|
| 2. dark | black | 80 | 80 | 87 |
| 4. sickness | ill (ness) | 100 | 100 | 42 |
| 9. mountain | hill (s) | 97 | 97 | 87 |
| 11. black | dark | 315 | 315 | 153 |
| 15. short | little | 157 | 157 | 101 |
| 18. smooth | even | 136 | 70 | 1 |
| | level | 30 | 55 | 105 |
| 20. chair | seat | 52 | 131 | 45 |
| 23. woman | lady | 127 | 243 | 73 |
| 26. wish | desire | 41 | 4 | 0 |
| 28. white | clean | 197 | 97 | 24 |

(III. Similarity continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 29. beautiful | handsome | 10 | 13 | 31 |
| | lovely | 86 | 8 | 1 |
| | pretty | 64 | 280 | 220 |
| 31. rough | bumpy | 113 | 61 | 33 |
| 38. anger | cross | 1 | 56 | 1 |
| | passion | 44 | 0 | 0 |
| | wrath | 51 | 0 | 0 |
| | temper | 149 | 8 | 0 |
| 39. carpet | rug (s) | 52 | 247 | 205 |
| 41. high | tall | 177 | 56 | 84 |
| 42. working | busy | 57 | 49 | 4 |
| | labor | 51 | 18 | 12 |
| 44. earth | dirt | 147 | 102 | 31 |
| | ground | 115 | 223 | 178 |
| 58. light | bright | 166 | 74 | 61 |
| 62. sheep | mutton | 47 | 9 | 0 |
| 64. cottage | house | 60 | 425 | 190 |
| 65. swift | fast | 461 | 391 | 275 |
| | quick | 222 | 10 | 80 |
| 68. priest | clergyman | 117 | 0 | 0 |
| | minister | 62 | 168 | 121 |
| | preacher | 178 | 57 | 0 |
| 72. long | far | 35 | 90 | 1 |
| 78. thirsty | dry | 8 | 132 | 57 |
| 81. butter | grease | 218 | 5 | 4 |
| 82. doctor | physician | 76 | 8 | 0 |
| 83. loud | noisy | 213 | 11 | 1 |
| 84. thief | burglar | 112 | 64 | 0 |
| | robber | 118 | 229 | 1 |
| 86. joy | fun | 126 | 182 | 64 |
| | glad | 2 | 203 | 82 |
| | happiness | 27 | 25 | 18 |
| | happy | 217 | 260 | 292 |
| | pleasure | 71 | 6 | 1 |
| 90. baby | infant | 121 | 20 | 1 |
| 93. quiet | still | 168 | 300 | 182 |
| 97. king | ruler | 136 | 170 | 211 |

(III. Similarity continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 99. blossom | flower (s) | 162 | 579 | 280 |
| 100. afraid | nervoue | 540 | 1 | 0 |
| | ecared | 55 | 290 | 271 |
| | timid | 100 | 7 | 0 |

|||||| 
|---|---|---|---|---|
| | IV. Adjective-noun | | | |

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 6. deep | hole | 32 | 257 | 126 |
| | ocean | 93 | 15 | 17 |
| | eea | 90 | 14 | 26 |
| | water | 134 | 145 | 76 |
| | well | 44 | 87 | 27 |
| 7. eoft | bed | 12 | 57 | 113 |
| | bread | 4 | 45 | 6 |
| | cotton | 28 | 57 | 11 |
| | cushion | 25 | 39 | 0 |
| | pillow | 53 | 138 | 70 |
| 11. black | drese | 29 | 63 | 0 |
| | night | 51 | 15 | 57 |
| 18. smooth | glese | 56 | 48 | 1 |
| 21. sweet | apple (e) | 14 | 66 | 5 |
| | candy | 82 | 146 | 197 |
| | sugar | 224 | 178 | 78 |
| 24. cold | ice | 114 | 84 | 2 |
| | snow | 45 | 62 | 82 |
| | winter | 120 | 103 | 11 |
| 25. slow | snail | 62 | 2 | 1 |
| 28. white | cloth | 17 | 61 | 0 |
| | drees | 34 | 149 | 17 |
| | light | 51 | 125 | 128 |
| | paper | 17 | 54 | 1 |
| | snow | 91 | 65 | 58 |
| 29. beautiful | flower (s) | 55 | 43 | 0 |
| 31. rough | boy (s) | 8 | 126 | 1 |
| 36. red | apple (s) | 16 | 56 | 2 |
| | blood | 71 | 14 | 2 |
| | cloth | 8 | 65 | 0 |
| | drese | 18 | 85 | 117 |

(IV. Adjective-noun continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 41. high | air | 5 | 50 | 8 |
| | hill | 20 | 92 | 28 |
| | mountain (s) | 173 | 125 | 132 |
| 42. working | man | 1 | 93 | 72 |
| | men | 0 | 52 | 17 |
| 43. sour | apple (s) | 37 | 96 | 1 |
| | cream | 0 | 52 | 0 |
| | lemon (s) | 95 | 160 | 53 |
| | milk | 31 | 124 | 97 |
| | pickle (s) | 41 | 110 | 183 |
| | vinegar | 91 | 53 | 33 |
| 48. hard | floor | 16 | 54 | 0 |
| | ground | 2 | 51 | 1 |
| | rock | 38 | 92 | 178 |
| | stone | 102 | 113 | 6 |
| | wood | 66 | 30 | 8 |
| | work | 19 | 89 | 11 |
| 54. yellow | dress | 9 | 129 | 67 |
| | flower | 39 | 105 | 2 |
| | light | 14 | 59 | 1 |
| | orange | 47 | 81 | 40 |
| 65. swift | horse | 28 | 124 | 1 |
| 66. blue | dress | 18 | 173 | 5 |
| | flag | 6 | 82 | 1 |
| | sky | 239 | 102 | 130 |
| 72. long | distance | 81 | 6 | 1 |
| | grass | 4 | 75 | 0 |
| 80. square | box | 36 | 80 | 136 |
| | corner (s) | 25 | 89 | 1 |
| 83. loud | noise | 205 | 201 | 194 |
| | talk | 12 | 130 | 103 |
| 88. heavy | iron | 70 | 213 | 37 |
| | lead | 60 | 35 | 60 |
| | load | 57 | 72 | 113 |
| | weight | 117 | 39 | 143 |
| 93. quiet | house | 3 | 62 | 0 |

(IV. Adjective-noun continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 94. green | dress | 6 | 100 | 55 |
| | grass | 284 | 2 | 220 |
| 95. salt | meat | 18 | 99 | 118 |
| | water | 34 | 60 | 2 |

**V. Whole-part**

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 1. table | leg (s) | 23 | 78 | 17 |
| 3. music | notes | 17 | 10 | 1 |
| 9. mountain | peak (s) | 17 | 50 | 6 |
| | rock (s) | 18 | 49 | 79 |
| 10. house | room (s) | 17 | 64 | 6 |
| 14. hand | finger (s) | 112 | 199 | 186 |
| 17. butterfly | wing (s) | 41 | 137 | 59 |
| 30. window | glass | 316 | 421 | 199 |
| | pane | 82 | 62 | 116 |
| 33. foot | toe (s) | 71 | 115 | 78 |
| 34. spider | legs | 27 | 107 | 12 |
| 47. cabbage | leaves | 11 | 62 | 1 |
| 49. eagle | wing (s) | 24 | 92 | 1 |
| 62. sheep | wool | 143 | 411 | 301 |
| 69. ocean | wave (s) | 57 | 96 | |
| 70. head | brain (s) | 90 | 162 | 96 |
| | eye (s) | 12 | 107 | 1 |
| | hair | 159 | 203 | 178 |
| 79. city | house (s) | 55 | 29 | 1 |

**VI. Part-whole**

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 16. fruit | tree (s) | 62 | 11 | 1 |
| 33. foot | limb | 58 | 0 | 0 |
| 46. soldier | army | 137 | 63 | 29 |
| 50. stomach | body | 99 | 78 | 97 |
| 51. stem | plant | 74 | 25 | 1 |
| 70. head | body | 146 | 26 | 91 |
| 99. blossom | tree (s) | 57 | 9 | 118 |

(Table 3. continued)

| VII. Verbs | | | | |
|------------|----------------|-----------------|-------------------|--------------------|
| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
| 1. table | eat | 63 | 358 | 205 |
| 2. dark | see | 0 | 47 | 0 |
| 3. music | play | 7 | 81 | 1 |
|  | sing | 12 | 153 | 238 |
| 5. man | work | 17 | 168 | 143 |
| 8. eating | eat | 0 | 51 | 33 |
| 9. mountain | climb | 9 | 29 | 0 |
|  | climbing | 0 | 0 | 42 |
| 10. house | live | 33 | 165 | 144 |
| 14. hand | work | 49 | 113 | 51 |
|  | write | 3 | 52 | 33 |
| 16. fruit | eat | 62 | 165 | 71 |
| 17. butterfly | fly | 44 | 179 | 186 |
| 20. chair | sit | 107 | 430 | 176 |
| 22. whistle | blow | 95 | 189 | 125 |
|  | sing | 75 | 6 | 12 |
| 24. cold | freeze | 7 | 68 | 127 |
| 25. slow | walk | 8 | 107 | 87 |
| 26. wish | hope | 51 | 10 | 1 |
|  | went | 66 | 99 | 183 |
| 27. river | swim | 4 | 72 | 45 |
| 30. window | look | 15 | 116 | 76 |
| 33. foot | walk | 106 | 205 | 189 |
| 34. spider | crawls | 1 | 54 | 2 |
| 35. needle | sew | 134 | 449 | 208 |
| 37. sleep | dream | 28 | 55 | 3 |
|  | rest | 300 | 40 | 140 |
|  | wake | 60 | 6 | 33 |
| 38. anger | fight | 8 | 57 | 113 |
| 39. carpet | walk | 15 | 88 | 22 |
| 43. sour | eat | 0 | 54 | 0 |
| 46. soldier | fight | 17 | 160 | 2 |
| 47. cabbage | eat | 30 | 193 | 86 |
| 49. eagle | fly | 46 | 120 | 163 |
| 50. stomach | ache | 31 | 189 | 26 |
|  | eat | 45 | 108 | 170 |

(VII. Verbs continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 52. lamp | burn | 20 | 70 | 19 |
| 53. dream | sleep | 339 | 272 | 279 |
| 55. bread | eat | 148 | 356 | 195 |
| 57. boy | play | 20 | 84 | 2 |
| 60. Bible | read | 31 | 116 | 115 |
| 63. bath | wash | 102 | 143 | 80 |
| 64. cottage | live | 17 | 79 | 6 |
| 65. swift | run | 19 | 202 | 15 |
| 67. hungry | eat | 126 | 337 | 186 |
| 70. head | think | 9 | 59 | 1 |
| 71. stove | burn | 12 | 103 | 1 |
| | cook | 24 | 62 | 55 |
| 74. whiskey | drink | 232 | 279 | 177 |
| 77. hammer | pound | 51 | 288 | 1 |
| 78. thirsty | drink | 206 | 364 | 180 |
| 79. city | live | 7 | 50 | 2 |
| 81. butter | eat | 34 | 122 | 189 |
| 83. loud | holler | 16 | 190 | 67 |
| 84. thief | steal | 212 | 320 | 146 |
| 85. lion | roar | 1 | 109 | 1 |
| | eat | 46 | 52 | 1 |
| 87. bed | lay | 8 | 109 | 1 |
| | rest | 132 | 17 | 0 |
| | sleep | 345 | 453 | 233 |
| 89. tobacco | chew | 28 | 214 | 3 |
| | smoke | 387 | 466 | 225 |
| 90. baby | cry | 37 | 119 | 1 |
| 91. moon | shine | 26 | 107 | 118 |
| 92. scissors | cut | 347 | 802 | 284 |
| 96. street | walk | 78 | 88 | 1 |
| 97. king | rule | 10 | 107 | 0 |
| 98. cheese | eat | 67 | 251 | 201 |
| 100. afraid | fear | 197 | 14 | 1 |

(Table 3. continued)

| | VIII. Noun-adjective | | | |
|---|---|---|---|---|
| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
| 3. music | sweet | 47 | 79 | 6 |
| 5. man | big | 0 | 26 | 1 |
| 9. mountain | high | 246 | 390 | 41 |
| 10. house | big | 4 | 51 | 11 |
| | warm | 3 | 62 | 3 |
| 16. fruit | good | 24 | 89 | 20 |
| 17. butterfly | pretty | 39 | 89 | 20 |
| 22. whistle | loud | 27 | 71 | 76 |
| 35. needle | sharp | 152 | 56 | 7 |
| 36. red | bright | 40 | 68 | 1 |
| 39. carpet | soft | 78 | 28 | 0 |
| 44. earth | black | 7 | 73 | 0 |
| | round | 61 | 82 | 38 |
| 46. soldier | brave | 46 | 55 | 19 |
| 49. eagle | big | 0 | 52 | 8 |
| 50. stomach | sick | 10 | 85 | 0 |
| 51. stem | long | 18 | 60 | 2 |
| 55. bread | good | 21 | 90 | 72 |
| 60. Bible | holy | 57 | 68 | 81 |
| 62. sheep | white | 18 | 57 | 0 |
| 68. priest | Catholic | 36 | 111 | 35 |
| 69. ocean | deep | 87 | 25 | 2 |
| 70. head | round | 21 | 58 | 0 |
| 71. stove | black | 59 | 57 | 0 |
| | hot | 86 | 200 | 42 |
| | warm | 32 | 127 | 2 |
| 75. child | good | 7 | 78 | 0 |
| | small | 52 | 45 | 0 |
| 79. city | big | 9 | 124 | 0 |
| | large | 62 | 40 | 1 |
| 81. butter | soft | 65 | 8 | 3 |
| | yellow | 80 | 117 | 35 |
| 85. lion | big | 2 | 85 | 1 |
| | fierce | 36 | 119 | 0 |
| 90. baby | little | 12 | 97 | 30 |
| | small | 42 | 90 | 12 |

(VIII. Noun-adjective continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 95. salt | white | 52 | 115 | 1 |
| 96. street | clean | 33 | 101 | 0 |
| | dirty | 190 | 35 | 0 |
| | long | 36 | 97 | 0 |
| | narrow | 7 | 90 | 1 |
| 98. cheese | good | 5 | 85 | 1 |
| | yellow | 29 | 13 | 68 |

|  | IX. Cause-effect | | | |
|---|---|---|---|---|
| 4. sickness | death | 115 | 8 | 3 |
| 52. lamp | light | 650 | 648 | 308 |
| 63. bath | clean | 120 | 192 | 156 |
| | cleanliness | 109 | 1 | 0 |
| 71. stove | fire | 217 | 164 | 237 |
| | heat | 213 | 112 | 50 |
| 74. whiskey | drunk | 31 | 138 | 85 |
| 91. moon | light | 231 | 155 | 128 |

|  | X. Verb-objects | | | |
|---|---|---|---|---|
| 8. eating | bread | 46 | 178 | 44 |
| | food | 170 | 54 | 55 |
| 28. wish | fairy | 11 | 64 | 0 |
| 77. hammer | nail (s) | 283 | 404 | 221 |

### Preferred Responses

In all behavior there are words, phrases, and responses
which occur more frequently than others. In the comparative
study of white and colored children the writer has chosen
the three response words having the largest number of
frequencies. The data for this comparison, as indicated in
Table 4 were taken from Kent and Rossnoff's frequency
tables for white adults, Woodrow and Lowell's frequency
tables for white children, and the frequency tables pre-
sented in Table 2 for colored children.

The table shows in a striking manner how dissimilar
are responses given by white children and colored children.
Only for nine stimulus words are the three most frequent
white children's responses also the three most frequent
colored children's responses. These stimulus words with
their responses are: eating (food, bread, table); window
(glass, pane, look); needle (thread, sew, sewing); bread
(eat, flour, good); bath (water, clean, wash); child (baby,
children, girl); thirsty (water, dry, drink); loud (noise,
holler, talk); green (grass, color, dress).

It may be observed that the favorite white children's
reaction is one of the three most frequent of the colored
children in 87 per cent of the cases, while the colored
children's favorite reaction is one of the white children's

three most frequent in 78 per cent of the cases. It is
interesting to note further that the average frequency of
the favorite adult reaction is 264, of the favorite white
children's reaction 270, and of the favorite colored chil-
dren's reaction 198. It is evident then, that with the list
of stimulus words here used, there is not much difference
between colored children and white children in the average
frequency of the favorite reaction. There is some over-
lapping in all comparisons of preferred responses.

Table 4. Comparison of preferred responses for white
adults, white children, and colored children

| Stimulus Words | Response Words | Frequencies | | |
|---|---|---|---|---|
| | | White Adults | White Children | *Colored Children |
| 1. table | eat | 76 | 358 | 200 |
| | dishes | | 126 | |
| | legs | | 70 | |
| | chair | 267 | | 107 |
| | eating | | | 53 |
| | wood | 76 | | |
| 2. dark | night | 221 | 421 | |
| | black | 76 | 80 | 87 |
| | see | | 57 | |
| | light | 427 | | 275 |
| | color | | | 46 |
| 3. music | piano | 198 | 198 | 53 |
| | sing | 153 | 153 | 238 |
| | sweet | 79 | 79 | |
| | singing | | | 51 |
| 4. sickness | doctor | 142 | 116 | |
| | bed | | 105 | 111 |
| | ill | 71 | 95 | 175 |
| | hospital | | | 48 |
| | death | 115 | | |
| 5. man | work | | 168 | 143 |
| | hat | | 82 | |
| | person | | 45 | |
| | human | 44 | | 53 |
| | woman | 394 | | 29 |
| | male | 99 | | |

*Since there were 1,000 white adults and 1,000 white
children, but only 500 colored children, the frequencies for
colored children would be more comparable if they were mul-
tiplied by two. Chances are the trend in the preferred
responses would be similar for 500 additional colored
children.

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 6. deep | water | 134 | 145 | |
| | hole | | 257 | 126 |
| | well | 44 | 87 | |
| | river | | | 62 |
| | down | | | 61 |
| | shallow | 180 | | |
| 7. soft | pillow | 54 | 138 | 70 |
| | bed | | 57 | 113 |
| | cotton | | 57 | |
| | comfortable | | | 53 |
| | hard | 365 | | |
| | easy | 34 | | |
| 8. eating | food | 170 | 54 | 51 |
| | bread | 46 | 178 | 43 |
| | table | 166 | 108 | 68 |
| 9. mountain | high | 246 | 390 | |
| | hill | 184 | 91 | 87 |
| | snow | | 61 | 51 |
| | rock | | | 79 |
| | valley | 90 | | |
| 10. house | live | 78 | 165 | 114 |
| | warm | 74 | 62 | |
| | big | | 51 | |
| | living | | | 76 |
| | school | | | 59 |
| | home | 103 | | |
| 11. black | dark | 172 | 315 | 153 |
| | color | 129 | 104 | 93 |
| | dress | | 63 | |
| | night | | | 57 |
| | white | 339 | | |
| 14. hand | fingers | 83 | 130 | 186 |
| | work | | 113 | 51 |
| | clock | | 65 | |
| | rise | | | 67 |
| | foot | 204 | | |
| | arm | 68 | | |

(Table 4. continued)

| Stimulus Words | Response Words | Frequencies | | |
|---|---|---|---|---|
| | | White Adults | White Children | Colored Children |
| 15. short | long | 279 | 54 | |
| | small | 136 | 214 | 28 |
| | little | | 157 | 101 |
| | low | | | 57 |
| | tall | 168 | | |
| 16. fruit | apple | 157 | 151 | 172 |
| | apples | 102 | 174 | |
| | eat | | 153 | 70 |
| | oranges | | | 93 |
| | vegetable | 75 | | |
| 17. butterfly | fly | 44 | 179 | 183 |
| | wings | | 114 | 59 |
| | pretty | | 89 | |
| | caterpillar | | | 62 |
| | insect | 261 | | |
| | bird | 64 | | |
| 18. smooth | soft | 79 | 132 | |
| | even | | 70 | |
| | nice | 56 | 68 | |
| | level | | | 105 |
| | hard | 50 | | 82 |
| | slick | | | 78 |
| 20. chair | seat | 127 | 131 | 45 |
| | sit | 107 | 430 | 171 |
| | set | | 38 | |
| | table | 191 | | 55 |
| 21. sweet | sugar | 224 | 178 | 78 |
| | candy | 84 | 146 | 197 |
| | good | | 213 | |
| | sour | 301 | | 46 |
| 22. whistle | noise | 173 | 85 | 94 |
| | blow | 95 | 89 | 123 |
| | boy | | 79 | |
| | loud | | | 76 |
| | sound | 103 | | |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 23. woman | lady | 41 | 243 | 73 |
| | dress | | 96 | |
| | mother | | 53 | 142 |
| | human | | | 82 |
| | man | 292 | | |
| | female | 134 | | |
| 24. cold | winter | 120 | 103 | 90 |
| | ice | | 84 | |
| | freeze | | 68 | 123 |
| | snow | | | 83 |
| | warm | 166 | | |
| | hot | 151 | | |
| 25. slow | fast | 316 | 65 | 138 |
| | lazy | | 138 | 85 |
| | walk | | 107 | |
| | cart | | | 88 |
| | easy | 63 | | |
| | snail | 62 | | |
| 26. wish | want | 66 | 99 | 167 |
| | bone | | 85 | |
| | fairy | | 64 | |
| | something | | | 76 |
| | had | | | 62 |
| | desire | 197 | | |
| | hope | 51 | | |
| 27. river | water | 393 | 433 | 211 |
| | lake | 65 | 42 | 47 |
| | swim | | 72 | |
| | swimming | | | 52 |
| | stream | 117 | | |
| 28. white | color | 170 | 116 | 179 |
| | dress | | 149 | |
| | light | | 125 | |
| | lights | | | 128 |
| | snow | 91 | | 58 |
| | black | 308 | | |

(Table 4. continued)

| Stimulus Words | Response Words | Frequencies | | |
| --- | --- | --- | --- | --- |
| | | White Adults | White Children | Colored Children |
| 29. beautiful | pretty | 113 | 280 | 220 |
| | nice | 73 | 169 | |
| | lady | | 38 | |
| | girl | | | 110 |
| | good-looking | 86 | | 71 |
| 30. window | glass | 316 | 421 | 199 |
| | pane | 82 | 62 | 116 |
| | look | | 116 | 76 |
| | light | 186 | | |
| 31. rough | hard | 38 | 144 | 91 |
| | boy | 38 | 89 | |
| | mean | | 71 | |
| | tough | | | 78 |
| | bad | | | 77 |
| | smooth | 346 | | |
| 33. foot | walk | 106 | 205 | 189 |
| | toes | | 81 | 78 |
| | leg | | 79 | |
| | feet | | | 161 |
| | hand | 185 | | |
| | shoe | 146 | | |
| 34. spider | web | 188 | 261 | 119 |
| | legs | | 107 | |
| | bug | 136 | 83 | |
| | bite | | | 173 |
| | poison | | | 83 |
| | insect | 276 | | |
| 35. needle | thread | 160 | 72 | 183 |
| | sew | | 449 | 206 |
| | sewing | | 81 | 122 |
| | sharp | 147 | | |
| | pin | 152 | | |
| 36. red | color | 254 | 298 | 226 |
| | dress | | 85 | 117 |
| | bright | | 68 | |
| | hat | | | 66 |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 36. red (contin.) | blue | 99 | | |
| | white | 97 | | |
| 37. sleep | bed | 75 | 351 | 197 |
| | night | | 95 | |
| | tired | | 67 | |
| | rest | 300 | | 139 |
| | resting | | | 58 |
| | awake | 94 | | |
| 38. anger | mad | 121 | 471 | 260 |
| | cross | 44 | 56 | |
| | fight | | 57 | 111 |
| | bad | | | 47 |
| | mean | | | |
| | temper | 149 | | |
| 39. carpet | floor | 256 | 149 | 101 |
| | rug | 168 | 245 | 205 |
| | walk | | 88 | |
| | sweep | | | 55 |
| | soft | 78 | | |
| 40. girl | boy | 350 | 40 | 153 |
| | dress | | 240 | |
| | child | | 45 | 88 |
| | woman | 61 | | 48 |
| | female | 77 | | |
| 41. high | mountain | 157 | 120 | 132 |
| | hill | | 92 | |
| | up | | 60 | |
| | tall | 57 | | 84 |
| | low | 328 | | 63 |
| 42. working | hard | 105 | 299 | 162 |
| | man | | 93 | 72 |
| | men | | 51 | |
| | ground | | | 83 |
| | labor | 147 | | |
| | busy | 51 | | |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 43. sour | sweet | 349 | 75 | |
| | milk | | 124 | 97 |
| | pickles | | 89 | 183 |
| | lemon | 78 | | 53 |
| | vinegar | 91 | | |
| 44. earth | ground | 166 | 223 | 178 |
| | dirt | 115 | 103 | |
| | round | | 82 | |
| | hard | | | 122 |
| | dark | | | 106 |
| | clay | 71 | | |
| 46. soldier | man | 189 | 95 | 76 |
| | war | 97 | 203 | 214 |
| | fight | | 160 | |
| | march | | | 68 |
| | army | 137 | | |
| 47. cabbage | vegetable | 394 | 140 | |
| | eat | | 193 | 83 |
| | leaves | | 62 | |
| | eating | | | 55 |
| | green | 44 | | 34 |
| | plant | 48 | | |
| 48. hard | stone | 102 | 113 | |
| | rock | | 92 | 178 |
| | work | | 89 | |
| | soft | 376 | | 37 |
| | wood | 66 | | |
| | brick | | | 28 |
| 49. eagle | bird | 568 | 373 | 128 |
| | fly | 46 | 120 | 63 |
| | wings | | 49 | |
| | paper | | | 43 |
| | flying | 23 | | |
| 50. stomach | organ | 81 | | |
| | ache | | 189 | |
| | eat | | 108 | 169 |
| | sick | | 85 | |
| | body | 99 | | 97 |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|----------------|----------------|--------------|----------------|------------------|
| 50. stomach (contin.) | eating | | | 60 |
| | food | 102 | | |
| 51. stem | flower | 259 | 367 | 186 |
| | flowers | | 80 | |
| | long | | 60 | |
| | leaves | | | 86 |
| | leaf | 97 | | 52 |
| | plant | 74 | | |
| 52. lamp | light | 650 | 648 | 283 |
| | burn | | 70 | |
| | glass | | 50 | |
| | see | | | 73 |
| | oil | 49 | | 41 |
| | chimney | 37 | | |
| 53. dream | sleep | 339 | 272 | 273 |
| | night | 42 | 260 | 90 |
| | bed | | 78 | |
| | true | | | 51 |
| | vision | 48 | | |
| 54. yellow | color | 301 | 320 | 195 |
| | dress | | 129 | 67 |
| | flower | | 105 | |
| | lemon | | | 113 |
| | white | 70 | | |
| | orange | 47 | | |
| 55. bread | eat | 148 | 356 | 195 |
| | flour | | 95 | 112 |
| | good | | 90 | 72 |
| | food | 191 | | |
| | butter | 151 | | |
| 57. boy | man | 104 | 61 | |
| | play | | 83 | |
| | pants | | 63 | |
| | girl | 319 | | 140 |
| | basketball | | | 105 |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 57. boy (contin.) | male | | | 87 |
| | child | 86 | | |
| 58. light | dark | 231 | 99 | 86 |
| | lamp | | 251 | 195 |
| | bright | | 74 | 61 |
| | darkness | 93 | | |
| | sun | 85 | | |
| 60. Bible | book | 338 | 224 | |
| | God | | 124 | 191 |
| | read | | 116 | 114 |
| | holy | 57 | | 81 |
| | religion | 89 | | |
| 62. sheep | animal | 225 | 117 | |
| | lamb | 151 | 79 | |
| | wool | 143 | 411 | 301 |
| | animals | | | 97 |
| | fur | | | 53 |
| 63. bath | water | 339 | 295 | 165 |
| | wash | | 143 | 80 |
| | clean | 120 | 192 | 146 |
| | cleanliness | 109 | | |
| 64. cottage | house | 461 | 425 | 90 |
| | home | 85 | 101 | 20 |
| | lake | | 117 | |
| | school | | | 25 |
| | country | 36 | | |
| 65. swift | fast | 222 | 391 | 275 |
| | run | | 202 | |
| | horse | | 124 | |
| | quick | 170 | | 80 |
| | running | | | 50 |
| | slow | 190 | | |
| 66. blue | color | 256 | 318 | 226 |
| | sky | 239 | 102 | 130 |
| | dress | | 173 | |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 66. blue (contin.) | flower | | | 53 |
| | green | 54 | | |
| 67. hungry | food | 136 | 55 | |
| | eat | 126 | 337 | 180 |
| | bread | | 173 | |
| | eating | 64 | | 128 |
| | starve | | | 90 |
| 68. priest | minister | 178 | 168 | 21 |
| | church | 166 | 271 | 83 |
| | Catholic | | 111 | |
| | king | | | 106 |
| | clergyman | 62 | | |
| 69. ocean | water | 427 | 413 | 228 |
| | sea | 75 | 88 | 63 |
| | waves | | 88 | |
| | ships | | | 47 |
| | deep | 87 | | |
| 70. head | hair | 159 | 203 | 178 |
| | brains | | 137 | 96 |
| | eyes | | 91 | |
| | body | 146 | | 91 |
| | foot | 64 | | |
| 71. stove | fire | 217 | 164 | 233 |
| | hot | 86 | 200 | |
| | warm | | 127 | |
| | cooking | | | 87 |
| | cook | | | 53 |
| | heat | 213 | | |
| 72. long | distance | 81 | | |
| | far | | 90 | |
| | grass | | 75 | |
| | big | | 55 | |
| | tall | | | 178 |
| | short | 413 | | 126 |
| | large | 50 | | 47 |

(Table 4. continued)

| Stimulus Words | Response Words | Frequencies | | |
|---|---|---|---|---|
| | | White Adults | White Children | Colored Children |
| 74. whiskey | drink | 232 | 279 | 177 |
| | beer | | 108 | |
| | drunk | | 138 | 78 |
| | drinking | | | 67 |
| | liquor | 70 | | |
| | alcohol | 50 | | |
| 75. child | baby | 193 | 185 | 165 |
| | children | | 94 | 82 |
| | girl | | 93 | |
| | boy | 64 | | 73 |
| | infant | 122 | | |
| 77. hammer | nail | 185 | 218 | 219 |
| | nails | 98 | 166 | |
| | pound | | 288 | |
| | hit | | | 112 |
| | nailing | | | 68 |
| | tool | 69 | | |
| 78. thirsty | water | 341 | 377 | 232 |
| | dry | 218 | 132 | 57 |
| | drink | 206 | 364 | 178 |
| | animals | | | |
| 79. city | town | 258 | 110 | 95 |
| | Minneapolis | | 218 | |
| | big | | 124 | |
| | state | 74 | | 130 |
| | Wichita | | | 116 |
| | New York | 99 | | |
| 80. square | block | 71 | 300 | 200 |
| | corner | | 83 | |
| | oblong | | 95 | |
| | box | | | 136 |
| | round | 250 | | 66 |
| | table | 47 | | |
| 81. butter | bread | 206 | 467 | 163 |
| | yellow | 80 | 117 | |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 81. butter (contin.) | eat | | 122 | 189 |
| | cow | | | 73 |
| | milk | 101 | | |
| 82. doctor | medicine | 136 | 136 | 118 |
| | sick | 448 | 448 | 212 |
| | men | 152 | 152 | |
| | ill | | | 52 |
| 83. loud | noise | 201 | 201 | 194 |
| | holler | 190 | 190 | 67 |
| | talk | 130 | 130 | 163 |
| 84. thief | steal | 212 | 320 | 135 |
| | robber | 126 | 229 | |
| | burglar | 118 | 64 | |
| | stealing | | | 50 |
| | take | | | 12 |
| 85. lion | animal | 326 | 205 | 189 |
| | fierce | | 119 | |
| | eat | | 109 | |
| | beast | 67 | | 134 |
| | circus | | | 63 |
| | tiger | 102 | | |
| 86. joy | happy | 121 | 260 | 292 |
| | glad | | 203 | 82 |
| | fun | | 182 | |
| | playing | | | 102 |
| | happiness | 215 | | |
| | sorrow | 135 | | |
| 87. bed | sleep | 345 | 453 | 219 |
| | night | | 106 | |
| | lay | | 109 | |
| | sleeping | 41 | | 120 |
| | cover | | | 25 |
| | rest | 132 | | |
| 88. heavy | iron | 70 | 215 | |
| | hard | | 178 | |

(Table 4. continued)

| Stimulus Words | Response Words | White Adults | White Children | Colored Children |
|---|---|---|---|---|
| 88. heavy (contin.) | load | | 72 | 113 |
| | weight | 177 | | 143 |
| | lead | | | 60 |
| | light | 273 | | |
| 89. tobacco | smoke | 387 | 466 | 217 |
| | pipe | 68 | 70 | |
| | chew | | 214 | |
| | smoking | 98 | | 73 |
| | cigarettes | | | 70 |
| 90. baby | child | 238 | 172 | 160 |
| | cry | | 119 | |
| | little | 42 | 97 | |
| | stork | | | 79 |
| | girl | | | 62 |
| | infant | 168 | | |
| 91. moon | light | 231 | 155 | 178 |
| | night | | 128 | |
| | bright | | 115 | 97 |
| | shine | | | 118 |
| | sun | 120 | | |
| | stars | 93 | | |
| 92. scissors | cut | 347 | 802 | 282 |
| | sharp | 190 | 35 | |
| | cutting | 140 | 48 | 162 |
| | cutters | | | 37 |
| 93. quiet | still | 136 | 300 | 182 |
| | noise | 113 | 70 | |
| | sleep | | 72 | |
| | silence | | | 80 |
| | room | | | 57 |
| | rest | 68 | | |
| 94. green | grass | 284 | 272 | 220 |
| | color | 200 | 237 | 100 |
| | dress | | 100 | 55 |
| | yellow | 54 | | |

(Table 4. continued)

| Stimulus Words | Response words | Frequencies | | |
|---|---|---|---|---|
| | | White Adults | White Children | Colored Children |
| 95. salt | sugar | 88 | | |
| | bitter | | 110 | |
| | meat | | 99 | 118 |
| | white | | 97 | |
| | food | | | 159 |
| | eat | 87 | | 72 |
| | pepper | 142 | | |
| 96. street | walk | 78 | 88 | |
| | dirty | | 85 | |
| | car | | 79 | 198 |
| | sidewalk | 46 | | 77 |
| | cross | | | 51 |
| | road | 91 | | |
| 97. king | ruler | 162 | 170 | 211 |
| | crown | 63 | 124 | |
| | rule | | 107 | |
| | queen | 354 | | 89 |
| | throne | | | 65 |
| 98. cheese | eat | | 251 | 201 |
| | mouse | | 123 | |
| | yellow | 32 | 76 | 68 |
| | rat | | | 85 |
| | butter | 136 | | |
| | milk | 106 | | |
| 99. blossom | flower | 467 | 486 | 280 |
| | flowers | 73 | 93 | |
| | apple | 50 | 87 | |
| | tree | | | 118 |
| | bloom | | | 64 |
| 100. afraid | fear | 197 | | |
| | dark | 114 | 151 | |
| | scared | 106 | 290 | 271 |
| | dog | | 73 | |
| | frightened | | | 122 |
| | whipping | | | 24 |

The data presented in the association classifications
are summarized in Table 5. This summary reveals a number
of striking differences between white children and colored
children. It may be noted that the white children gave more
responses of the following types: contiguity, similarity,
adjective-noun, noun-adjective, cause-effect, and verb-
object. The colored children gave more responses for
contrast, part-whole, whole-part, and verb types.

It should be noted that the colored children gave more
responses to contrast than white children. The average fre-
quency for contrast is 52.16 for colored children and 34.81
for white children. Do the above findings agree with
Meumann (2) when he says that the great likelihood of oppo-
sites in less intelligent children are characteristic of
adults? Is it not possible that Meumann's less intelligent
children were more mature? Both improvement in intelligence
and an increasing use of opposites go with increase in
maturity. Do the above statements prove that colored
children are more mature or less intelligent than white
children of the same chronological age? Moreover, colored
children's favorite association types are more like the
favorite adult association types. Wreechner (5) has this
to say about opposites, "Association of opposites is by far
the commonest form of logical associations among adults,

Table 5. Summary of data on association types.

| Class | Average per Stimulus Word | Average per Individual |
|-------|---------------------------|------------------------|
| | **White Adults** | |
| Contrast | 257.37 | .257 |
| Contiguity | 87.00 | .087 |
| Similarity | 18.43 | .018 |
| Adjective-noun | 156.27 | .156 |
| Whole-part | 84.13 | .084 |
| | | |
| Part-whole | 90.42 | .090 |
| Verb | 86.62 | .086 |
| Noun-adjective | 64.59 | .065 |
| Cause-effect | 210.74 | .210 |
| Verb-object | 170.00 | .170 |
| | **White Children** | |
| Contrast | 34.81 | .034 |
| Contiguity | 165.60 | .165 |
| Similarity | 17.31 | .017 |
| Adjective-noun | 236.71 | .236 |
| Whole-part | 163.60 | .163 |
| | | |
| Part-whole | 30.28 | .030 |
| Verb | 193.35 | .193 |
| Noun-adjective | 11.74 | .012 |
| Cause-effect | 177.24 | .177 |
| Verb-object | 234.66 | .234 |
| | **Colored Children** | |
| Contrast | 52.16 | .104 |
| Contiguity | 56.79 | .122 |
| Similarity | 10.91 | .214 |
| Adjective-noun | 142.20 | .284 |
| Whole-part | 89.26 | .178 |
| | | |
| Part-whole | 48.14 | .096 |
| Verb | 212.14 | .324 |
| Noun-adjective | 42.66 | .085 |
| Cause-effect | 127.12 | .254 |
| Verb-objects | 106.66 | .211 |

and is about five times as frequent with adults as with
children." If Wreschner's statement is true, then colored
children may be more mature than white children of the same
chronological age.

In the explanation of these obtained differences there
are some other considerations that should be noted. In the
first place the preceding conclusions are based upon the
results obtained with a particular list of stimulus words.
To what extent this fact limits their general validity it
is hard to say. So long as the same words and the same
procedure are used for both white and colored children, one
should be justified in comparing them with respect to the
types of their responses. In the second place the differ-
ences in vocabulary between white and colored children have
to be carefully considered. Colored children have a lower
social status which is not conducive to a large vocabulary.
Poor white children have a low social status too, but they
come in contact with white children of a higher social
status and form new associations. Moreover, white children
of low social status can go to many places of educational
value because of their racial standing. Colored children
form a number of associations at home, yet the parents are
usually not well educated, so the associations formed are
usually repetitions. They form most of their new

associations at echool. Becauee of the low economic statue
of the parents of colored children, travel is limited.
Very few colored children travel in the summer, so their
experiencee, and consequently their vocabuleries, ere not
up to those of white children. Colored children get most
of their knowledge of travel through reading geography end
travel books; yet, the writer believes that if colored
children were blessed with educational edvantahtegee, there
would be lase difference in associetions.

## Individual Responses

The tendency of white children, es compared with
colored children, to give individuel reeponses is eet forth
in Table 6. In order to compere colored children with
white children in individual responses the writer took all
responses with e frequency of one. For white children
these responsee were teken from Woodrow and Lowell's
frequency tables. This comparison was made for only 90
stimulus words in order to include white adults. The
largest number of individual responses for white children
wae 95 to the word long, whereas the largest number of
individual responses for colored children wae 53 to the
word working. Table 6 indicates that the frequencies for
white children ere in neerly every instance twice as large
for colored children. It ie true there were only 500

Table 8. Individual responses for 90 stimulus words

| Stimulus Words | White Children | Adults | Colored Children |
|---|---|---|---|
| 1. table | 49 | 66 | 9 |
| 2. dark | 50 | 70 | 12 |
| 3. music | 45 | 92 | 12 |
| 4. sickness | 54 | 81 | 18 |
| 5. man | 59 | 111 | 20 |
| 6. deep | 49 | 70 | 15 |
| 7. soft | 64 | 79 | 24 |
| 8. eating | 46 | 82 | 19 |
| 9. mountain | 52 | 82 | 9 |
| 10. house | 55 | 96 | 26 |
| 11. black | 49 | 62 | 15 |
| 14. hand | 65 | 80 | 30 |
| 15. short | 75 | 101 | 20 |
| 16. fruit | 23 | 61 | 8 |
| 17. butterfly | 29 | 77 | 19 |
| 18. smooth | 41 | 91 | 29 |
| 20. chair | 24 | 54 | 13 |
| 21. sweet | 35 | 55 | 15 |
| 22. whistle | 45 | 84 | 19 |
| 23. woman | 54 | 89 | 23 |
| 24. cold | 51 | 70 | 21 |
| 25. slow | 30 | 151 | 24 |
| 26. wish | 44 | 144 | 27 |
| 27. river | 23 | 75 | 8 |
| 28. white | 76 | 79 | 25 |
| 29. beautiful | 35 | 109 | 16 |
| 30. window | 48 | 52 | 15 |
| 31. rough | 68 | 121 | 27 |
| 33. foot | 68 | 69 | 16 |
| 34. spider | 56 | 77 | 19 |
| 35. needle | 24 | 35 | 4 |
| 36. red | 65 | 70 | 27 |
| 37. sleep | 67 | 171 | 25 |
| 38. anger | 68 | 175 | 17 |
| 39. carpet | 56 | 62 | 32 |

(Table 6. continued)

| Response Words | White Children | Adults | Colored Children |
|---|---|---|---|
| 40. girl | 55 | 104 | 28 |
| 41. high | 72 | 61 | 24 |
| 42. working | 70 | 122 | 33 |
| 43. sour | 53 | 50 | 17 |
| 44. earth | 59 | 80 | 24 |
| 46. soldier | 48 | 88 | 17 |
| 47. cabbage | 36 | 58 | 18 |
| 48. hard | 67 | 93 | 31 |
| 49. eagle | 49 | 54 | 21 |
| 50. stomach | 70 | 84 | 19 |
| 51. stem | 69 | 57 | 22 |
| 52. lamp | 37 | 39 | 9 |
| 53. dream | 77 | 117 | 26 |
| 54. yellow | 66 | 79 | 32 |
| 55. bread | 46 | 52 | 15 |
| 57. boy | 85 | 105 | 31 |
| 58. light | 62 | 84 | 28 |
| 60. Bible | 38 | 63 | 12 |
| 62. sheep | 64 | 62 | 13 |
| 63. bath | 39 | 46 | 16 |
| 64. cottage | 48 | 75 | 17 |
| 65. swift | 51 | 77 | 18 |
| 66. blue | 64 | 65 | 15 |
| 67. hungry | 87 | 92 | 16 |
| 68. priest | 54 | 91 | 22 |
| 69. ocean | 40 | 58 | 7 |
| 70. head | 62 | 84 | 19 |
| 71. stove | 30 | 44 | 9 |
| 72. long | 95 | 116 | 31 |
| 74. whiskey | 41 | 94 | 10 |
| 75. child | 73 | 91 | 16 |
| 77. hammer | 46 | 51 | 15 |
| 78. thirsty | 28 | 47 | 5 |
| 79. city | 53 | 78 | 21 |
| 80. square | 67 | 105 | 25 |

(Table 6. continued)

| Response Words | White Children | Adults | Colored Children |
|---|---|---|---|
| 81. butter | 32 | 48 | 13 |
| 82. doctor | 59 | 98 | 19 |
| 83. loud | 72 | 75 | 15 |
| 84. thief | 50 | 98 | 12 |
| 85. lion | 48 | 81 | 26 |
| 86. joy | 47 | 104 | 14 |
| 87. red | 31 | 54 | 10 |
| 88. heavy | 65 | 100 | 18 |
| 89. tobacco | 32 | 70 | 11 |
| 90. baby | 54 | 85 | 18 |
| 91. moon | 33 | 58 | 11 |
| 92. scissors | 23 | 49 | 4 |
| 93. quiet | 53 | 100 | 28 |
| 94. green | 58 | 65 | 16 |
| 95. salt | 60 | 80 | 25 |
| 96. street | 62 | 89 | 22 |
| 97. king | 84 | 72 | 17 |
| 98. cheese | 32 | 75 | 15 |
| 99. blossom | 69 | 57 | 8 |
| 100. afraid | 49 | 124 | 15 |

colored children, but it is unbelievable that 500 more
colored children would double the number of individual
responses. They would add some, but they would also sub-
tract some from the present list.

The question arises, what are the causes for these
great differences in individual responses? As has already
been stated, there is a lack of social and economic advan-
tages for colored children. When a child does not have
many new experiences, most of his associations are repeti-
tions of the old ones. It is therefore possible that the
white children's responses include the colored children's
responses and more.

### Total Number of Responses

The total number of response words is made up of all
the response words given for 90 stimulus words. The fre-
quencies of these responses to the stimulus words appear in
Table 7. It must be remembered that there were 1,000 white
children and 500 colored children to compare, so the total
number of response words should be greater for the white
children. The largest array of responses given by white
children occurs with the word <u>long</u>, to which they gave 178
responses; whereas the colored children gave only 52
responses to the word <u>smooth</u>.

It looks very much as if a marked poverty of mental

Table 7.  Total number of response words for 90 stimulus
          words

| Stimulus Words | White Children | Adults | Colored Children |
|---|---|---|---|
| 1. table | 104 | 124 | 20 |
| 2. dark | 104 | 114 | 23 |
| 3. music | 84 | 172 | 27 |
| 4. sickness | 123 | 145 | 33 |
| 5. man | 150 | 169 | 40 |
| 6. deep | 112 | 119 | 33 |
| 7. soft | 163 | 155 | 43 |
| 8. eating | 127 | 163 | 39 |
| 9. mountain | 103 | 142 | 27 |
| 10. house | 144 | 184 | 44 |
| 11. black | 112 | 109 | 31 |
| 14. hand | 146 | 146 | 52 |
| 15. short | 138 | 159 | 38 |
| 16. fruit | 70 | 123 | 21 |
| 17. butterfly | 81 | 145 | 36 |
| 18. smooth | 116 | 157 | 52 |
| 20. chair | 77 | 107 | 30 |
| 21. sweet | 82 | 95 | 24 |
| 22. whistle | 114 | 151 | 39 |
| 23. woman | 129 | 163 | 50 |
| 24. cold | 118 | 123 | 48 |
| 25. slow | 128 | 204 | 45 |
| 26. wish | 106 | 232 | 46 |
| 27. river | 73 | 127 | 21 |
| 28. white | 125 | 135 | 38 |
| 29. beautiful | 110 | 182 | 26 |
| 30. window | 88 | 102 | 27 |
| 31. rough | 155 | 201 | 42 |
| 33. foot | 112 | 127 | 26 |
| 34. spider | 105 | 126 | 29 |
| 35. needle | 61 | 72 | 11 |
| 36. red | 112 | 138 | 38 |
| 37. sleep | 105 | 129 | 34 |
| 38. anger | 99 | 281 | 22 |
| 39. carpet | 106 | 135 | 41 |

(Table 7. continued)

| Stimulus Words | White Children | Adults | Colored Children |
|---|---|---|---|
| 40. girl | 123 | 169 | 43 |
| 41. high | 130 | 120 | 38 |
| 42. working | 127 | 221 | 45 |
| 43. sour | 89 | 91 | 30 |
| 44. earth | 109 | 162 | 33 |
| 46. soldier | 91 | 159 | 25 |
| 47. cabbage | 80 | 126 | 29 |
| 48. hard | 110 | 156 | 44 |
| 49. eagle | 89 | 109 | 29 |
| 50. stomach | 123 | 162 | 31 |
| 51. stem | 103 | 120 | 34 |
| 52. lamp | 63 | 78 | 14 |
| 53. dream | 125 | 185 | 36 |
| 54. yellow | 104 | 149 | 42 |
| 55. bread | 83 | 104 | 23 |
| 57. boy | 159 | 174 | 48 |
| 58. light | 117 | 182 | 39 |
| 60. Bible | 91 | 128 | 23 |
| 62. sheep | 106 | 110 | 20 |
| 63. bath | 71 | 93 | 22 |
| 64. cottage | 80 | 142 | 25 |
| 65. swift | 89 | 127 | 28 |
| 66. blue | 108 | 116 | 26 |
| 67. hungry | 136 | 173 | 23 |
| 68. priest | 92 | 161 | 31 |
| 69. ocean | 69 | 110 | 18 |
| 70. head | 115 | 163 | 28 |
| 71. stove | 57 | 91 | 17 |
| 72. long | 178 | 178 | 39 |
| 74. whiskey | 71 | 152 | 35 |
| 75. child | 115 | 162 | 19 |
| 77. hammer | 76 | 109 | 23 |
| 78. thirsty | 52 | 86 | 11 |
| 79. city | 109 | 131 | 32 |
| 80. square | 122 | 195 | 31 |

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(Table 7. continued)

| Stimulus Words | White Children | Adults | Colored Children |
|---|---|---|---|
| 81. butter | 58 | 101 | 21 |
| 82. doctor | 68 | 151 | 25 |
| 83. loud | 115 | 140 | 26 |
| 84. thief | 86 | 170 | 15 |
| 85. lion | 93 | 137 | 36 |
| 86. joy | 88 | 172 | 23 |
| 87. bed | 72 | 112 | 15 |
| 88. heavy | 109 | 158 | 35 |
| 89. tobacco | 64 | 122 | 18 |
| 90. baby | 104 | 150 | 28 |
| 91. moon | 75 | 110 | 19 |
| 92. scissors | 36 | 181 | 8 |
| 93. quiet | 96 | 167 | 39 |
| 94. green | 96 | 122 | 25 |
| 95. salt | 107 | 146 | 41 |
| 96. street | 119 | 163 | 29 |
| 97. king | 135 | 120 | 26 |
| 98. cheese | 60 | 146 | 26 |
| 99. blossom | 65 | 99 | 13 |
| 100. afraid | 92 | 189 | 24 |

associations, especially with concrete responses, charac-
terizes the free associations of colored children. It
would appear that the causes underlying this deficiency in
total responses are closely related to the causes for the
marked restriction in individual responses.

The total number of different responses for white chil-
dren was 9,183, and their average number of response words
per stimulus word was 102.33, whereas the total number of
different responses for colored children was 5,432, and the
average number of response words per atimulus word was
30.18.

## CONCLUSIONS

The present work contains colored children's frequency
tables for 100 stimulus words. The tables are composed of
the responses of 500 colored school children from ages nine
to 12 inclusive, taken from the fourth, fifth, and sixth
grades. The list of stimulus words contains 90 words from
the Kent-Rosanoff tables and ten from Woodrow and Lowell's
frequency tables. Comparisons were made between the mental
associations of white children and colored children in the
following ways: preferred responses, association types,
individual responses, and total number of responses.

The main points established by this comparison are as
follows:

1. In general, colored children's mental associetions differ substantially from those of white children. The frequency tables for white children could not be used for colored children.

2. A substantial difference exists between white and colored children in the frequencies of various types of associations. The types which occur more frequently with white children than with colored children sre contiguity, similarity, adjective-noun, noun-adjective, cause-effect, and verb-object. The types which occur mors frequently in colored children than in white children are contrast, verb, part-whole, and whole-part.

3. The most outstanding finding in this study is that colored children gave fewer individual responses than the white children gave. This is probably due to the limited expariences of colored children. Limited experisnces result in small vocabuleries and consequently in limited individual responses.

4. White children made a much larger number of different responses than did the colored children. This is also, no doubt, indicative of the limited experiences of colored children.

5. With only nine words are the three most frequent responses the same for both white and colored children.

6. The data revealed no clear evidences of emotionality between colored children and white children. The marked reduction in individual responses does not probably indicate only lower emotionality in colored children, even though individual responses are indications of emotional associations. In fact it may indicate nothing significant about the comparative emotionality of white and colored children.

## ACKNOWLEDGMENT

Since there is very little psychological study on mental associations concerning colored children, the writer is indebted to Dr. O. W. Alm for suggesting this very interesting and enlightening problem. His encouragement and suggestions have been a help throughout the study. The writer wishes to thank all the principals of the schools who gave him permission to give tests to children in their buildings. He wishes also to mention the boys and girls who made this work possible. Without their cooperation this study could not have been worked out.

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