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Children's Association Frequency
Tables

By

HERBERT WOODROW

Assistant Professor of Psychology

AND

FRANCES LOWELL

Assistant in Psychology

University of Minnesota

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CHAPTER I

OBJECT

The primary object of the present investigation is to make a comparative study of the mental associations of children and adults. It is a study in group psychology, one group being that of children and the other that of adults. The study is made by means of association frequency tables.¹ We have compiled such tables from the responses of one thousand school children, of ages nine to twelve, to each of one hundred stimulus words. Since we used the same stimulus words as Kent and Rosanoff,² we have been able to take their adult frequency tables for comparison, and thus draw conclusions from a total of two hundred thousand cases of association.

A secondary object of our study, attained merely by the compilation of the children's association frequency tables, is to secure data which may serve as a standard in the studies of the mental associations of individual children. We believe that the responses of any child to the one hundred stimulus words,

¹ What is meant by association frequency tables is generally known, but should perhaps be fully explained. A word, called the stimulus word, is pronounced to a subject who has been instructed to respond with the first word that the stimulus word brings into his mind. The word responded with is called the reaction word or the response. The same stimulus word is given, say, to a thousand individuals. These thousand individuals will not all respond with a different word, but with one of a comparatively small number of words, a hundred or so. Now a frequency table is one which shows just how often each of these hundred or so words occurred in the one thousand responses. Suppose one half of the thousand subjects responded with the same word, its frequency would be 500. Usually the greater part of the thousand responses will be one of a very small number of words. These will all have a high frequency. On the other hand there are always a number of words found to have been given only a few times. Those given only once, that is, those having a frequency of only one in the frequency tables, are called 'individual' associations.

² Kent, Grace Helen, and Rosanoff, A. J., 'A Study of Association in Insanity'. *Amer. J. of Insanity*, Vol. LXVII, 1910, 1 and 2.

particularly when obtained several times and interpreted understandingly, afford one of the best pictures of his mental constitution that can be quickly obtained. It is in the picture, in the qualitative description, that we see the main value of the free association test,—not in any measurement it may give of the amount of intelligence. When regarded in this light, there is no reason why, in individual work, introspections should not be obtained, nor why association times should not be measured with the stop watch. It would seem, rather, to be imperative to obtain some introspective clues to the explanation of all exceptionally slow or very unusual associations. The frequency table is of value, in such individual study, as indicating what responses are most common, what most children do, and thereby affording a viewpoint from which to judge the individual child. Our various classifications of the data of the frequency tables may also be of value in this connection.

It is true that attempts have been made to use the free association test as a measure of amount of intelligence. The test has had some success in this way and is probably of some value. A children's frequency table will prove invaluable to all such investigations that may be conducted in the future. We repeat, however, that the main value of the association test is not in telling us how much mind but what kind of a mind the child has. It is only as a qualitative test that it deserves the encomiums heaped upon it by so many authors, particularly Woodworth and Wells. The latter refer to the test as having achieved, and being likely to retain, a place "in the foremost rank among the methods of individual psychology,"³ and assert that the results that may be obtained by the use of standard frequency tables give "perhaps the best objective correlate of temperament at present to hand."⁴

By our comparison of children and adults, we shall show that between the child and the adult there exist certain striking differences in mental make-up, differences with which we believe that the psychologist and the teacher of children should be thor-

³ Woodworth, R. S., and Wells, F. L., 'Association Tests,' *Psychol. Monog.*, Vol. XIII, 1911. 57, p. 73.

⁴ *Op. cit.*, p. 74.

oughly familiar. But we shall have nothing to say about how much more intelligent the adult is than the child.

The present study suggests a further use of our children's frequency tables, namely, its use for comparison with similar frequency tables obtained from children of different social status or race or of defective mentality.⁵

⁵ Wreschner writes as follows: - "Darum erweist sich aber das Experiment über Reproduktion und Assoziation als geeignete Unterlage einer angewandten Psychologie, wie kein anderes. Macht doch schon jetzt von ihm ausgiebigen Gebrauch die Sprachforschung, die Psychopathologie, die Jurisprudenz und die Pädagogik, und erkannten wir doch auf Schritt und Tritt, von welcher Tragweite es für die Psychologie der individuellen Differenzen ist. Voraussetzung all dieser praktischen Anwendungen ist aber eine möglichst genaue Kenntnis der Bedingungen, Eigenarten und Formen der normalen Reproduktion und Association." *Ztsch. f. Psychol. u. Physiol. d. Sinnes.*, Ergänzungsband, 3, 1907, p. 554.

CHAPTER II

PREVIOUS WORK

A knowledge of the methods and results of previous investigators of children's associations is indispensable to the proper interpretation and evaluation of the present data. Moreover, while the present work is intended primarily as a study in comparative group psychology, the present frequency tables may be employed by others in the study of individual differences. The success attained in this direction, however, will depend largely upon the user's knowledge of the psychology of association in children, as already established. It seems desirable, therefore, to give a brief résumé of preceding investigations, in so far as they bear upon the present study.

The first careful study of children's associations was published in 1898 by Ziehen.¹ Ziehen used 45 boys of ages 8 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 those 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 representation (*Vorstellung*) which immediately followed the representation awakened by the stimulus word.² 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.³

¹ Ziehen, Th., *Sammlung von Abhandlungen aus dem Gebiete der pädagogischen Psychologie und Physiologie*, Vol. 1, 1899, 6, pp. 66.

² *Op. cit.*, p. 10.

³ "Antwortete das Kind Z. B. auf "Frosch" mit "Laubfrosch," so frug ich, ob das Kind an einem bestimmten Frosch und Laubfrosch gedacht habe.

Ziehen formulated his main problem as follows: Does the association of ideas in the child as compared with the adult, show a preponderance or a 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 (*Allgemeinvorstellung*) which in turn called up another general idea, designated by the response word. He estimates 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 individual idea (*Individualvorstellung*). 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 *toto coelo* from that of the adult.⁴ Adults tend to think in terms of general ideas, children in terms of concrete representations.

Besides this fundamental difference between children and adults, Ziehen mentions several minor differences. Verbal associations occurred but seldom with children, apparently much less often than with adults, and were apt to take the form of word-completion, e.g., post,—card. Rhyme associations occurred very seldom, much more seldom than with adults. The same is true of associations of words commonly connected, e.g., hand,—foot; hope,—love.

und erhielt Z. B. zur Antwort: "ja an den Frosch, den Ring's (eine bekannte Familie) vor 3 Wochen gehabt haben." In anderen Fällen antwortete das Kind, es habe "an alle Frösche" oder "an keinen bestimmten" gedacht u. s. f." *op. cit.*, p. 11.

⁴ *Op. cit.*, p. 32.

Ziehen was followed in his pioneer work by Meumann,⁵ who studied the mental associations of over 800 school children, distributed in 19 classes, in the hope of obtaining criteria of degree of intelligence. He used 4 groups of 12 words each: first, concrete substantives; 2nd, verbs; 3rd, adjectives; 4th, 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 head. The teacher gave a few examples first. With few exceptions, the children readily comprehended the aim of the experiment. Among the 8 year old children, however, there were a few who continually wrote words which stood in no connection with the stimulus words. Meumann 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, Meumann mentions the following tendencies:— 1. The less intelligent more often misunderstand or misinterpret the stimulus word. 2. They more often fail to write down a response. In the case of abstract substantives, they may omit 60 to 70 per cent of the responses. 3. They give a greater number of senseless responses. The word written may be senseless or may stand in no apparent relation to the stimulus word. 4. Their responses show less mental work, or, as we might say, less thought. They take more often the form of mere word changes or rhymes, simple opposites, or words frequently named together, e.g., cat,—mouse. 5. Their responses are more dependent upon the connections established in their school exercises. 6. They are more apt to deviate from the concrete associations characteristic of children and to exhibit an apparent precocity by responding with general and abstract terms. The greater likelihood of opposites in the case of the less intelligent would also have to be included under this heading, since opposites are characteristic of adults. 7. As already noted by Ziehen, their responses are more apt to show

⁵ Meumann, E., 'Intelligenzprüfungen an Kindern der Volksschule'; *Die experimentelle Pädagogik*, Vol. I, 1905, pp. 86-101.

perseveration, of which Meuman distinguishes three kinds. First, the response may consist in the repetition of a previous stimulus or response word. After its first occurrence, such a response stands in no apparent connection with the stimulus word. Second, and more commonly, a stimulus word starts a dominating chain of representations which then determine successive responses independently of the stimulus word. Third, the subject may hold to the same category of response, e.g., a strengthening adjective. This is only an index of unintelligence when the persistent category is not typical of the age in question.

It should be remembered that the data given in support of the above conclusions consist only in occasional illustrations. One of the conclusions which we believe stands in particular need of verification is that the less intelligent children are more apt to give logical opposites.⁶ It should be noted, further, that the above-mentioned differences between the intelligent and unintelligent children are merely differences in the frequency with which certain types of responses are found in the case of groups of such children. It is not established that any of them are reliable indices of the intelligence of a given individual.

Meumann also mentions certain characteristics which he regards as distinguishing younger children from older ones. One might expect these characteristics to be the same as those distinguishing the less intelligent children from the more intelligent. Meumann himself suggests the following important proposition: the symptoms of relative stages in the development of the child's intelligence are at the same time symptoms of the relative intelligence of individuals of like age.⁷ However, the characteristics which Meumann attributes to the more intelligent children, as compared with the less intelligent, are not identical with those which he attributes to the younger children as compared with the older. With the younger children, he says, the logical opposite hardly ever occurs, while, with the 13 and 14 year old children, it may constitute 90 or even 100 per cent of the responses.⁸ The

⁶ *Op. cit.*, p. 91.

⁷ *Op. cit.*, p. 101.

⁸ *Op. cit.*, p. 99.

difference is particularly striking when adjectives are used as the stimulus word. The 8 and 9 year olds, in place of giving the logical opposite, seek mainly a substantive which the adjective given as stimulus word describes, e.g., white,—paper; black,—coal. On the other hand, as already noted, Meumann states that the less intelligent are more apt to give the logical opposite than the more intelligent.

Another alleged exception to the parallel between age and intelligence has already been mentioned, namely, the tendency towards association of general ideas in the less intelligent children and in adults as contrasted with the use of concrete imagery in the case of the normal children.⁹ In view of the importance of these alleged similarities between adults and the more unintelligent children, and the absence of supporting *data*, the matter should evidently be reinvestigated.

Winteler,¹⁰ like Meumann, was interested in association as a possible means of diagnosis of intelligence. He obtained associations from 8 boys, all about 10 years of age, using a list of 40 stimulus words. The list included 25 nouns and 15 verbs and adjectives. Of these 8 boys, 3 were chosen, on the basis of their school work, as the most intelligent of their class, and 4, as the most unintelligent. The eighth boy was supposed to be of intermediate intelligence. Upon classifying the responses, according to their grammatical form, into nouns, adjectives, verbs and adverbs, he found that he could distinguish three reaction types.¹¹ These three types were about evenly represented, two of them by three boys each and the third by two. They showed no relation to the degree of intelligence. One type reacted to substantives mainly with adjectives, to adjectives with substantives, and to verbs with substantives; this is termed the perceptual (*anschaulich*) or describing type. Another type answered to substantives mainly with other substantives, to adjectives with other adjectives and to verbs with other verbs; this is designated the com-

⁹ *Op. cit.*, p. 93.

¹⁰ Wintler, Jr., 'Experimentelle Beiträge zu einer Begabungslehre,' *Die experimentelle Pädagogik*, Vol. II, 1906, pp. 193-207.

¹¹ *Op. cit.*, p. 207.

paring or relating type. The third type is mixed. Those subjects responding largely with adjectives showed considerable perseveration, which Winteler explains as due to a closely limited stock of words.

Wreschner,¹² in the course of his extremely detailed study of association, obtained data on free association with two children, one of $3\frac{3}{4}$ and one of $5\frac{3}{4}$ years of age. He recorded their oral responses to something over 300 words, and compared them with the responses of twenty 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 schema of about forty headings, and a comparison then made of the percentages for adults and children under each heading.¹³ Of course the number of children used, two, is entirely too small to give these percentages any considerable reliability. The investigation of Winteler, referred to immediately above, 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 schema, 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, similars and synonyms, and associations from effect to cause. Association of opposites is by far the commonest form of logical association amongst 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, e.g., snow,—ball; 'speech reminiscences,' e.g., fox,—goose; and a certain class of 'attributive unions,' e.g., mother,—dear. For all of

¹² Arthur Wreschner, 'Die Reproduktion und Assoziation von Vorstellungen,' *Ztsch. f. Psychol. u. Physiol. d. Sinnes., Ergänzungsband*, 3, 1907, pp. 559.

¹³ *Op. cit.*, pp. 285-294.

these sub-types, the percentages were greater for the adults. Taken together, they constituted about a fourth of the adults' associations but only 7 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, e.g., round,—circle. This form of reaction constituted 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, e.g., sand,—strew. This form of reaction constituted nearly a 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 and temporal localizations, e.g., windy,—outside; still,—night. These constituted about one tenth of the children's associations, but only about one thirtieth of the adults'. In all other respects than those mentioned no appreciable differences in association type existed between the adults and the children.

Saling¹⁴ made some experiments on free association with a group of 34 school girls from 7 to 8 years old. The stimulus words were sixty in number and included ten of each of six varieties. The children had to think their reaction-words, and upon a signal from the experimenter to write them upon blanks. Saling compares the data thus obtained with results obtained on adults by Thumb and Marbe.¹⁵ This comparison, made in the form of a table,¹⁶ bears only on one point, namely, whether the most frequent response given to any stimulus word has a greater frequency with adults than with children. The table indicates that the most common response has a higher frequency, that is, constitutes a larger percentage of all the responses, in the case of adults than with children.

¹⁴ Saling, Gertrude 'Associative Massenversuche,' *Ztsch. f. Psychol. u. Physiol. d. Sinnes.*, Vol. XLIX, 1908, pp. 238-253.

¹⁵ Thumb and Marbe, 'Experimentelle Untersuchungen über die Psychologischen Grundlagen der sprachlichen Analogiebildung,' Leipzig, 1901.

¹⁶ *Op. cit.*, Tabelle I, p. 240.

This conclusion is clearly to a large extent due to the peculiar list of words used by Saling. It is noteworthy in the following respects: it is one-third composed of adverbs; it contains no verbs; it includes the names of the numerals one to ten; ten pronouns, and only ten nouns and ten adjectives; and, most striking of all, it is made up almost entirely, with the exception of numerals, of pairs of opposites or coordinates, e.g., father,—mother; brother,—sister; large,—small; old,—young; I,—you; he,—she; here,—there; everywhere,—nowhere; now,—never; this,—that. Both members of each such pair are included in the list of stimulus words. Now the data presented in the present study will show very clearly that such pairs of words as these constitute the type of associations which, above all others, characterizes adults in contradistinction from children.¹⁷ The most frequent response to such words with adults is nearly always the other member of the pair; and it is not surprising that the most frequent responses to such words show a higher frequency with adults than with children. The natural tendency of adults to respond by the opposite or the correlative would no doubt be strengthened by the constant occurrence of opposites in the list of stimulus words. It is clearly the peculiar character of Saling's list of stimulus words which accounts for the very high frequency of the most common or preferred responses. On the average, with adults, the frequency of the preferred response was 56 per cent. The Kent-Rosanoff adult frequency tables, on the other hand, show only one response of a frequency over 56 per cent, while they show an average frequency for the most common response of only 26 per cent.¹⁸

It is evident, from the above considerations, that we are not entitled to generalize Saling's conclusions. With other stimulus words, the frequency of the most favored response might not be as great in adults as in children. The result obtained would clearly depend upon what words were used as stimulus words.

Rusk¹⁹ studied free association in 22 school boys, from 7½

¹⁷ See Chapter VI, p. 84-92.

¹⁸ Cf. Chapter VII, p. 97-98.

¹⁹ Rusk, Robert R., 'Mental Association in Children', *Brit. Journal of Psychol.*, Vol. III, 1909-1910. pp. 349-385.

to 14½ years of age. The stimulus words, thirty in number, were presented visually instead of orally. The instructions used were as follows: "A word will be shown, e.g., dog. When anything comes into the mind, either name it or say 'Now'; then tell as exactly as possible what passed in the mind. Take your own time, but answer immediately the first idea comes into your mind."²⁰ Among the conclusions reached may be mentioned the following:

"The degree of perseverance varies inversely with age and intelligence. The present investigation confirms the results of previous workers on this point."²¹

"The present investigation confirms the statement of Ziehen as to the astonishing definiteness and vividness of the child's imagery which has much the same characteristics as its perceptual experience, viz. vividness and definite spatial and temporal localization: it also supports the general view as to the great predominance of concrete visual imagery over other forms of imagery accompanying the thought processes of the child.

"Children who are best endowed with respect to the various forms of imagery do not, it would appear from the analysis of the introspection here undertaken, necessarily stand highest in school."²²

Reinhold,²³ in 1910, published a children's association frequency table, based on data obtained from 300 school girls with 46 stimulus words. The girls ranged from 7 to 17 years of age, and were distributed in 10 successive classes, 30 in each class. The stimulus words were read to the class, and the children wrote down the first word that came to them. The number of different reaction words given by the 300 children to one stimulus word, was, on the average, 68.1. The average frequency of the most frequent response was about 26 per cent, but varied from 51.7 per cent (thunder,—lightning) to 10.0 per cent (play,—

²⁰ *Op. cit.*, p. 359.

²¹ Cf. Meumann, p. 6 above, conclusion no. 7.

²² *Op. cit.*, p. 385.

²³ Reinhold, Ferdinand 'Beiträge zur Assoziationslehre anf Grund von Massenversuchen,' *Ztsch. f. Psychol. u. Physiol. d. Sinnes.*, Vol. LIV, 1910 pp. 183-214.

child(ren) and understand,—hear). The frequency with which no response was given varied from 1.7 per cent (for *tree*) to 22 per cent (for *understand*). Reinhold studied the variation with age in the percentage (of all the responses) constituted by the most frequent responses. He found no very reliable change in this percentage throughout the 10 different grades.²⁴ It has been mentioned above that Saling found the frequency of the most common responses to be definitely higher with adults than with children. The statement was made that this result would depend upon the words used, a statement that is verified by Reinhold's failure to find more than a mere suggestion of this tendency in comparing children varying in age from 7 up to 17. Reinhold's list of words, consisting mainly of unrelated nouns and verbs, was very different from that used by Saling.

Reinhold makes some interesting observations on the value of the free association test for the diagnosis of intelligence. Dividing each of his ten classes on the basis of school performance into halves, an upper and a lower, he finds no correlation between intelligence and the tendency to give sound associations, that is, associations where stimulus word and reaction word show similarity in sound. This finding contradicts one of Meumann's propositions.²⁵ Reinhold is, in general, skeptical of the value of the free association method for the diagnosis of individual ability. He points out that the reaction type is not always constant, but is easily and extensively modified by slight and unknowable influences.²⁶ For example, a school girl, who upon first testing gave 15 per cent of sound associations, upon second testing gave only 5 per cent, while another gave at first testing only 2 per cent, but upon retesting gave 75 per cent.

Goett²⁷ interested himself mainly in the use of free association tests for the diagnosis of mentally abnormal children, but, for the sake of comparison, studied normal children as well. He

²⁴ *Op. cit.*, p. 184.

²⁵ See p. 6, no. 4.

²⁶ *Op. cit.*, pp. 213-214.

²⁷ Goett Theodor, 'Assoziationsversuche an Kindern,' *Ztsch. f. Kinderheilkunde*, Originale 1, 1911, pp. 241-345.

studied individually and by the oral method, using a list of 100 stimulus words, 52 children, between 8 and 14 years of age, of whom 24 were normal, 12 not quite normal, and 16 feeble minded, epileptic or hysterical. He did not ask for introspections as he thinks them unreliable when obtained from children.

He gives first his results with normal children. He states that the reaction words themselves, regarded as such, and without respect to their relation to the stimulus words, have little interest. However, he notes the not infrequent presence in normal children of reactions by phrases, of faulty reactions, including both cases of no response and senseless response, and of perseveration, noting particularly the perseveration of prefixes, e.g., *un* and of suffixes, e.g., the German *ig*. As regards the relation of the responses to the stimulus words, Goett distinguishes between inner associations, or associations by conceptual relationship, e.g., ocean,—sea, horse,—animal, and outer associations, or associations by spatial and temporal contiguity, e.g., ocean,—ship, horse,—wagon.²⁸ Three-fourths of the children's reactions are found to be inner associations. Within the inner associations, he distinguishes three types, which he calls the predicative, the coordinating (including the contrasting) and the word compounding. The latter two types stand in a relation of opposition to the predicative. Like Jung, he defines the predicative associations as "all judgments, characteristics or activities that are in any manner related to the stimulus word as subject or object."²⁹ The following are illustrations of this type: glass,—brittle; father,—good; good,—father; tooth,—protruding; and sing,—song. This class constitutes 41 per cent of all the children's responses, or over half of the inner associations. For children under 12 years they constitute 50 per cent of all associations, while for children over 12 years they form only 33 per cent. A further very interesting finding is that the percentage of these predicative associations varies with the social class to which the children belong.³⁰ We reproduce the figures:

²⁸ *Op. cit.*, p. 266.

²⁹ *Op. cit.*, p. 272.

³⁰ *Op. cit.*, p. 273.

	Children under 12	Children over 12
'Proletariate'	60%	40%
'Better circles'	30%	25%

With psychopathic children, Goett finds the free association test to be of decided diagnostic value. He mentions several features which he regards as characteristic of the associations of the feeble-minded. As compared with normal children, they are slower; they show more perseveration; they give a larger percentage of predicative reactions; they react more often with phrases instead of a single word, and persist in this form of reaction in spite of instructions to react with a single word.³¹ All the features which Goett mentions as differentiating the feeble-minded from the normal, he also mentions as differentiating the younger children from the older. On the other hand, he finds that rhymes, word-completions, citations and simple contrasts very seldom occur with the feeble-minded. In only one of his cases, and that a case of moral rather than intellectual defect, did he find instances of association by contrast.³² These findings are in opposition to those of Wimmer,³³ and are interesting in connection with the comment above regarding Meumann's conclusions.³⁴

Rosanoff and Rosanoff³⁵ 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?"³⁶ Using the Kent-Rosanoff list of 100 words, they obtained the responses of 300 school children, twenty-five of each age from 4 to 15 inclusive.

"In making the tests the technique as originally presented

³¹ *Op. cit.*, p. 327.

³² *Op. Cit.*, p. 324.

³³ Wimmer, A., 'Über Assoziationsuntersuchungen, besonders schwachsinniger Kinder,' *Monatsschr. f. Psych. u. Neurol.*, Vol. XXV. 1909. pp. 169-268.

³⁴ P. 7.

³⁵ Rosanoff, Isabel R., and Rosanoff, A. J., A Study of Association in Children,' *Psych. Rev.*, Vol. XX, 1913, 43-89.

³⁶ *Op. cit.*, p. 43.

could not in all cases be followed exactly; the best way seemed to be by asking 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 some other word would be selected: '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."

"Many of the stimulus words often evoked either no response at all or only some such response as 'I don't know that' or 'Mamma 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 reducing the number of failures of reaction in every case to a practical minimum."³⁷

The association records obtained from the children were analyzed in accordance with the Kent-Rosanoff classification. Any response occurring only once in one of the Kent-Rosanoff frequency tables for adults is regarded as an individual adult association, unless it is a grammatical variant or derivative of some other word in the table, in which case it is called a 'doubtful' reaction. The percentage of individual reactions in the Kent-Rosanoff adult frequency tables is 6.8. This means that to each of their stimulus words, there occurred, excluding doubtful reactions on an average 68 responses with a frequency of only 1. Now the data obtained with children were classified according to the same rubrics, using the adult frequency tables as a standard.

Any reaction given by the children which did not occur at all in the adult frequency tables was classified as individual. This procedure is of value only in shedding light on the particular problem asked by Rosanoff and Rosanoff, as to when the associational tendencies of children become like those of adults. It will not determine whether children give more individual associations than adults. An individual association in the case of an adult means an association not given by other adults. That it may not be given by children does not make it an individual asso-

³⁷ *Op. cit.*, p. 44.

ciation. For example, the association, stomach,—organ, has a frequency of 81 in the Kent-Rosanoff table, and the association, hand,—foot, a frequency of 204. Neither of these associations occurs at all in our children's tables. Now for adults, these associations could not be classified as individual. Many such illustrations could be given.

Similarly, an individual association in the case of a child should mean an association not given by other children, and should not be called individual merely because it does not occur with adults. We could give a long list of associations which have a frequency of 10 or over in our children's tables but which do not occur at all in the Kent-Rosanoff tables, and which would, consequently, have to be classed as individual associations if we followed the procedure of Rosanoff and Rosanoff. The following are a few illustrations, with the frequencies found in our children's tables: bread,—slice (13); boy,—trouser (16); moon,—face (13); street,—lamp (41); spider,—spin (10); beautiful,—doll (30); red,—lantern (13); working,—clothes (15); sour,—cream (52); loud,—cry (29); and carpet,—dirty, (35). Any procedure which classifies such children's associations as individual, merely because they are not found in the Kent-Rosanoff tables, even though it may be of aid in answering some particular question, is evidently far from satisfactory.

Even had Rosanoff and Rosanoff compiled children's frequency tables from their data, which they did not, it would have been impossible to reliably compare adults and children with respect to individual associations, because of the difference in the size of the groups. A frequency of one in a total of one thousand is a different thing from a frequency of one in a total of three hundred. The natural expectation would be that as the size of the group increased the absolute number of individual reactions would increase but that the percentage of such would decrease. This would be the natural result because of the principle noted by Saling that there is a tendency among normal persons to respond to any stimulus word by one or another of a fairly small group of words.³⁸ The impropriety of comparing

³⁸ *Op. cit.*, p. 14.

percentages from association frequency tables based on widely different numbers was fully stated by Reinhold³⁹ and proved statistically by Dauber.⁴⁰

Passing from the consideration of methods to that of conclusions, we find that the Rosanoffs state as their main conclusion that, "as compared with adults, children, especially those under eleven years of age, give a larger number of doubtful and individual reactions and of failures of reaction, there being a corresponding reduction of common reactions."⁴¹ They state further that, "All the characteristics by which test records of children differ from those of adults are most marked in the youngest children, grow less marked with advancing age, and become practically obliterated at the age of eleven years." Now the Rosanoffs have compared children and adults only with respect to the following characteristics: individual and doubtful reactions and failures of response. Their statement, then, to the effect that at the age of eleven years *all* characteristics of association in children are the same as in adults is evidently much too broad. We emphasize this point, because we believe that the characteristics in which the Rosanoffs have compared adults with children so far from being all-inclusive, are, in fact, comparatively unessential, technical⁴² matters,—what Goett calls the 'by-products'

³⁹ "Wenn man die Zahl der Versuchspersonen immer weiter vermehrt, tritt infolge der Beschränktheit des Sprachschatzes und auch schon infolge der Beschränktheit der Anzahl der bekannteren Wörter schliesslich der Fall ein, das es den neu hinzukommenden Versuchspersonen unmöglich oder wenigstens schwierig ist ein neues Reaktionswort zu nennen. Sie werden infolgedessen genötigt sein, um so mehr übereinstimmende Wörter zu nennen, je mehr die Zahl der Versuchspersonen wächst. Es ist daher nicht richtig, wie Wreschner es tut, die Zahl der bei einem Reizwort vorkommenden verschiedenen Reaktionswörter in Prozenten anzugeben." *Op. cit.*, p. 186.

⁴⁰ Dauber, Johann., 'Ueber bevorzugte Assoziationen und verwandte Phänomene,' *Ztsch. f. Psychol. u. Physiol. d. Sinnes.*, Vol. LIX, 1911, Table 8, p. 196.

⁴¹ *Op. cit.*, p. 88.

⁴² Whipple writes as follows: The author (Whipple) is inclined to believe that here, as in not a few other instances in which children differ from adults in psychological tests, what we are really bringing to light is an inability of the children to understand the instructions or disinclination to follow them if they are understood."—'Manual of Mental and Physical Tests,' Part II, 2d ed., 1915, p. 62.

of the association experiment.⁴³ We should say that the main comparison, and the only one which could really utilize all the data of frequency tables, was a comparison of the response words of children with those of the adults, to see whether these responses were the same and to what extent their frequency was the same. This the Rosanoffs have not attempted.

In conclusion, we shall mention three recent studies designed to show the value of free association experiments in the diagnosis of feeble-mindedness and the determination of mental age. These are the studies of Eastman and Rosanoff, Otis, and Römer.

Eastman and Rosanoff,⁴⁴ after a study of 253 subjects selected on the basis of backwardness in studies as rated by teachers, conclude that states of arrested mental development present certain fairly characteristic associational tendencies. These tendencies are characterized mainly by failures of reaction, non-specific reactions, e.g., person, man, article, nice, use, etc., and certain types of individual reactions.⁴⁵

Otis⁴⁶ studied 132 mentally defective children and 202 normal children by the Kent-Rosanoff association test. In the case of normal children, an unusual variation in procedure consisted in testing two children at the same time by the oral method. It is said, however, that the type of response was not affected by this method; that if a child tended to reply by associations of a certain type, he would continue to do so even though his neighbor were replying by associations of a different type. It is said, also, that the general result was not affected by the personality of the examiners, two of whom cooperated in giving the tests. Otis distinguishes five types of response,⁴⁷ as follows:—(I) Repetition of stimulus. If 50 per cent or more of a child's reactions

⁴³ Goett, Th., 'Associationsversuche an Kindern,' *Ztsch. f. Kinderheilkunde*, Originale 1, 1911, p. 258.

⁴⁴ Eastman, Frederic C., and Rosanoff, A. J., 'Association in Feeble-Minded and Delinquent Children,' *Amer. J. of Insanity*, Vol. LXIX, 1912, pp. 125-141.

⁴⁵ *Op. cit.*, p. 141.

⁴⁶ Otis, Margaret, 'A study of Association in Defectives,' *Journ. of Educ. Psychol.*, Vol. VI, 1915, pp. 271-288.

⁴⁷ *Op. cit.*, p. 275.

are the repetition of the stimulus word, the child belongs to this type. (II) Non-logical. This means that words are given at random without connection with the stimulus word. (III) Sound reactions. The reaction word is connected by sound with the stimulus word. It may be either a word or neologism. (IV) Reaction consists of more than one word. This may be a noun with modifier, a phrase or a complete sentence. (V) Reaction one word, normal type. At least 50 per cent of these reactions must be found in the frequency tables of Kent and Rosanoff. Type I (repetition of stimulus word) is common in normal children of 4 or 5 years of age and in defectives of 2 to 6 years mental age. Type II (non-logical or incoherent) occurs in normal children of 4 to 8 years of age, and in defectives from 3 to 5 years of age. It is commonest in normal children of 5 years. Type III (sound reactions) appears sporadically. Type IV (reaction consists of more than one word) occurs in normal children from 4 to 8 years of age, and in defectives from 4 to 10 years of mental age. Type V (reaction one word, normal type) occurs in both normal and defectives as early as the age of 4 but is not established as the prevailing type much before the age of eight.⁴⁸

Our comment upon this work of Otis, as upon that of Rosanoff and Rosanoff, would be that it deals merely with by-products of the association test. From our viewpoint, the main thing she establishes, so far as the psychology of association is concerned, is that children under 8 are too young for the Kent-Rosanoff test. We would also criticize strongly the use of the Kent-Rosanoff adult tables for the determination of the normality of children's responses (see Type V).

Römer⁴⁹ is interested mainly in the use of the favorite, or most frequent, responses as a possible means of the diagnosis of feeble-mindedness. He obtained free association responses by the oral, individual method from 120 mentally retarded children, children of the *Hilfschule* of Würzburg, between the ages of 7.3

⁴⁸ *Op. cit.*, p. 282.

⁴⁹ Römer, Fritz, 'Associationsversuche an geistig Zurückgebliebenen Kindern,' *Fortschritte d. Psychol. u. ihrer Anwendungen*, Vol. III, 1914, pp. 43-101.

and 15.6 years. For comparison, he obtained data by written class responses from 441 normal, school children from 7 to 14 years of age. His conclusions bear not only on the favorite responses, that is, those of highest frequency, but upon all responses of a frequency over one, which we may designate common responses. He finds that with retarded children the favorite responses are different than with normal children, and that, except in cases where the stimulus word is a numeral, their frequency is less. The frequency of the favorite responses increases with the chronological age of the normal children and with the mental age of the retarded children. It will be remembered that Reinhold did not find much regularity in the relation between the frequency of the favorite responses and age, but Römer thinks that it is definite enough to give value to free association as an intelligence test. He reckons, for each child, what percentage of his reactions consists of favorite responses. He then calculates for children of each age what percentage of favorite responses is exceeded by three fourths of them. This latter percentage he calls the minimal normal percentage of favorite reactions. He then observes that the great majority of his retarded children fall below the minimum for normal children of the same chronological age, but equal or exceed that of normal children of the same mental age.⁵⁰

As regards the form of the associations of retarded children, Römer notes a very frequent occurrence of sound associations, of word completions, of the formation of new words, and of perseveration.⁵¹

In justice to the authors mentioned in the preceding review, it should be noted that reference has been made only to work which bears directly upon the problem of the present investigation, that is, upon the characteristics of free association in children. We have taken no account of work that has been done on controlled association, in which the response has to be of a certain category, nor have we discussed the somewhat conflicting findings on association time. On the latter point, however, a

⁵⁰ *Op. Cit.*, pp. 100-101.

⁵¹ *Op. Cit.*, p. 99.

few words should be added, though it is unnecessary to attempt a detailed history.

By association time, is meant the time (usually measured by a stop watch in fifths of a second) elapsing from the pronouncing of the stimulus word until the occurrence of the subject's response. With unpracticed adults, the median association time is usually somewhere between 6 and 15 fifths of a second. With practice, this time tends to decrease towards a limit of 6 fifths of a second.⁵² Now with children of 9 to 12 years of age, the association time is on the average longer than with adults, but at the same time very irregular. We have, also, noted enormous individual variations in children's association time. In spite of the fact that association time is unquestionably greater in children than adults, it has been hard to establish any reliable correlation in children between association time and age, mental or chronological.

In the case of adults, when any association requires considerably longer than the average association time of the individual, this association has unusual significance. It has been shown that such lengthened times are often due to the stimulus word being connected with strongly emotional complexes. Even in adults, however, there are other factors than emotional connections which tend to lengthen the free association time. On this point we may well quote from Wells.

"The free association time is exactly what its name implies, a measure of associative freedom. This involves a freedom of presentation, of selection, of expression. We obtain uniformly short association times in those individuals in whom all these processes are comparatively free. Where longer times are found, obstruction of some sort is indicated. . . . This is as far as the unsupported association time will carry one. It remains then to become acquainted with the nature of the obstruction. Where it is found, it must not be incontinently set down to emotional factors, but the roles of suppression, indecision, and the like, must be carefully compared and weighed by the best avail-

⁵² Wells, F. L., 'Practice Effects in Free Association,' *Amer. J. of Psychol.*, Vol. XXII, 1911, p. 13.

able means. Then only do the differences in association time assume their complete significance for the test, which is the most searching of all psychological experiments, and gives more coercively than all others, a paradigm of the subject's mental habits."⁵³

There is little data on the causes of lengthened association times in children, but it seems probable that they are so very frequently connected with lack of familiarity with the stimulus word or with inability of the stimulus word to call up any associated word, that they have not the same value as with adults.

In conclusion, we may summarize briefly the present status of our knowledge of children's associations as compared with those of adults. Only two investigators have undertaken any systematic comparison of the association types of children with those of adults. These are Ziehen and Wreschner. Ziehen's main result, which is very important, consists in the determination that children make much greater use of concrete images and much less use of abstract ideas than do adults. Wreschner arrives at a number of interesting differences in association type between children and adults, but he used only two children, the oldest of whom was only $5\frac{3}{4}$ years of age.

In additions to the comparisons of Ziehen and Wreschner concerning association types, we have those of Saling and of Rosanoff and Rosanoff. Saling compared her results in children with those of Thumbe and Marbe and found that the most frequent response had a higher frequency with adults than with children. We have pointed out that this result was likely due to the peculiarities of the list of stimulus words used. Our own investigation emphatically fails to support the general validity of Saling's conclusion. Rosanoff and Rosanoff conclude that children give more individual associations than adults, but we have shown that their procedure was not capable of throwing any light on such a matter, but merely established that children's associations are different from those of adults. It does not tell us *how* they are different.

⁵³ Wells, F. L., 'Some Properties of the Free Association Time,' *Psychol. Rev.*, Vol. XVIII, 1911, p. 23.

CHAPTER III

PROCEDURE

I. Oral and Written Responses.

The review of previous work in the preceding chapter has shown that various procedures have been used by different investigators. All these procedures agree, however, with the possible exception of Ziehen's and Rusk's, in that they call upon the subject to respond with the very first word called up by the stimulus word. The stimulus word has nearly always been given orally and the response either written or spoken, written when groups of children were used and spoken when the children were taken individually. In most of the more extensive investigations of children's associations, the children have been school children, who were taken in classes; and in such cases, the responses have been written. Written responses were used by Meumann, Saling and Reinhold. Römer used written responses with his normal children and oral responses with his mentally retarded children with whom he compared them.

So far as can be observed from the results reached, it matters little whether one uses the oral or written method. The main difference seems to be that with the written method cases of no response are more frequent, though the number of such obtained with the oral method depends greatly upon details of the procedure, such as the time allowed for a response and the patience, manner, suggestion and urging of the experimenter. The written method commends itself in statistical investigations because of the great saving in time and the greater uniformity of conditions. If a child hesitates, there is no extra waiting and no suggestive questioning,—no tendency to give him the word a second or a third time. We have, consequently, used the written method in obtaining data for the present frequency tables.

Since, however, the Kent-Rosanoff adults' tables were obtained by the individual oral method, we have checked up our results by

compiling additional frequency tables for the first nine words from data obtained individually, by the oral method, from a thousand additional children. The results obtained by the oral method are given in full in our children's frequency tables, the frequencies obtained orally being distinguished from those obtained in writing by being in parentheses.

It does not require more than a cursory examination to see that in general the written and oral results run parallel. The same differences exist between adults and children whether we use the oral or the written data,—at least so far as the conclusions of the present monograph are concerned. One need not be surprised that in particular responses great discrepancies exist between the oral and written results. One must keep in mind the unreliability of the obtained frequencies. If one should compile another adult frequency table and compare it with that of Kent-Rosanoff, it would be very surprising if marked discrepancies were not found. Now it is very hard, without making certain questionable assumptions, to calculate the probable errors of the frequencies obtained in these tables. We have calculated, however, that less than 20 per cent of the discrepancies between our oral and written results can be reliably regarded as due to anything else than errors of sampling. On the whole, the oral and written results agree to a sufficient extent to indicate that the differences which are later pointed out to exist between children and adults are independent of details of the procedure,—that they represent real differences in mentality and not differences due to technique. To establish this proposition beyond dispute, however, we present in Chapter IX, detailed comparisons of the results obtained orally and in writing.

2. Instructions.

The instructions were essentially the same whether we used the oral or written method. In using the oral method, the instructions were given to the entire class. The children were then sent out one at a time into another room where, without further instructions, they were tested individually. It has been the experience of previous investigators that children need some illus-

tration of what is wanted in the test. As the illustrations given may have a strong suggesting influence, it is important that they should be given very carefully and be accurately recorded. We wrote out our instructions beforehand. They were given as follows, an eraser first being taken from the chalk tray and held up before the class:

"If I were to ask you for the very first word that comes into your minds when I hold up this eraser, some of you would probably say, 'chalk',—'blackboard',—'write',—or 'school',—while others might think of the color, 'red', or 'blue'; or of the material of which it is made, as, 'felt', or 'wood'. Still others of you might remember that just before recess or noon you worked arithmetic on the blackboard, and that your work had to be erased before you could be dismissed,—and so to you, the sight of an eraser might suggest the word 'play',—'home',—'dinner',—or 'recess'.

"Now let us take another word, and I'll give you a quarter of a minute, by this stop watch, to think before raising your hands. What would you think of first if I said 'clock'? (Fifteen seconds allowed) Ready."

Instantly hands go up, and the responses are called for. The variety of responses serves well to illustrate what is wanted, and inspires confidence in the pupils. It also gives the experimenter a chance to correct any who reply with a phrase in place of a single word, or who merely repeat the stimulus word.

After this, instructions were continued, exactly as follows, for the written responses, and with the obviously necessary changes for the oral:

"What you are to do now, is this. I will give you a large number of words, but instead of telling me what they make you think of, I want you to write on some blanks I have here, the *very first* word that comes to your minds when I give you a certain word,—such as 'clock' that we just talked about."

Blanks, already ruled, are then passed, and the instructions for writing are given:

1. Write just one word on each blank.
2. That one word must be the very first word you think of.
3. Never write the word I give, for you will not have time.

4. If you do not think of anything when I give a word, leave blank the line on which it should have been written.

5. If uncertain how to spell a word, spell it by sound.

Just before beginning the experiment the following questions were asked, to be answered in chorus.

(1) Are you going to write the word I pronounce? (No.)

(2) How many words are you going to write on each blank? (One.)

(3) If you should think of two or three different words, which one would you write? (The first.)

3. Choice of Stimulus Words.

As we desired to compare our results with those of Kent and Rosanoff, we naturally used the same stimulus words. The data obtained by Rosanoff and Rosanoff had already shown, however, that some of the words were too hard for children. This was shown by the large number of failures to respond to some of the words. We accordingly added twenty words which seemed more appropriate for children, so that we worked with a list of 120 stimulus words. The words added were the following:—fun, school, ice, dog, friend, orange, mouse, finger, circle, kiss, bird, money, laugh, garden, ghost, flag, milk, pencil, stork, and candy. Of the 100 Kent and Rosanoff words, there were only ten, however, that gave over 20 per cent of failures to respond. We decided, therefore, to reject only those ten words and to use the results of only ten of our twenty new words in their place. Our frequency table, consequently, consists of one hundred words, ninety of which are identical with those of Kent and Rosanoff. Our comparisons of adults and children will be limited of course to these ninety words. The remaining ten Kent-Rosanoff words we regard as too unfamiliar to children to allow of satisfactory results.

The words rejected and substituted were the following:

Kent-Rosanoff Words Not Used	New Words Substituted
12. mutton	fun
13. comfort	school
19. command	candy
32. citizen	stork
45. trouble	garden
56. justice	flag
59. health	laugh
61. memory	milk
73. religion	ghost
76. bitter	friend

Of the ten Kent-Rosanoff words rejected, seven were found by Rosanoff and Rosanoff to give the largest number of failures of response, and the remaining three were also found by them to give failures comparatively often.¹ Since the words rejected by us were those which we found to give the largest number of failures of response, there is substantial agreement here between our results and those of Rosanoff and Rosanoff. In our children's frequency tables we have given the stimulus words the same numbers they have in the Kent-Rosanoff tables, and substituted our ten new words for theirs in the order indicated above.

4. Treatment of Failures of Response.

When it came to comparing children with adults, the presence, in the case of the children, of a large group of failures of response with most of the stimulus words created something of a problem. In the Kent-Rosanoff adult tables, there are no cases of no response. It seemed improper to compare frequencies based on 1,000 adult responses with frequencies based on, say 900, children's responses. What we did, was to take enough additional responses to total one thousand actual responses, not including failures to respond. In order to have the material for this, we used 200 additional children, and, after arranging their blanks in haphazard order, counted down as far as necessary to get a number of responses equal to the number of failures of response with the stimulus word in question. We proceeded similarly with the oral data, filling in failures of response from

¹ *Psych. Rev.*, Vol. XX, 1913, Table III, p. 47.

additional oral data. Our children's frequency tables are thus made up on the basis of one thousand actual responses.

These additional responses, substituted for the failures of response, we usually found to consist largely of the same words already obtained as responses, but they included always a number of new responses. That this filling-in procedure is not open to any material objection appears evident from the comparison we have made of the frequency tables obtained by the oral method, with which the number of failures of response was quite small, and those obtained by the written method. In general, then, it is probable that if the responses *had* been obtained from those children who did not respond, their responses would not differ strikingly from those of any other equal number of children.

The number of failures of response in one thousand children for each of the 100 stimulus words is given in the accompanying table. The data for the oral responses are given in italics.

TABLE SHOWING NUMBER OF FAILURES OF RESPONSE TO EACH STIMULUS WORD

1. Table	(11) 38	26. Wish	122	51. Stem	65	76. Friend	174
2. Dark	(28) 124	27. River	18	52. Lamp	22	77. Hammer	34
3. Music	(16) 22	28. White	81	53. Dream	108	78. Thirsty	92
4. Sickness	(33) 90	29. Beautiful	39	54. Yellow	49	79. City	109
5. Man	(60) 73	30. Window	21	55. Bread	38	80. Square	184
6. Deep	(36) 62	31. Rough	127	56. Flag	63	81. Butter	79
7. Soft	(37) 87	32. Stork	82	57. Boy	87	82. Doctor	91
8. Eating	(11) 61	33. Foot	97	58. Light	90	83. Loud	187
9. Mountain	(73) 46	34. Spider	111	59. Laugh	117	84. Thief	77
10. House	60	35. Needle	37	60. Bible	70	85. Lion	79
11. Black	102	36. Red	115	61. Milk	25	86. Joy	107
12. Fun	65	37. Sleep	78	62. Sheep	83	87. Bed	31
13. School	0	38. Anger	109	63. Bath	39	88. Heavy	141
14. Hand	102	39. Carpet	66	64. Cottage	23	89. Tobacco	43
15. Short	175	40. Girl	120	65. Swift	44	90. Baby	92
16. Fruit	44	41. High	98	66. Blue	58	91. Moon	97
17. Butterfly	112	42. Working	118	67. Hungry	103	92. Scissors	29
18. Smooth	161	43. Sour	107	68. Priest	114	93. Quiet	114
19. Candy	59	44. Earth	97	69. Ocean	38	94. Green	66
20. Chair	89	45. Garden	41	70. Head	126	95. Salt	172
21. Sweet	109	46. Soldier	39	71. Stove	24	96. Street	59
22. Whistle	100	47. Cabbage	57	72. Song	89	97. ping	117
23. Woman	123	48. Hard	175	73. Ghost	149	98. Cheese	65
24. Cold	124	49. Eagle	42	74. Whiskey	83	99. Blossom	59
25. Slow	172	50. Stomach	95	75. Child	87	100. Afraid	92

5. The Selection of the Children.

The children used in this investigation were all from 9 to 12 years of age, inclusive, and in either the 4th or 5th grade. Moreover, no children of 12 in the 4th grade were included. The children were therefore normal children. The number of children of each age composing the one thousand children used in

the written work was as follows: 9 yrs., 236; 10 yrs., 327; 11 yrs., 293; 12 yrs., 144. The two hundred children whose responses were used to fill in cases of no response were distributed somewhat the same, as follows: 9 yrs., 40; 10 yrs., 71; 11 yrs., 56; 12 yrs., 33.

Of course, it would be desirable to have a frequency table for each different age, or for as many different ages as possible. We believe it unlikely, in view of the enormous labor of compiling such tables, that any individual would undertake to compile several of them. It was thought that the four ages in question might be fairly satisfactorily grouped together. We have, however, tabulated the results for the different ages separately. Data as regards the most frequently given responses are given in Chapter V. As will be seen, the agreement for the four ages is marked. It extends throughout the whole of the frequency tables. Compared with the differences between children and adults, the differences between 9 and 12 year old children are very slight.

There were several reasons which influenced us to use the ages of 9 to 12. It seemed to us that children of 8 or under were really too young to carry out the directions that go with the free association test. We were confirmed in this opinion by the study of Otis, which appeared while we were carrying on our work.² On the other hand, the results of Meumann and, to some extent, perhaps, those of Rosanoff and Rosanoff, suggested that, beginning at the age of 12 to 13, the associative tendencies of children begin rapidly to approach those of adults. Moreover, we had to consider that children in grades lower than the fourth have hardly sufficient control over the process of writing to be able to write their responses, and 9 years is the youngest age occurring with any considerable frequency in the fourth grade.

The children were all Minneapolis school children, and the tests were all given in the fall of 1914. Ten different schools were included, scattered in various sections of the city. In each school, four classes were used, the B 4th and A 4th, and the

² See our account of 'Previous Work', Chapter II, p. 19-20.

B 5th and A 5th. The question might now arise whether results obtained in one city are as truly representative of the population in general as are the Kent-Rosanoff results obtained in various places in the East. We believe that they are fully as representative, because nearly all children of the ages we used are in school and therefore families of all classes and occupation are represented in about the right proportion. However, it may be well to keep in mind that these children are all *city* children and to be on the lookout for local influences. To the word river, we obtained the response Mississippi (which flows through Minneapolis) seventeen times and the name of no other river more than once. The Kent-Rosanoff results show just as much local color however, since to the word river they obtained the response Hudson thirty-three times, East, four, Mississippi, eight, and no other river more than once.

The children were of nearly all the nationalities commonly represented in the United States. They were asked to write the nationality of their parents upon the back of their blanks. The data obtained are shown in the following table:

NATIONALITIES

123 American	12 German-Swedish
1 Armenian	1 Greek
6 Austrian	67 Irish
1 Austrian-American	17 Irish-American
1 Austrian-Servian	2 Irish-Bohemian
24 Bohemian	1 Irish-Canadian
1 Bohemian-American	1 Irish-Chinese
1 Bohemian-Norwegian	13 Irish-English
3 Canadian-American	1 Irish-German-English
1 Danish	1 Irish-Norwegian
2 Danish-German	1 Irish-Polish
3 Danish-Norwegian	3 Irish-Swiss
1 Dutch	8 Italian
3 Dutch-American	1 Italian-English
3 Dutch-Swedish	3 Jewish
33 English	68 Norwegian
7 English-American	9 Norwegian-American
1 English-Bohemian	3 Norwegian-English
1 English-Swedish	.. 1 Norwegian-Scotch-Irish
1 English-Swiss	23 Norwegian-Swedish
5 Finn	46 Polish
30 French	1 Polish-Russian
4 French-American	3 Polish-Slavonian
1 French-Bohemian	34 Russian
1 French-Dutch	10 Scotch

15	French-German	10	Scotch-American
11	French-Irish	6	Scotch-English
3	French-Norwegian	1	Scotch-German
5	French-Scotch	17	Scotch-Irish
1	French-Scotch-Irish	1	Scotch-Norwegian
3	French-Swedish	2	Scotch-Swedish
90	German	3	Scotch-Welsh
20	German-American	19	Slavonian
4	German-Bohemian	114	Swedish
1	German-Canadian	11	Swedish-American
1	German-Dutch	1	Swedish-Danish
1	German-Icelander	1	Swedish-French-German
17	German-Irish	1	Swedish-Irish
11	German-Norwegian	1	Swiss-American
14	German-Polish	8	Syrian
1	German-Roumanian	1	Welsh-American
1	German-Russian	1	Welsh-German
3	German-Scotch	1	Welsh-Swedish
11	German-Scotch-Irish		

The thousand children given the oral tests were selected from the same ages and grades as those used in the written work, but from ten other schools. No record was kept of their nationality.

6. Classification and Comparison.

The question we have asked ourselves is, to what extent do children give the same responses as adults. The most complete answer to this question consists in the complete adults' and children's frequency tables. So far as possible, however, it is desirable to summarize the points of agreement and disagreement. To do this, it is necessary to study the tables from various points of view and to classify the results in various ways. The data of the frequency tables thus worked over are presented in Chapters VI to VIII.

In Chapter VI, we have attempted a somewhat elaborate comparison of children's and adults' associations according to association type. Chapter VII gives a comparison of the three most frequent responses of children and adults. In Chapter VIII, the children are compared with adults as regards the total number of responses and the number of individual responses.

The children's association frequency tables, which constitute our fundamental data, are given in Chapter IV, followed in Chapter V, by a study of the variation in the preferred reactions within the ages included in our study. In Chapter IX, we show that all the differences which we find to exist between children and adults hold whether we use the written or oral responses.

CHAPTER IV

CHILDREN'S FREQUENCY TABLES

The following tables show the frequency with which was given each of the responses to each of our 100 stimulus words. In the case of the first 9 stimulus words, for which responses were obtained orally as well as in writing, the frequencies for oral responses are given in parentheses. For all the other stimulus words, written responses alone were obtained. The total number of responses given for each stimulus word is one thousand, except in the case of the first 9 words, where it is two thousand, i.e., one thousand written, and one thousand oral responses.

For convenience in reference, we give a list of the stimulus words in alphabetical order. The order in which the list was read to the children is indicated by the numbers before the words, which correspond with the Kent-Rosanoff numbers, except in the 10 cases where we have substituted a new word in place of the Kent-Rosanoff word. Under the column headed 'Page' is given for each stimulus word the page on which may be found its frequency table.

STIMULUS WORDS

	PAGE		PAGE		PAGE		PAGE
100. Afraid ...	71	49. Eagle ...	54	85. Lion ...	66	18. Smooth ...	43
38. Anger ...	50	44. Earth ...	52	72. Long ...	61	7. Soft ...	38
		8. Eating ...	38	83. Loud ...	65	46. Soldier ...	53
90. Baby ...	67	56. Flag ...	56	5. Man ...	36	43. Sour ...	52
63. Bath ...	58	33. Foot ...	48	61. Milk ...	58	34. Spider ...	48
29. Beautiful	47	76. Friend ...	63	91. Moon ...	68	80. Square ...	64
87. Bed ...	66	16. Fruit ...	42	9. Mountain	39	51. Stem ...	54
60. Bible ...	58	12. Fun ...	41	3. Music ...	35	50. Stomach	54
11. Black ...	40					32. Stork ...	48
99. Blossom ..	70	45. Garden ...	52	35. Needle ...	49	71. Stove ...	61
66. Blue ...	59	73. Ghost ...	62	69. Ocean ...	60	96. Street ...	69
57. Boy ...	56	40. Girl ...	50			21. Sweet ...	44
55. Bread ...	56	94. Green ...	68	68. Priest ...	60	65. Swift ...	59
81. Butter ...	65						
17. Butterfly	42	77. Hammer .	63	68. Quiet ...	68	1. Table ...	34
		14. Hand ...	41			84. Thief ...	65
47. Cabbage ..	53	48. Hard ...	53	36. Red ...	49	78. Thirsty ..	64
19. Candy ...	43	70. Head ...	61	27. River ...	46	89. Tobacco ..	67
39. Carpet ...	50	88. Heavy ...	67	31. Rough ...	47		
20. Chair ...	43	41. High ...	51	95. Salt ...	69	74. Whiskey ..	62
98. Cheese ...	70	10. House ...	40	13. School ...	41	22. Whistle ..	44
75. Child ...	62	67. Hungry ..	60	92. Scissors.	68	28. White ...	46
79. City ...	64	86. Joy ...	66	62. Sheep ...	58	30. Window ...	47
24. Cold ...	45			15. Short ...	42	26. Wish ...	46
64. Cottage ..	59	97. King ...	70	4. Sickneess .	35	23. Woman ...	44
		52. Lamp ...	55	37. Sleep ...	49	42. Working ..	51
2. Dark ...	34	59. Laugh ...	57	25. Slow ...	45		
6. Deep ...	37	58. Light ...	57			54. Yellow ...	55
82. Doctor ...	65						
53. Dream ...	55						

THE FREQUENCY TABLES

1. TABLE

1	(2)	able	1	(0)	doily	0	(6)	lunch	0	(1)	sixes
0	(2)	arithmetic	2	(0)	draw				0	(1)	sofa-pillow
1	(0)	ate	0	(2)	drawer	0	(1)	magazine	0	(1)	something
1	(0)	banana	358	(331)	eat	2	(0)	marble	12	(4)	spoon
1	(0)	bicycle	0	(1)	atables	1	(0)	massive	4	(0)	spoons
2	(1)	big	28	(33)	eating	2	(0)	meals	1	(1)	stable
0	(2)	board	4	(3)	eats	10	(0)	meat	0	(1)	stand
5	(0)	boards	0	(1)	examples	1	(0)	men	0	(1)	store
5	(8)	book				0	(1)	multiply			
5	(12)	books	3	(0)	feet	0	(1)	multipli-	0	(1)	study
0	(1)	boys	0	(1)	floor			cation	0	(1)	studying
11	(3)	bread	0	(2)	flowers	0	(1)	my	1	(0)	stuff
8	(2)	breakfast	17	(15)	food				2	(1)	sugar
2	(0)	broken	1	(0)	foot	0	(1)	napkins	0	(1)	sugar-bowl
1	(0)	butter	2	(2)	fork	0	(1)	number	7	(4)	supper
			4	(2)	forks						
1	(0)	cable	1	(0)	frame	0	(1)	off	10	(17)	table-cloth
1	(0)	cake	0	(1)	furniture	1	(0)	orange	1	(0)	tape
1	(0)	candy				2	(0)	oranges	0	(1)	teacher
1	(0)	cards	0	(1)	got				0	(1)	the
1	(0)	carpet				1	(0)	paper	2	(0)	things
0	(1)	center-table	0	(1)	hat	0	(3)	pen	0	(2)	time-table
16	(3)	chair	2	(0)	high	1	(7)	pencil	1	(3)	top
8	(18)	chairs	0	(13)	home	0	(1)	pencils	1	(0)	tumblers
0	(1)	children	4	(12)	house	1	(0)	people	2	(0)	turkey
0	(1)	class				1	(0)	pie	1	(0)	twelves
1	(0)	clock	0	(1)	ice-cream	9	(7)	plate	0	(1)	twos
43	(30)	cloth	2	(0)	ink	12	(7)	plates			
3	(0)	coffee	1	(0)	is	1	(0)	porch	1	(0)	upon
0	(1)	cold				1	(0)	potatoes	0	(1)	use
1	(0)	come	0	(1)	kitchen-				0	(1)	using
0	(1)	cook			table	0	(3)	read			
1	(0)	cooking	4	(3)	knife	0	(3)	reading	0	(1)	varnish
1	(0)	cover	10	(2)	knives	0	(2)	room	1	(0)	vegetable
7	(5)	cup				6	(2)	round	0	(1)	vegetables
4	(2)	cups	1	(0)	lady						
			2	(1)	lamp	2	(0)	salt	1	(0)	whittle
4	(6)	desk	1	(0)	lamps	1	(0)	sat	21	(26)	wood
2	(2)	dining	4	(0)	large	0	(1)	saucers	9	(0)	wooden
0	(2)	dining-	8	(4)	leg	0	(1)	school	0	(4)	work
		room	70	(56)	legs	1	(0)	seat	0	(1)	working
22	(28)	dinner	0	(1)	light	1	(0)	see	3	(44)	write
33	(11)	dish	0	(1)	lighting	2	(2)	set	5	(25)	writing
126	(115)	dishes	0	(1)	long	6	(15)	sit	1	(0)	written

2. DARK

49	(48)	afraid	1	(2)	dress	8	(3)	lantern	1	(0)	sad
1	(3)	alone	1	(0)	dungeon	1	(0)	lark	18	(18)	scared
0	(1)	ark	1	(0)	dusk	7	(0)	late	0	(1)	scary
0	(3)	asleep				38	(98)	light	0	(2)	school
0	(2)	awful	1	(0)	eat	2	(0)	lights	47	(21)	see
			1	(1)	eraser	0	(1)	lonely	0	(1)	searchlight
1	(0)	bark	10	(5)	evening	0	(1)	look	0	(3)	shades
0	(1)	bats				1	(1)	lost	6	(0)	shadow
28	(16)	bed	0	(1)	face				6	(0)	shady
1	(1)	bed-time	1	(0)	fade	7	(0)	man	0	(1)	shoe
0	(2)	bird	0	(2)	fear	1	(0)	marble	0	(1)	shoes
80	(100)	black	0	(1)	fearful	2	(0)	mark	0	(1)	sit
1	(4)	blackboard	3	(0)	fine	3	(1)	match	6	(0)	sky
4	(3)	blue	0	(1)	fire	1	(0)	mean	6	(28)	sleep
1	(0)	board	0	(1)	flowers	1	(0)	men	0	(3)	sleeping
4	(1)	book	0	(1)	forest	1	(3)	midnight	0	(1)	so
3	(3)	brown	1	(0)	fright	1	(0)	mice	0	(1)	space
6	(0)	burglar	0	(4)	frightened	10	(9)	moon	0	(1)	spark
1	(0)	butter				0	(1)	mouse	3	(0)	star
			3	(0)	gaslight	1	(0)	moving-	1	(0)	stark
0	(2)	camp	0	(1)	geography			picture	4	(0)	starlight
1	(2)	candle	0	(4)	ghost	4	(0)	nice	21	(12)	stars
1	(0)	can't	0	(5)	ghosts	421	(410)	night	2	(0)	startled
0	(1)	cave	5	(5)	gloomy	0	(2)	night-time	0	(1)	steps
0	(3)	cellar	0	(1)	go	5	(10)	no light	2	(2)	storm
1	(0)	chair	0	(3)	goods	0	(2)	noises	3	(0)	stumble
2	(1)	closet	1	(1)	green	1	(0)	not	0	(1)	sugar

1	(1)	cloth	0	(1)	grope	6	(10)	not light	0	(1)	supper
0	(1)	clothes	0	(1)	group						
5	(2)	clouds				4	(0)	out	1	(1)	table
3	(0)	cloudy	4	(2)	hair	1	(0)	outside	0	(2)	theirs
4	(2)	cold	0	(1)	hall				0	(1)	too
7	(17)	color	1	(0)	hark	2	(0)	pale	1	(0)	tree
0	(2)	colors	0	(1)	hate	1	(0)	paper	0	(1)	trees
0	(1)	complexion	1	(0)	have	0	(1)	park	4	(0)	twilight
4	(0)	corner	0	(1)	here	0	(1)	people			
1	(0)	cough	0	(1)	hide	0	(1)	pitch	0	(1)	unlight
1	(1)	curtain	1	(2)	home	0	(1)	pleasure	0	(1)	upset
1	(1)	curtains	8	(8)	house	1	(0)	purple			
									0	(3)	very
3	(0)	dare	1	(0)	I	1	(0)	rain			
0	(1)	darkness	1	(0)	inside	0	(1)	rainy	3	(0)	walk
1	(0)	darkroom	3	(0)	is	2	(0)	red	1	(0)	was
1	(2)	day	0	(4)	it	3	(0)	robber	0	(1)	water
0	(1)	death				0	(1)	robbery	0	(1)	weather
0	(1)	den	1	(0)	lady	29	(16)	room	0	(3)	white
4	(0)	die	15	(10)	lamp	0	(1)	rooms	0	(2)	wood
1	(0)	dismal	1	(4)	lamps				4	(3)	woods

3. MUSIC

1	(0)	angels	0	(2)	hard	29	(12)	nice	0	(33)	school
			0	(1)	hardest	1	(0)	night	1	(0)	serenade
6	(0)	band	0	(1)	harmony	25	(5)	noise	0	(1)	sick
1	(0)	beat	3	(0)	harp	1	(2)	note	153	(236)	sing
0	(4)	beating	0	(1)	hate	10	(66)	notes	23	(54)	singing
0	(2)	beats	3	(1)	hear				1	(0)	soft
11	(5)	beautiful	1	(0)	hearing	0	(2)	orchestra	0	(1)	soldier
1	(0)	beauty	1	(1)	here	19	(10)	organ	50	(37)	song
5	(48)	book	1	(0)	high				1	(1)	song-book
0	(16)	books	0	(1)	history	0	(1)	paid	16	(7)	songs
1	(0)	box	0	(1)	home	0	(2)	paper	35	(0)	sound
			0	(1)	Home	0	(4)	pencil	1	(5)	sounds
1	(0)	choir			Sweet Home	0	(1)	person	0	(1)	spelling
0	(1)	clarinet	1	(0)	hook	0	(1)	phonograph	0	(1)	staff
3	(0)	concert				198	(166)	piano	0	(6)	study
			1	(2)	I	1	(3)	piece	79	(19)	sweet
7	(1)	dance	10	(2)	instrument	1	(0)	pipe	1	(0)	swell
0	(2)	dancing				0	(2)	pitch-pipe			
0	(1)	dinner	5	(1)	joy	81	(39)	play	0	(1)	take
1	(3)	do				2	(0)	played	0	(1)	tap
0	(1)	drawing	0	(1)	keys	1	(0)	player	0	(1)	teach
1	(0)	drum				1	(10)	playing	2	(10)	teacher
			0	(11)	learn	1	(0)	plays	1	(0)	ticket
0	(1)	easy	1	(2)	learning	1	(0)	pleasure	5	(4)	time
1	(0)	enjoy	17	(12)	lesson	0	(1)	pointing	2	(0)	tone
0	(1)	eraser	4	(9)	lessons	1	(1)	poor	0	(1)	train
1	(0)	excellent	17	(1)	like	2	(4)	practice	4	(0)	tune
			0	(1)	line	48	(22)	pretty			
4	(0)	fiddle	6	(3)	listen	0	(1)	public	1	(0)	victrola
3	(2)	fine	6	(2)	loud				25	(12)	violin
0	(1)	finger	1	(1)	love	0	(2)	read	1	(10)	voice
0	(3)	fun	0	(1)	lovely	0	(5)	reading			
						0	(2)	record	0	(4)	we
2	(1)	girl	1	(1)	melody	0	(1)	rhythm	0	(1)	whine
0	(1)	glad	1	(0)	melt	0	(1)	roll	1	(0)	whistle
33	(15)	good	0	(1)	merry	1	(0)	room	0	(2)	words
1	(0)	grand	1	(0)	much	1	(0)	rosy	1	(2)	work
1	(0)	great	0	(1)	music-book				0	(3)	write
			1	(1)	musician	1	(0)	sang	0	(3)	writing
2	(2)	happy				0	(2)	scale			

4. SICKNESS

1	(0)	able	1	(0)	duty	1	(0)	kink	0	(1)	serious
0	(1)	absent	4	(8)	dying	0	(1)	kitchen	0	(1)	sets
5	(1)	ache							1	(0)	she
1	(0)	all right	4	(0)	carache	1	(4)	lady	58	(65)	sick
2	(0)	alone	0	(2)	eating	3	(2)	lay	1	(1)	sickly
1	(0)	are				0	(1)	like	0	(1)	sipped
3	(0)	awful	2	(1)	faint	1	(0)	lonesome	1	(2)	sleep
			1	(0)	families				0	(1)	small-pox
4	(0)	baby	3	(0)	family	6	(1)	man	1	(0)	smother
22	(17)	bad	0	(1)	famine	0	(1)	me	0	(3)	sore throat

1	(0)	banana	1	(0)	fear	27	(40)	measles	0	(6)	sorrow
105	(131)	bed	0	(1)	fearful	35	(40)	medicine	1	(0)	sorry
1	(0)	bedside	0	(1)	feeble	1	(0)	miserable	1	(0)	spoon
1	(0)	bicycle	3	(1)	feel	1	(0)	money	1	(0)	stomach-
1	(0)	bleeding	0	(5)	feel bad	4	(0)	mother	1	(0)	trouble
1	(0)	blind	5	(0)	feeling	1	(0)	move	1	(1)	suffer
5	(2)	boy	1	(0)	feet	9	(3)	mumps	4	(0)	suffering
2	(0)	boys	1	(0)	felt	2	(0)	myself	0	(1)	summer-
0	(1)	brother	50	(36)	fever	1	(0)	night	1	(0)	time
1	(0)	bum	1	(0)	flowers	1	(0)	not healthy	4	(2)	terrible
0	(1)	careless	1	(0)	friend	1	(0)	not well	1	(0)	throat
1	(0)	catch	2	(1)	germs	7	(3)	nurse	6	(1)	tired
0	(1)	chicken-pox	2	(7)	girl	1	(0)	nuts	1	(0)	too bad
0	(3)	child	0	(1)	good	14	(9)	pain	3	(4)	trouble
4	(0)	children	3	(0)	grippe	0	(1)	paint	0	(1)	tuberculosis
26	(18)	cold	0	(1)	hard	0	(2)	pale	0	(3)	typhoid-
1	(0)	consump-	0	(1)	has	0	(1)	pall	1	(1)	fever
7	(1)	cough	1	(0)	have	3	(0)	patient	1	(1)	unhappy
0	(1)	croup	0	(1)	he	11	(7)	people	0	(1)	unhealthy
3	(1)	crying	3	(0)	head	1	(4)	person	0	(4)	unhealthy
3	(2)	cure	26	(12)	headache	2	(0)	pills	2	(2)	very
0	(1)	dangerous	1	(0)	headway	1	(0)	play	0	(1)	wan
1	(0)	dark	6	(11)	health	1	(1)	pneumonia	0	(1)	was
9	(7)	dead	1	(0)	healthy	4	(2)	poor	1	(1)	water
8	(44)	death	0	(13)	home	0	(1)	poorly	2	(0)	we
21	(14)	die	0	(2)	hope	0	(1)	quarantine	34	(8)	weak
5	(0)	died	10	(22)	hospital	0	(1)	quiet	0	(2)	weather
1	(0)	diet	0	(1)	hot	0	(1)	quiet	20	(26)	well
13	(19)	diphtheria	3	(3)	house	4	(5)	sad	8	(0)	white
0	(1)	disagree-	6	(6)	hurt	0	(4)	sadness	8	(0)	whooping-
24	(44)	disease	1	(4)	I	0	(1)	scared	0	(2)	woman
116	(116)	doctor	95	(94)	ill	42	(36)	scarlet-	1	(0)	women
0	(1)	doctors	5	(6)	illness	2	(4)	school	3	(2)	you
1	(0)	dread	1	(0)	in	1	(0)	school-	1	(0)	see
0	(4)	dreary	0	(1)	itches	1	(0)	ma'am	1	(0)	
2	(0)	drug	1	(0)	kill	1	(0)	see	1	(0)	
0	(1)	dull	1	(0)	kill	1	(0)	see	1	(0)	

5. MAN

3	(3)	adult	3	(2)	fellow	1	(0)	loud	0	(1)	size
0	(1)	age	0	(1)	flesh	0	(1)	lumber	0	(1)	skillful
1	(0)	agent	0	(1)	food	0	(1)	lumber	0	(1)	skin
1	(1)	all	2	(0)	foot	6	(2)	mad	1	(0)	slid
3	(0)	American	1	(0)	football	8	(4)	male	0	(2)	small
0	(1)	an	0	(2)	form	4	(0)	mamma	5	(0)	smoke
1	(0)	animal	3	(2)	manhood	3	(2)	manhood	0	(2)	smokes
0	(1)	appearance	0	(1)	garden	0	(5)	married	4	(0)	smoking
1	(0)	arm	4	(0)	gentle	3	(0)	marry	1	(0)	snowman
0	(1)	arms	4	(10)	gentleman	16	(11)	mean	0	(1)	soldier
0	(1)	auto	0	(2)	girl	19	(19)	men	0	(1)	son
1	(4)	bad	2	(0)	goes	0	(1)	miner	0	(1)	spade
0	(1)	bald	18	(7)	going	0	(1)	mister	0	(1)	steps
1	(0)	bather	0	(2)	good	0	(1)	Mr. Smith	5	(1)	store
0	(2)	beg	1	(2)	great	5	(0)	money	1	(0)	stout
0	(1)	beggar	5	(3)	grow	0	(1)	muscles	1	(2)	street
1	(1)	being	5	(3)	grown	1	(0)	my	1	(0)	strength
0	(1)	best	4	(10)	grown-up	1	(0)	my	21	(23)	strong
57	(26)	big	5	(4)	hair	3	(5)	necktie	0	(2)	suit
3	(3)	body	1	(3)	hand	0	(1)	negro	0	(1)	suit
0	(1)	book-binder	3	(0)	hands	1	(2)	nice	2	(5)	talk
55	(29)	boy	1	(0)	happy	3	(4)	office	32	(42)	tall
1	(1)	boys	0	(1)	hard	4	(9)	old	0	(3)	teacher
0	(3)	brave	2	(1)	hard work	0	(0)	one	0	(2)	the
0	(1)	bravery	68	(82)	hat	1	(0)	out	1	(0)	there
2	(1)	burglar	7	(2)	he	0	(1)	overalls	1	(0)	thirty
8	(9)	business	9	(4)	head	2	(0)	overcoat	5	(0)	tie
0	(1)	can	1	(0)	height	3	(0)	pa	5	(4)	trousers
7	(0)	cane	3	(0)	help	1	(0)	pan	0	(1)	true
5	(2)	cap	1	(2)	helper	1	(0)	pan	0	(1)	true
0	(2)	carpenter	0	(1)	here	5	(6)	pants	0	(1)	ugly
1	(0)	chap	1	(0)	hidden	7	(0)	papa	0	(1)	uncle
0	(1)	child	0	(0)	high	0	(1)	parents	2	(0)	uncle
0	(1)	child	2	(0)	hire	0	(1)	pay	1	(0)	up

0	(1) city	3	(4) home	8	(8) people		
2	(0) cloak	0	(1) homely	1	(0) pen	0	(1) waiter
1	(0) cloth	0	(2) horse	45	(38) person	17	(27) walk
40	(42) clothes	2	(1) house	1	(0) plan	3	(0) walked
5	(2) clothing	6	(20) human	1	(0) play	5	(9) walking
15	(28) coat	0	(8) human-being	0	(1) plow	3	(0) walks
1	(0) cold	0	(1) hurt	0	(1) pocket	0	(2) watch
4	(2) collar	0	(1) husband	0	(1) policeman	1	(0) went
1	(0) creature	7	(0) I	4	(2) poor	0	(2) whiskers
				1	(0) potatoes	2	(0) white
0	(1) daddy	0	(1) ill	0	(3) principal	0	(1) wife
1	(0) dark	1	(0) janitor			0	(1) wins
0	(1) dead			3	(2) ran	8	(40) woman
0	(1) desk	2	(1) kind	11	(0) rich	0	(17) women
0	(1) doctor		(0) knitting	2	(2) robber	168	(153) work
0	(1) dog	0	(1) lady	2	(0) run	2	(0) worked
1	(1) dress	1	(0) lame	1	(0) saloon	3	(2) worker
1	(0) drunk		(0) language	1	(3) saw	11	(23) working
0	(1) dust	17	(18) large	0	(3) school	0	(1) working-man
		3	(0) leg	0	(1) see	0	(1) workman
0	(1) eat	0	(2) legs	1	(0) sew	14	(9) works
0	(1) Ed	5	(2) light	0	(5) shirt	0	(1) write
0	(6) eyes	2	(0) likes	8	(6) shoes		
1	(0) excuse	1	(0) little	1	(0) shoot	1	(0) yes
		1	(0) live	0	(1) shooting	0	(1) you
14	(4) face	3	(0) living	0	(2) shop	5	(2) young
0	(1) family	2	(1) long pants	2	(1) shovel	1	(0) your
0	(1) fat	0		0	(1) show	1	(1) youth
30	(19) father	2		7	(1) sick		
0	(2) feet	0					

6. DEEP

1	(0) a	1	(2) drowning	0	(1) ladder	1	(0) seeds
5	(2) afraid	2	(4) dug	9	(9) lake	1	(0) serious
1	(0) are	0	(1) dungeon	0	(1) land	0	(3) sewer
2	(1) awful			7	(9) large	6	(16) shallow
0	(1) angle-worm	0	(1) earth	1	(0) leap	1	(3) ship
		0	(1) erase	1	(0) length	0	(1) sink
1	(0) ball			2	(0) like	8	(1) sky
5	(0) barn	17	(15) fall	1	(0) limp	0	(1) sled
1	(0) barrel	3	(0) fall in	1	(0) lion	1	(0) sleep
1	(0) beautiful	0	(1) falling	12	(14) long	3	(2) snakes
9	(5) big	25	(41) far	2	(1) lost	0	(1) snow
0	(1) billow	0	(1) fearful	4	(0) love	10	(1) so
8	(6) black	1	(1) feet	35	(52) low	1	(0) soft
0	(4) blue	5	(0) fell			0	(1) soil
4	(0) bottom	1	(0) fire	1	(0) man	0	(1) some
0	(1) bottomless	2	(1) fish	1	(0) mat	1	(0) sore
0	(3) breath	1	(0) fishing	1	(0) mine	0	(1) sorrow
0	(1) breathing	0	(3) forest	0	(1) moderate	0	(1) steep
1	(0) bridge	0	(1) frightened	0	(3) mud	7	(2) stream
1	(0) bury			0	(1) my	2	(0) swim
		0	(1) gone			6	(3) table
1	(0) can't	1	(0) good	0	(3) narrow	0	(1) thick
0	(1) cave	0	(1) grass	1	(0) nice	0	(1) thin
5	(3) cellar	2	(1) grave			1	(0) think
1	(0) cloud	3	(0) groan	15	(14) ocean	0	(1) thought
0	(1) cold	21	(23) ground	0	(1) outside	1	(3) through
0	(1) color	0	(1) grown			2	(0) under-ground
3	(1) cover			1	(0) peak	0	(1) under-standing
1	(0) creek	3	(1) hard	0	(1) peep	0	(1) up
0	(2) creep	1	(0) haunt	0	(6) pit	0	(1) vase
1	(3) cup	1	(0) heap	2	(1) play	4	(0) very
1	(1) cut	1	(1) heart	4	(0) pond	3	(0) voice
		2	(0) heavy				
0	(1) dangerous	3	(0) height	1	(0) race	0	(1) water
12	(33) dark	4	(19) high	1	(0) reap	1	(1) way
0	(1) darkness	0	(1) hill	0	(2) red	1	(0) well
0	(5) depth	257	(244) hole	36	(30) river	4	(0) wet
12	(5) dig	2	(0) holes	2	(1) rocks	3	(0) wide
0	(1) digging	8	(5) hollow	0	(1) room	0	(0) wood
4	(5) dirt			3	(0) round	145	(162) woods
1	(0) dish	1	(0) in	1	(0) run	1	(1) work
7	(4) ditch	1	(0) inside			87	(76) work
0	(2) dive	3	(0) is	1	(0) salt	0	(2) work
47	(43) down	2	(3) it	3	(1) sand	5	(0) wide
0	(1) dreary			1	(0) saw	1	(0) wood
9	(8) drown	1	(1) jump	2	(0) scared	11	(6) woods
4	(2) drowned			14	(27) sea	0	(2) work

7. SOFT

6	(5)	apple	1	(2)	feathery	3	(1)	linen	3	(2)	seat
5	(3)	apples	3	(2)	felt	8	(0)	little	3	(0)	shirt
			0	(1)	filling	4	(0)	loft	6	(2)	silk
5	(6)	ball	3	(1)	fine	1	(0)	looked	2	(6)	sing
1	(1)	banana	1	(0)	ingers	1	(0)	looking	0	(2)	singing
0	(1)	bananas	0	(1)	floor	0	(4)	loud	2	(6)	sink
1	(0)	bathe	0	(2)	flour	0	(1)	lounge	4	(4)	sit
0	(1)	batting	5	(10)	fluffy	4	(17)	low	3	(1)	skin
1	(0)	be	1	(0)	fly				3	(5)	sleep
1	(0)	beat	1	(0)	fresh	0	(2)	marsh	0	(2)	sleeping
57	(62)	bed	0	(1)	fruit	0	(1)	mattress	0	(1)	slippers
0	(1)	bench	20	(12)	fur	4	(1)	meat	1	(0)	slippery
0	(1)	big	1	(0)	furs	2	(0)	mellow	22	(19)	smooth
1	(0)	billow				1	(1)	melt	20	(6)	snow
1	(0)	bind	1	(0)	girl	0	(2)	moist	0	(1)	soap
10	(1)	blanket	2	(3)	glossy	4	(7)	moss	7	(3)	sofa
1	(0)	blow	7	(5)	good	1	(0)	mosses	1	(0)	softer
1	(0)	book	0	(1)	goods	21	(13)	mud	1	(0)	softly
45	(50)	bread	5	(8)	grass	7	(3)	muddy	3	(3)	softness
6	(2)	butter	1	(0)	grease	4	(3)	mush	1	(0)	softy
			0	(2)	green	19	(12)	mushy	0	(1)	soggy
9	(8)	cake	9	(0)	ground	0	(12)	music	1	(0)	soup
5	(4)	candy	0	(5)	grounds	0	(3)	mussy	2	(1)	sow
1	(0)	cap	0	(1)	gum				5	(0)	sponge
4	(0)	carpet				3	(0)	nest	1	(10)	spongy
7	(5)	cat	0	(5)	hair	46	(32)	nice	0	(1)	spot
1	(8)	catch	1	(0)	hand	0	(1)	noise	0	(1)	spring
3	(8)	chair	6	(0)	hands	0	(1)	not	0	(1)	squash
0	(1)	chalk	0	(1)	handker- chief	1	(0)	ocean	0	(1)	squeeze
0	(1)	chicken				1	(0)	ocean	0	(3)	sticky
1	(0)	chunk	27	(63)	hard	0	(2)	oft	1	(0)	strong
2	(0)	clay	0	(1)	hat	0	(0)	often	0	(1)	sugar
1	(0)	clear	4	(1)	hay	1	(0)	oily	1	(0)	sunk
13	(22)	cloth	0	(1)	hazy	1	(0)	on toe	3	(0)	swamp
0	(3)	clothes	1	(0)	he	0	(2)	orange	1	(9)	swet
0	(1)	coal	0	(1)	head				1	(0)	swing
3	(0)	coat	1	(0)	hear	0	(1)	pancake			
1	(0)	coats	1	(0)	heat	9	(2)	paper	1	(0)	taste
1	(0)	cold	1	(1)	heavy	0	(1)	pencil	3	(3)	tender
4	(12)	comfortable	0	(1)	high	0	(1)	person	0	(1)	that
0	(1)	cooky	0	(1)	home	3	(1)	pie	7	(1)	thin
57	(65)	cotton	0	(1)	house	1	(0)	pieces	1	(0)	thing
6	(1)	couch				138	(122)	pillow	0	(1)	tip-toe
2	(0)	cover	1	(0)	ice	0	(1)	pincushion	0	(2)	too
11	(4)	cozy	9	(2)	ice-cream	0	(1)	play	0	(1)	touch
0	(1)	cream	2	(0)	is	1	(1)	potato	1	(0)	touchy
1	(0)	crimson	3	(1)	it	2	(0)	potatoes			
39	(71)	cushion				1	(0)	press	0	(1)	us
			0	(1)	jelly	6	(4)	pretty			
2	(3)	dirt	5	(2)	juicy	2	(0)	puppy	4	(6)	velvet
0	(1)	down	0	(1)	jump	0	(1)	push	4	(5)	very
2	(5)	downy				0	(1)	pussy-			
6	(1)	dress	0	(1)	kind			willow	0	(1)	walk
1	(1)	drink	1	(2)	kitten				6	(4)	warm
3	(0)	drinks				2	(0)	quicksand	5	(5)	water
1	(0)	dry	0	(1)	lacy	3	(7)	quiet	2	(0)	well
			9	(4)	lay				2	(1)	wet
3	(5)	earth	1	(0)	lay on	0	(1)	rain	7	(2)	white
15	(28)	easy	1	(0)	leaf	0	(1)	rest	2	(1)	wood
1	(0)	egg	0	(1)	leather	0	(1)	rough	9	(6)	wool
2	(2)	eraser	3	(0)	leaves	0	(2)	round	4	(0)	wooly
			0	(1)	lesson	0	(1)	rub	0	(1)	work
1	(0)	fainting	1	(0)	let						
0	(2)	fall	18	(32)	light	5	(7)	sand	1	(0)	you
5	(3)	feather	1	(2)	lightly	0	(1)	school			
15	(12)	feathers	0	(1)	lightning	2	(0)	sea			

8. EATING

1	(2)	appetite	2	(1)	enough	0	(2)	luncheon	0	(1)	sauce
21	(7)	apple	0	(2)	everybody				1	(0)	sheath
21	(7)	apple				1	(0)	man	4	(0)	sick
1	(0)	are	3	(2)	fast	0	(8)	meal	2	(0)	slow
20	(13)	ate	3	(2)	fat	2	(0)	meals	1	(0)	snow
			0	(2)	fill	42	(40)	meat	0	(2)	something
3	(0)	baby	0	(1)	filled up	0	(1)	meeting	5	(2)	soup

0	(1)	baker	0	(1)	finish	1	(0)	melon	6	(18)	spoon
5	(6)	banana	2	(1)	fish	1	(0)	mice	0	(1)	starving
0	(3)	bananas	54	(103)	food	5	(2)	milk	0	(1)	steak
1	(0)	beans	11	(15)	fork	0	(2)	mother	1	(1)	stealing
3	(0)	beating	1	(0)	forks	0	(1)	mouse	3	(1)	stomach
2	(2)	bite	1	(0)	fresh	4	(7)	mouth	2	(0)	store
0	(1)	biting	4	(4)	fruit	0	(1)	muskmelon	5	(0)	stove
178	(152)	bread	5	(5)	full				0	(1)	strong
10	(20)	breakfast				3	(0)	napkin	3	(2)	sugar
2	(3)	butter	1	(3)	girl	2	(2)	nice	1	(0)	suit
			1	(0)	girls	0	(1)	noon	29	(30)	supper
18	(9)	cake	39	(47)	good	0	(1)	noon-time	5	(6)	swallow
16	(9)	candy	3	(0)	goodies	1	(0)	not	1	(0)	sweet
2	(4)	chair	2	(1)	grapes				0	(1)	swell
1	(0)	cheese				2	(2)	oatmeal			
0	(8)	chew	1	(0)	he	4	(3)	orange	108	(113)	table
7	(3)	chewing	3	(2)	healthy	0	(4)	oranges	2	(0)	take
3	(1)	chicken	1	(0)	heart				1	(0)	taken
1	(0)	clean	2	(0)	hearty	3	(0)	peanuts	3	(0)	taste
2	(1)	coffee	1	(0)	help	0	(1)	people	3	(2)	tasting
1	(3)	cook	0	(1)	high	0	(2)	person	3	(0)	teeth
4	(2)	cookies	6	(8)	home	2	(0)	pickles	6	(0)	Thanks-giving
0	(1)	cooking	0	(3)	house	1	(8)	pie			
1	(0)	cracker	8	(3)	hot	3	(0)	pies	1	(0)	there
3	(0)	cup	43	(37)	hungry	3	(7)	plate	1	(0)	thing
						3	(0)	plates	1	(0)	things
0	(1)	delicious	1	(2)	I	0	(1)	play	0	(1)	through
0	(2)	digest	2	(0)	ice	0	(1)	polite	0	(1)	tomatoes
0	(1)	dining	13	(3)	ice-cream	3	(0)	potato	1	(0)	too much
42	(44)	dinner	0	(1)	is	25	(23)	potatoes	6	(0)	turkey
1	(5)	dish	1	(0)	it	1	(0)	prayer			
3	(9)	dishes				2	(0)	pudding	0	(9)	vegetables
1	(1)	done	2	(0)	kitchen	1	(0)	pumpkin	0	(4)	victuals
0	(1)	don't	8	(8)	knife						
6	(3)	drink	0	(2)	knives	1	(0)	rabbit	1	(0)	waffles
2	(6)	drinking				1	(0)	raisins	6	(0)	warm
1	(0)	drinks	1	(0)	let's	1	(0)	rice	1	(0)	was
51	(58)	eat	0	(2)	like	0	(1)	room	0	(1)	washing
3	(2)	eaten	2	(2)	live				0	(1)	water
1	(0)	eating-house	1	(2)	lots	1	(0)	salt	0	(2)	we
			0	(1)	lumber	1	(0)	salting			
3	(0)	eggs	4	(11)	lunch				0	(1)	you

9. MOUNTAIN

0	(1)	air	1	(0)	fell	2	(2)	lion	0	(2)	Sheep
0	(1)	Alaska	0	(1)	flowers	0	(1)	live	3	(0)	silver
11	(3)	Alps	0	(1)	forest				2	(0)	skis
			1	(5)	fountain	1	(0)	man	2	(0)	sledging
1	(0)	bad	1	(0)	frosted	1	(0)	men	2	(0)	slide
7	(3)	bear	8	(0)	frozen	3	(0)	mile	1	(0)	slippery
1	(0)	beautiful	2	(0)	fun	1	(0)	mine	0	(1)	smoke
13	(26)	big				0	(1)	mineral	61	(43)	snow
1	(0)	black	2	(3)	geography	0	(1)	mnes	3	(0)	snowy
0	(1)	Blue Mts.	4	(1)	glazier	0	(1)	mining	0	(1)	soft
1	(0)	bowllder	1	(1)	go	0	(1)	Montana	1	(0)	springs
1	(0)	breaks	0	(2)	goat	1	(2)	mount	3	(3)	squirrel
0	(2)	brick	3	(0)	goats	0	(3)	Mt. Blanc	32	(24)	steep
1	(0)	burrow	15	(6)	gold	1	(0)	mounted	12	(0)	stone
			0	(1)	granite	0	(1)	mule	1	(5)	stones
1	(0)	cabin	2	(6)	grass				0	(1)	summit
1	(0)	California	1	(2)	ground	0	(1)	on	0	(3)	Switzerland
0	(1)	Canada				0	(1)	Osakis			
0	(1)	cattle	1	(1)	hard	0	(1)	outside			
0	(1)	cave	15	(0)	height				0	(2)	tall
1	(0)	caves	390	(432)	high	37	(13)	peak	0	(1)	ten
0	(1)	cement	1	(0)	higher	13	(4)	peaks	0	(1)	the
1	(7)	cliff	1	(0)	highest	0	(2)	Pike's Peak	1	(1)	there
29	(50)	climb	4	(0)	highland	1	(0)	place	0	(1)	things
18	(12)	climbing	91	(104)	hill	1	(0)	plain	0	(5)	top
13	(0)	cold	6	(12)	hills	0	(1)	plateaus	0	(2)	train
0	(2)	cool	0	(3)	hilly				1	(2)	travel
0	(2)	country	0	(6)	horse	0	(1)	rain	0	(1)	traveling
1	(0)	cowboy	0	(2)	house	0	(2)	range	1	(3)	tree
3	(0)	crater				2	(1)	river	1	(16)	trees
0	(1)	crevice	1	(0)	I	0	(1)	rivers	1	(0)	trolley-car
			10	(0)	ice	1	(0)	road			
1	(0)	dark	2	(0)	iceberg	15	(17)	rock	15	(0)	up
1	(0)	deer	8	(0)	icy	34	(47)	rocks			

0	(1) Denver	1	(0) in	10	(15) rocky	3	(8) valley
4	(3) dirt	1	(0) is	0	(1) roof	10	(14) volcano
0	(1) donkey			0	(1) rope		
		0	(1) Keegan's	0	(1) rough	0	(1) walk
4	(0) eagle		Lake	1	(0) run	1	(0) was
0	(1) eagles	0	(1) killing			0	(1) Washing-
0	(2) earth			0	(1) sand		ton
1	(0) even	1	(2) lake	1	(0) scene	0	(4) water
		3	(1) land	1	(0) scenery	1	(0) west
4	(0) fall	2	(7) large	0	(1) school	2	(4) woods
1	(0) fallen	3	(0) lava	0	(1) see	1	(0) work
1	(0) farther	1	(0) light	1	(0) she		

10. HOUSE

3	baby	3	covering	2	in	4	our	1	stay
12	barn	1	cozy	1	indoors	1	outdoors	2	step
3	beautiful	1	cup	6	inside	1	over	3	steps
7	bed			1	is			6	stone
1	bell	1	dirty			3	paint	8	stove
51	big	30	door	3	kitchen	2	painted	1	swim
2	black	5	doors			2	parlor		
3	board	1	dwelling	3	lady	22	people	19	table
1	boards			10	large	6	piano	1	top
8	brick	4	family	1	leaving	3	picture	3	trees
2	bricks	4	farm	1	light	1	place	1	two
2	build	2	fire	1	little	1	plant		
16	building	1	fog	165	live	3	plastering	2	village
		1	funny	4	lived	2	play		
4	cabin	23	furniture	13	living	6	porch	1	wall-paper
1	camp			4	lives	4	pretty	1	ward
2	carpet	2	glass	1	look			62	warm
1	carpenter	1	going	8	lumber	5	red	3	warmth
1	carpets	3	good			1	restore	3	white
4	cellar	2	grandmother	1	make	1	right	1	wide
43	chair	1	green	2	man	1	rods	11	window
4	chairs	1	gray	1	material	14	roof	12	windows
8	children	4	ground	1	men's	40	room	40	wood
25	chimney			1	mice	24	rooms	1	wooden
2	clean	1	heat	7	mother			5	work
1	clock	1	heavy	4	mouse	2	school		
1	close	6	high	4	move	1	schoolhouse	3	yard
1	coal	1	hill	1	my	14	shelter	1	yellow
4	cold	1	hollow			2	shingles		
2	color	39	home	3	neat	2	sleep		
1	cooking	2	hot	9	nice	5	small		
4	cottage	5	houses	1	night	4	smoke		
1	couch	3	hut	1	no	1	stairs		

11. BLACK

1	afraid	1	crane	5	hair	5	mud	4	sky
		2	crayons	3	hands			6	smoke
1	back	2	crepe	6	hat	1	nap	1	soil
1	ball			1	hatbox	1	negro	3	soot
1	beard	315	dark	2	heavy	1	nice	1	sorrow
26	blackboard	7	darkness	6	hole	15	night	1	south
6	blue	3	danger	4	horse			8	stove
43	board	1	dangerous	4	house	1	orange	1	stoves
1	boards	1	dead					1	suit
1	book	5	dirt	2	I	32	paint		
3	boy	42	dirty	30	ink	1	painted	1	thread
1	burnt	12	dog	1	inquire	3	pants		
		1	drab	2	iron	1	paper	2	veil
7	cat	63	dress	2	is	7	pen	3	very
4	chalk					13	pencil		
4	charcoal	1	face	1	jacket			3	waist
4	chimney	5	feathers			1	racer	2	wear
2	clock	1	flat	1	kitten	1	rain	1	were
2	closed	3	floor			3	red	27	white
9	cloth	1	funny	3	lead pencil	11	ribbon	3	woods
5	clothes			1	lever			1	wool
8	coal	1	globe			1	sheep	1	write
10	coat	3	gloomy	1	mack	1	shine		
1	coke	5	goods	1	men	1	shirt	3	yarn
104	color	1	green	1	moon	1	shoe		
1	colors	1	gray	1	mourn	9	shoes		
4	coon			3	mourning	9	skirt		

12. FUN

2 bad	1 down	1 ground	3 lunch	1 sew
35 ball	1 drowned	4 gun		2 shovel
7 baseball			6 marbles	2 show
5 basketball	2 eat	1 had	2 money	4 skate
1 box	5 eating	16 happy	1 much	1 skates
4 boy	1 enjoy	4 happiness		11 skating
10 boys	2 enjoying	17 have	8 nice	3 sled
2 build		11 hide & seek	2 noise	2 slide
1 bun	2 fall	4 hockey	2 outdoors	5 snow
1 butter	2 fell	2 hop	1 outside	6 snowball
	3 fight	3 hurt		6 snowballs
1 can	1 finger		394 play	2 snowfight
1 cap	9 fishing	1 I	34 playing	4 sport
4 cheery	1 food	1 it	4 pleasure	7 swimming
2 child	15 football			22 tag
13 children	3 frolic	3 jokes		2 time
1 clock	3 full	1 joking	3 race	2 toy
1 cookie	5 funny	6 jolly	2 ran	1 toys
		29 joy	1 rat	
3 dark	12 game	6 jump	2 read	1 very
1 delight	38 games		3 recess	
2 delightful	1 gay	18 laugh	3 rope	2 walk
4 digging	1 girl	2 laughed	46 run	1 water
2 dirt	2 girls	3 laughing	1 running	1 well
1 doll	4 glad	1 light		1 window
9 dolls	9 good	5 like	4 school	
3 doors	4 goodtime	5 lots	1 see	

13. SCHOOL

39 arithmetic	31 desk	18 late	18 reading	38 study
	20 desks	93 learn	1 reads	2 tardy
1 bad	6 door	5 learning	13 recess	9 teach
2 bell		2 lesson	1 rest	44 teacher
14 blackboard	1 education	14 lessons	1 roof	6 teaching
24 book	5 eraser	1 like	16 room	1 telephone
81 books			4 rooms	1 theirs
3 boy	1 fool	1 map	2 ruler	1 think
14 boys	3 fun	3 mates	1 run	8 time
1 brick		3 morning		1 trees
6 building	6 girls	6 music	6 scholar	2 Tuttle
	29 go		7 schoolmate	
1 ceiling	7 going	5 paper	1 schoolroom	1 wait
1 chair	3 grounds	17 pencil		3 went
5 chalk		1 pens	10 seat	1 whole
101 children	1 happy	1 people	3 seats	1 word
2 classes	2 Holmes	7 play	3 Sheridan	68 work
3 clock	1 home	4 playmate	1 smart	2 working
1 crayon	2 hours	1 pool	17 spelling	15 write
	14 house	6 pupil	3 spool	24 writing
2 day			1 starts	
5 days	3 language	28 read	1 steps	
			2 studies	3 yard

14. HAND

44 arm	14 dirty	3 have	6 nail	1 scratch
1 ax	1 doing	1 head	3 nails	1 sweat
	2 draw	1 heart	1 nice	
3 band	1 dress	1 help		1 take
2 beckon		3 her	1 o'clock	3 take hold
12 big	5 eat	1 his	1 one	1 them
2 black	4 eating	17 hold		1 there
2 blisters	3 elbow	1 hook	1 pain	5 throw
4 body	1 every	3 hurt	1 paint	3 touch
4 bone	1 eyes	3 hurts	6 palm	3 two
5 bones			1 pen	
1 book	1 face	1 iron	7 pencil	33 use
1 breakfast	1 fast		1 penny	1 used
6 broad	2 fat	1 kind	1 pick	12 useful
3 broke	2 feel	1 kiss	1 picture	1 using
3 broken	1 felt	1 knife	1 piece	
3 brown	69 finger		1 pores	7 veins
1 busy	5 fingernail	1 land	7 pretty	
1 button	3 fingernails	2 large	1 pulling	1 was
1 by	130 fingers	6 left		5 wash
	1 first	2 leg	3 raise	1 watch

4 carry	5 five	2 lift	2 reach	13 white
2 catch	4 flesh	3 little	18 right	1 wood
8 chapped		1 long	11 ring	113 work
23 clean	1 girl		7 rough	6 worked
65 clock	4 gloves	1 man		6 works
1 cloth	1 go	5 meat	1 sand	4 wrist
7 cold	1 goes	4 mitten	1 sew	52 write
1 comfort		7 move	6 shake	1 writes
1 command	1 handed	2 moving	16 skin	9 writing
3 cook	1 handle	2 muscle	1 skirt	2 wrote
1 crawl	1 handout	2 music	11 small	
5 cut	1 hang	1 my	10 soft	1 your
			8 sore	5 yours

15. SHORT

1 are	1 eating	1 large	1 people	2 stub
1 around		5 leg	4 person	15 stubby
	11 fat	4 legs	1 piece	2 stump
12 baby	2 feet	3 length	1 pin	1 stumpy
1 bad	13 finger	6 lesson	1 port	
1 banana	15 fingers	5 letters		12 tall
8 big	3 flowers	1 life	1 quick	3 thin
5 block	1 fly	2 line		1 thing
5 board	1 fort	157 little	2 reach	9 time
1 boat	1 fringe	1 lock	3 ribbon	5 tiny
20 boy		54 long	1 right	1 tree
1 brief	14 girl	1 lort	6 rope	1 try
1 broad	2 good	5 low	1 round	1 tubby
1 broke			1 ruler	
	8 hair	43 man	1 run	1 very
7 cake	5 hand	1 men		
1 chalk	1 he	1 mice	1 size	2 waist
3 child	1 hook	1 minute	7 skirt	15 walk
1 close	1 hours	1 mouse	6 sleeve	1 was
4 clothes	3 house	1 my	214 small	5 way
1 coat			1 smooth	1 wide
1 court	4 inch	3 name	1 sock	3 winter
1 cut	1 inches	1 narrow	14 stick	2 woman
	1 is	1 neck	1 still	1 women
1 Dan		1 nice	1 stocking	1 wood
4 day	1 Japanese	3 night	1 stone	1 word
1 descent	1 jiffy	1 not	4 stop	1 write
8 distance			1 stork	
1 dog	1 ladder	1 papa	5 story	2 you
38 dress	1 ladies	6 pants	7 stout	1 young
	1 lads	1 paper	2 strap	
1 easy	23 lady	46 pencil	15 string	

16. FRUIT

131 apple	1 delicious	2 have	54 orange	9 seeds
174 apples		1 high	45 oranges	2 spoiled
	153 eat	1 hot		3 strawberries
52 banana	2 eatable	2 hungry	8 peach	20 sweet
44 bananas	25 eating		14 peaches	
1 belong	1 eatness	1 jam	9 pear	1 taste
5 berries	1 eggs	1 juice	7 pears	1 there
3 big		7 juicy	4 plums	1 thing
1 bread	3 food			7 tree
1 butt	2 fresh	1 kind	1 quiet	4 trees
4 cake	3 garden	2 like	3 red	10 vegetables
5 California	89 good	2 look	4 ripe	3 vegetables
2 can	1 goodies	2 love	2 rotten	
1 carrots	3 grape			1 yesterday
1 cone	29 grapes	1 mute	2 salad	
	3 green	1 nectar	2 sauce	
1 delicacy	4 grows	12 nice	1 sauces	

17. BUTTERFLY

8 air	1 capture	4 field	7 insects	5 saw
18 animal	5 catch	4 flew	1 it	3 seen
2 ant	8 caterpillar	41 flies		1 setting
	3 caught	19 flower	5 little	1 seven
2 beast	2 chase	7 flowers	1 look	3 silk
1 beating	10 cocoon	179 fly		5 small

17 beautiful	3 color	1 flyer	1 moth	5 soft
6 beauty	3 colored	18 flying		1 soul
4 bee	1 colors		2 net	3 spring
9 big	16 creature	4 garden	7 nice	16 summer
57 bird		3 golden		1 sunbeam
1 bread	1 dandelion	1 green	1 picture	1 sunshine
1 bring	1 dark		4 play	
6 brown	1 dragon	1 head	1 pet	1 web
14 bug		1 high	4 powder	13 white
5 bugs	1 eat	5 honey	89 pretty	23 wing
54 butter	1 eats	1 hurt		114 wings
			7 red	6 worm
1 cage	1 fast	66 insect	1 rich	
				47 yellow

18. SMOOTH

1 ain't	33 desk	39 ice	3 picture	1 smoothed
4 apple	4 dress	1 in	2 pillow	3 smoother
		1 iron	4 plain	1 smooths
6 bed	4 easy	4 ironed	4 plane	6 snow
1 bench	1 egg	4 it	1 play	132 soft
15 blackboard	3 eraser		1 potatoes	1 soothe
43 board	70 even	1 lake	1 pretty	2 stone
1 book		2 land		39 straight
1 box	3 face	4 leather	2 quilts	
1 bright	3 feathers	55 level		16 table
1 butter	3 feels	1 leveled	1 right	3 tablecloth
	2 fine	3 light	3 road	1 talk
3 candy	29 flat	2 line	10 rock	1 tender
4 carpet	20 floor	1 lumps	35 rough	1 thin
4 cat	1 flowers		4 round	1 tone
4 chair	11 fur	1 mind	1 rugged	
1 clean		1 mold		1 use
1 clear	48 glass	3 molded	1 sand	1 useful
25 cloth	2 glossy		1 salt	
1 clothes	3 good	2 neat	1 shining	2 varnish
1 coat	2 grease	68 nice	7 shiny	8 velvet
1 color	13 ground	1 no	1 sight	3 very
4 cotton		33 paper	5 silk	5 wall
2 cozy	4 hair	5 pavement	1 silky	5 water
1 crooked	3 hand	5 pencil	4 slick	4 window
2 cup	7 hands		2 slide	5 wood
	10 hard		19 slippery	

19. CANDY

2 ate	3 coughdrops	2 goods	4 marshmallow	5 soft
	2 cream	2 goody	5 money	7 stick
2 bad		2 grocers		9 sticky
2 bought	2 dandy	14 gum	7 nice	15 store
12 box	2 dirty		7 nickel	14 suck
1 boy	1 dog	2 had	2 nut	39 sugar
1 bring		11 hard	2 nuts	297 sweet
3 brown	181 eat	2 hate		1 sweetmeats
2 burn	3 eatables	5 have	1 pastry	13 sweets
7 buy	1 eaten	2 honey	15 peanut	
	13 eating	3 ice cream	4 penny	3 teeth
2 candy-man	2 eats		8 peppermint	2 treat
3 caramels		2 lemon	2 person	
1 cat	1 fruit	4 licorice	3 pink	1 wax
25 chocolate	7 fudge	18 like	2 please	3 white
5 chocolates		3 love		
1 confectionery	1 gone	8 make	2 rich	1 yellow
1 cookies	149 good		1 round	
2 cooks	3 goodies			

20. CHAIR

21 arm	1 crooked	2 have	6 nice	17 sitting
6 arms		8 heavy		4 small
	5 desk	9 high	1 on	6 soft
17 back	1 doll's	10 house		3 stand
1 bare	1 down		1 pair	8 stool
1 bear		1 I	1 piece	5 straight
2 bed	2 eat	1 iron		3 strong
14 big	1 eating		5 rest	1 supper
6 board	9 easy	1 king	3 rock	
1 book			3 rocker	29 table

2 box	2 fall	7 large	13 rocking	2 use
1 boy	1 feel	5 leather	9 sat	2 useful
5 broke	1 feet	18 leg	2 school	1 white
10 broken	7 furniture	26 legs	131 seat	34 wood
2 brown	3 good	1 level	38 set	5 wooden
2 cloth	3 grandpa	1 look	1 setting	1 yellow
1 color	3 hair	3 low	430 sit	3 your
3 comfort		1 nap	2 sits	

21. SWEET

45 apple	6 cookies	10 girl	17 milk	1 sick
21 apples	1 cream	213 good	37 nice	1 slow
5 baby	1 cute	4 goodies	7 orange	7 smell
1 banana	1 dear	1 he	26 oranges	1 something
8 bananas	1 delicate	23 honey	3 peas	1 song
1 beautiful	4 delicious	11 ice cream	3 perfume	1 sorrow
1 beloved	4 doll	1 it	5 pickle	1 sounds
1 biscuit	4 drink	4 jelly	6 pie	23 sour
1 bite	13 eat	8 juicy	1 play	1 stew
1 blossom	1 eating	5 lady	1 potatoes	178 sugar
5 butter	1 flavor	1 like	16 pretty	1 sugary
5 bread	5 flower	1 lovable	3 rich	1 sweetpea
10 cake	4 flowers	3 love	4 roses	4 syrup
146 candy	1 freeze	3 lovely	1 sauce	23 taste
3 cherries	3 frosting	2 meat	1 very	1 voice
18 chocolate	4 fruit	1 meet	1 wood	
1 coffee				
1 cold				

22. WHISTLE

1 aloud	3 engine	9 horn	5 nice	9 song
2 arrested	3 fast	1 Jim	185 noise	18 sound
1 bad	2 finger	1 joy	6 noisy	1 squeaking
1 beckoned	4 fingers	1 kind	6 noon	6 steam
12 bird	1 frolic	2 lady	4 nose	1 story
12 blew	4 fun	1 let's	1 note	1 supper
189 blow	4 girl	1 like	1 people	1 thistle
2 blowing	1 goat	1 likes	1 pipe	2 time
1 blown	3 good	6 lips	1 plow	1 tin
2 blows	1 got	3 listen	7 police	1 tone
79 boy	1 green	1 long	1 pretty	4 toot
24 boys	7 happy	71 loud	1 ring	21 train
1 breath	5 hard	4 low	1 ristle	11 tune
1 bristle	1 has	2 make	2 round	2 whisper
4 bullet	1 have	6 man	3 run	2 whistler
14 call	5 hear	1 mean	2 scared	7 willow
4 calling	3 hearing	4 merry	2 sharp	22 wind
5 can	1 help	1 missle	2 shout	9 wood
1 canary	1 her	5 morning	11 shrill	3 wooden
3 can't	1 high	16 mouth	6 sing	1 work
1 castle	1 him	14 music	2 singing	1 Yankee
5 come	1 hole	11 name	1 sings	Doodle
3 dinner	10 holler		1 somebody	
2 dog				

23. WOMAN

4 adult	1 face	3 kiss	1 one	1 straw hat
1 arm	2 fashions	1 laces	6 people	3 sweep
3 babies	4 fat	13 ladies	21 person	12 sweet
5 baby	1 feather	243 lady	1 plush	1 tall
6 bake	9 female	3 large	1 poor	1 talk
4 big	7 furs	4 laugh	12 pretty	1 tarts
1 blanket	17 girl	1 legs	1 prize	6 teacher
5 busy	4 gloves	1 likeness	6 run	1 use
1 can	2 going	6 little	1 say	1 useful
1 child	12 good	1 living	2 sewing	2 waist
13 children	1 grin	1 look		
		1 looking		

3	cleans	7	hair	4	sews	9	walk
1	cloth	5	hands	1	shawl	1	walking
9	clothes	44	hat	4	she	2	warm
1	club	1	hats	17	man	1	shoe
2	coat	2	head	4	marry	3	shoes
19	cook	1	hire	5	married	1	shopping
3	cooking	3	home	1	me	4	short
5	cooks	1	hose	2	mean	2	silk
1	crone	7	house	1	men	1	sings
		2	housekeeper	1	mend	1	singing
1	dead	1	housework	1	Miss	13	skirt
1	dies			53	mother	7	skirts
5	dishes	1	it	2	neat	1	slim
5	dishwashing			10	nice	1	slow
96	dress	1	Jennie	9	old	5	small
17	dresses	3	kind			1	straight
4	eyes						

24. COLD

5	air	10	coal	16	froze	8	nose	62	snow
2	awful	17	coat	9	frozen	1	numb	1	soup
		1	colder	1	fuel			1	stony
1	baby	13	cool	2	fun	1	old	5	stove
2	bad	37	cough			1	one		
1	beng	1	coughs	1	hand	4	out	3	thermometer
1	below	1	cream	13	hands	9	outdoors	1	thing
1	bird			1	hard	3	outside	1	think
2	biting	1	damp	1	head	13	overcoat	6	today
6	bitter	25	day	1	heat			1	too
10	black	1	do	1	hold	1	pneumonia		
1	blackboard	5	doctor	12	hot	1	pole	8	very
25	blow	3	dog	11	house				
3	bold	1	dreary	4	hunger	1	rain	25	warm
3	boy					1	recent	1	warming
1	breath	6	ears	84	ice	1	red	1	was
4	breeze	4	evening	3	ice-cream	4	room	5	water
1	bundle			6	icy			34	weather
12	burn	5	feel	3	illness	1	severe	7	whooping
3	buttermilk	6	feet	1	is	1	she		cough
		1	felt	1	it	15	shiver	36	wind
1	came	1	fever			5	shivering	5	windy
1	chair	9	fingers	1	Jack Frost	1	shivery	103	winter
1	chase	17	fire			4	sick		
3	child	68	freeze	1	meat	4	skates		
5	chill	40	freezing	1	medicine	6	sleet	8	zero
41	chilly	5	frost	4	mitten	4	sliding		
1	close	1	frosty	1	mold	1	sneeze		

25. SLOW

9	auto	2	dress	2	lame	3	reading	9	time
1	automobile			25	late	3	reads	4	tired
4	awful	9	early	1	lazily	7	run	4	tiresome
		13	easy	138	lazy			2	too
2	babies	3	eating	5	lessons	2	said	1	top
1	baby	5	elephant	14	long	10	school	1	tops
2	bad	1	engine			3	sew	2	tortoise
3	balky			20	man	3	short	3	train
9	behind	65	fast	2	me	1	show	22	turtle
2	bicycle	4	faster	5	molasses	1	slack		
3	blow	3	feeble	4	move	5	sleepy	7	very
2	book	4	feet	2	moving	8	slowly		
16	boy			2	music	2	snail	21	wagon
		19	girl	2	near	1	snake	1	wait
1	can't	3	girls	2	night	2	snow	1	wake
1	cat	2	glow	8	not	1	soft	1	waken
4	child	18	go	2	not quick	2	something	107	walk
2	children	3	goes			1	song	12	walking
36	clock	4	good	1	oh	1	stew	2	walks
4	come			2	old	2	still	4	was
1	cooled	2	happy	2	old	16	stop	1	way
2	cow	1	he	14	oxen	3	stopping	31	work
2	crawl	3	heavy			1	stole	1	worker
		29	horse	3	people	1	stupid	2	working
3	dinner	2	horses	1	pig	1	sum	1	worry
5	dog	20	hurry	4	poke	5	swift	4	write
8	donkey			35	poky			1	writing
1	don't	10	lag			5	talking		
7	drag	1	lagging	4	quick	3	tedious	7	you

26. WISH

3 anything	3 dollar	1 harm	1 nickel	5 thing
2 apple	11 dress	25 have		2 things
9 ask		2 her	1 offer	37 think
2 asked	1 eat	5 home		3 thought
5 asks		10 hope	1 park	2 thousand
1 at home	3 fairies	16 horse	1 pen	1 time
	64 fairy	2 horses	17 pony	2 toy
4 ball	2 father	3 house	4 present	6 toys
3 bicycle	6 fish		2 prince	6 train
3 birthday	2 flowers	6 I		43 true
3 boat	6 for	4 ice	1 rainbow	
85 bone	2 fun	1 ill	5 ribbon	2 wagon
3 book	8 furs	2 it	9 rich	1 wait
4 boy				5 wand
	5 game	2 king	2 sad	99 want
5 cake	18 get		5 Santa Claus	3 wanted
41 candy	7 gift	10 like	1 sane	4 watch
3 cap	1 gladly	3 look	2 school	1 water
3 cat	1 go	1 lot	2 she	6 well
15 Christmas	1 going	17 luck	1 show	2 what
5 come	3 gold		12 skates	1 which
1 cone	19 good	1 mad	4 sled	7 wishbone
6 could	2 grand	3 man	36 something	2 wished
	14 grant	1 me	5 star	3 wishing
	4 guess	4 merry	2 storybook	4 witch
4 desire		1 mish	3 suit	1 with
4 did		12 money		1 worked
3 dish	13 had	1 monkey	1 tall	
3 do	3 happiness		4 telling	2 you
16 dog	3 happy	6 nice	1 the	
46 doll	3 hard			

27. RIVER

4 bath	11 drown	3 high	1 ran	4 small
4 bathing	11 drowned		3 rapid	2 soft
14 big	9 drowning	13 ice	1 riding	30 stream
37 boat		1 icy	1 rivulet	6 swift
1 branches	1 fall		1 road	72 swim
3 bridge	4 fast	42 lake	4 rock	7 swimming
1 broad	34 fish	1 large	3 row	
7 brook	8 fishing	1 lime	5 run	1 that
	1 float	5 long	13 running	
4 canoe	16 flow	3 low	16 runs	433 water
1 cold	5 flowing		3 sail	2 wave
5 current	33 flows	17 Mississippi	1 saw	3 waves
	1 freeze	1 muddy	1 silver	1 wear
44 deep	2 frog		1 silver	10 wide
2 delta	2 froze	1 near	4 skate	1 width
2 dirty	6 frozen		1 sliver	
1 dive		3 ocean	3 slow	1 Yangtze
	2 go over			

28. WHITE

1 air	3 collar	8 goods	1 net	1 sewing
1 angel	116 color	1 gown	10 nice	1 sheep
6 apron	1 colored		1 nightgown	7 sheet
	2 cotton	2 hair		1 ship
1 baby	2 curtain	2 hands	1 old	1 shoes
2 bath tub		1 hard		1 sick
5 beautiful	1 dainty	1 hat	6 paint	2 sky
1 billow	1 dark	3 horse	6 pale	65 snow
1 bird	3 dead	19 house	1 pants	1 soft
28 black	1 dike	1 hurt	54 paper	2 still
1 blackboard	3 dirty		1 people	2 stocking
1 blue	1 do	1 ice	1 pictures	1 swan
1 board	4 dog	1 ice cream	1 pig	1 sweep
1 brave	1 draw		1 pigeon	
3 bread	149 dress	1 jacket	1 pillow	1 table
16 bright	1 duck	1 jam	1 plain	6 tablecloth
		1 kitten	24 pretty	1 thread
4 cat	5 face		4 pure	1 tight
3 chair	1 fast		1 rabbit	1 too
7 chalk	1 fine	1 lace	1 red	1 towels
97 clean	8 flag	125 light	1 rib	1 veil
4 clear	1 flight	2 lovely	14 ribbon	1 very
1 cloak	1 flour			

61 cloth	4 flowers	1 man	1 right	
5 clothes		2 mice	1 rims	6 waist
1 cloud	2 ghost	7 milk		1 walls
1 clouds	1 gleam	1 my	1 sail	1 wear
3 coat	1 goat		1 screen	
1 coin	1 good	1 name	1 see	2 yellow

29. BEAUTIFUL

1 are	6 dog	7 hat	2 name	4 she
10 baby	28 dress	4 homely	169 nice	1 shine
1 be		9 horse	1 niceful	9 silk
19 beauty	4 face	7 house		3 skin
1 bed	1 fair		2 palace	3 stars
3 belle	1 feet	1 is	4 park	2 store
5 bird	3 fine		1 petticoat	7 sun
1 birds	1 flag	1 jewelry	15 picture	3 sunset
1 bright	6 flower		3 pictures	3 sweet
7 butterfly	37 flowers	38 lady	1 plant	2 swell
1 bury	1 forest	4 lake	5 pony	
	1 fountain	3 laugh	2 powder	1 thing
1 careful	4 garden	2 like	280 pretty	3 tree
1 carriage	27 girl	3 lion	3 prince	
12 cat	1 glorious	1 look	4 princess	3 very
3 child	3 good	3 looking		
1 class	1 gorgeous	3 looks	3 ribbon	2 wagon
2 clean	2 graceful	4 love	1 rich	13 woman
5 coat	10 grand	1 loving	3 ring	5 women
14 color	3 great	8 lovely	2 river	12 wonderful
5 cute	1 green		9 rose	4 woods
		1 magnificent	2 roses	3 wreath
3 day	7 hair	2 man		
1 diamonds	1 have	1 mother	2 satin	9 you
30 doll	13 handsome	1 mountain	2 scenery	
		1 muff		

30. WINDOW

8 air	3 dirty	1 icicle	5 room	4 sun
	2 door	1 invisible	1 run	
1 ball	1 down	1 it		1 take
8 big			1 sale	1 through
1 blows	1 fall	2 large	1 sash	1 toys
1 board	6 frame	47 light	1 sat	4 tree
13 break	1 fresh	3 little	2 school	5 trees
1 breeze	1 frost	116 look	1 screen	
1 brick	1 frosty	2 looked	36 see	9 up
37 broke	1 froze	2 looking	1 seeing	
23 broken	1 frozen	8 lookout	6 shade	1 varnish
			2 shines	
1 church	1 girl	24 open	1 shiny	12 wash
1 class	1 glance	6 out	1 shot	1 white
6 clean	421 glass	4 outdoors	5 shut	5 wide
1 close	1 grass		9 sill	2 wind
21 cold		62 pane	2 stained	1 windmill
1 cooler	1 hall	1 pillow	1 stare	2 windows
1 comfort	12 house	1 plate	1 straight	1 wood
7 curtain			1 streetcar	
1 curtains	1 I	1 rattle	1 storm	

31. ROUGH

2 angry	2 decay	2 horrid	1 pain	8 sidewalk
2 arc	3 dirt	2 horse	12 paper	2 skin
	3 dog	1 humpy	3 place	2 slivers
16 bad	1 doll	8 hurt	2 plain	2 small
1 bear	2 door	1 hurtful	5 plaster	35 smooth
2 heard	1 dress		25 play	1 soft
4 big		9 ice	3 playing	1 stand
27 board	1 enemy	1 iceberg	1 pleasant	1 sticker
1 book		2 irregular	2 poor	11 stone
89 boy	1 fall		1 pump	4 stones
37 boys	6 fight	2 jagged		1 stove
2 broom	2 fighting	2 jerky	1 rat	2 stumps
2 bump	1 file		1 railway	
23 bumps	2 files	1 knot	1 red	2 table
61 bumpy	1 flat		1 ribs	1 tear
	15 floor	2 language	2 right	1 torn

1 cake	2 football	1 leather	41 road	7 tough
1 candy	2 frog	1 line	8 rock	1 tree
4 careless	3 fur	1 logs	4 rocks	
1 carpet	1 fuzzy	2 lumpy	10 rocky	1 uncomfortable
1 chair			1 roof	13 uneven
1 chap	1 gentle	11 man	2 round	1 unkind
5 chapped	1 girl	71 mean	2 rowdy	2 unlevel
1 Charles	1 glass	1 meat	3 rude	2 unsmooth
7 child	1 goody	1 men	1 rug	
6 cloth	1 grass	3 mountain	10 rugged	1 voice
2 clothes	14 ground	5 mountains	1 rush	
1 clumsy	1 gruff	1 mouse		1 wall
4 coarse			6 sand	4 water
1 coat	13 hand	1 nasty	2 sandpaper	2 waters
1 cocoa	15 hands	3 naughty	2 sandy	4 waves
1 come	144 hard	1 no good	4 sea	1 wind
1 cough	1 hill		2 shaggy	15 wood
1 crooked	3 hit	8 ocean	1 shake	1 work
1 cut-glass	4 hitting	1 old	1 shoes	1 wrestle
		1 ouch		

32. STORK

1 Africa	4 chimney	3 Germany	11 long-legs	1 ship
14 animal	1 colors	1 girl	1 many	1 shoot
1 animals	1 crane	1 going	1 mean	1 shot
			1 meat	1 skin
34 babies	1 dear	1 have	1 mother	1 slender
287 baby	1 duck	1 head		2 small
11 beak	2 Dutch	9 Holland		1 spaghetti
26 big		1 house	4 neck	1 stole
16 bill	1 eat		14 nest	1 stories
372 bird	1 eggs	1 I	1 nice	1 strange
2 bring		1 is		1 swift
1 brook	1 fast		1 ostrich	
1 brother	1 feather	1 kill		4 tall
1 building	6 feathers		1 plan	1 talk
	1 fish	2 large	1 play	
1 carried	19 fly	3 leg		2 walk
2 carries	1 flies	41 legs	1 quick	3 white
1 carry	1 foot	1 life		4 wing
1 chicken	1 fork	14 long	1 river	35 wings
1 children	1 frogs	1 long-leg	1 rork	

33. FOOT

11 ache	1 dog	1 ladder	1 piece	1 stockings
1 afoot		1 lady	1 print	1 stool
15 ankle	1 fat	1 lame		1 strong
	71 feet	6 large	1 rough	1 swollen
1 ball	1 figure	1 leak	1 rule	
3 bare	1 fingers	79 leg	1 ruler	1 teacher
2 barefoot	1 fleet	36 legs	22 run	1 tiny
1 beat	2 flesh	1 like	1 runs	1 tired
27 big	1 football	8 little		34 toe
1 black		1 look	1 shape	81 toes
11 body	4 go	1 loot	73 shoe	1 track
10 bone	1 go on	11 long	8 shoes	1 twelve inches
1 bones		1 lumber	1 shot	
1 boot	1 had		5 skin	1 useful
1 boots	5 hand	12 man	1 slipper	
1 bottom	5 hands	1 march	7 small	205 walk
16 break	1 heel	1 measure	1 soothe	3 walked
7 broke	18 hurt	1 measurement	23 sore	8 walking
3 broken	1 hurts	1 muscle	1 sort	38 walks
		1 my	1 sour	1 warm
3 clean	1 inches		1 square	1 wide
6 cold		5 nails	1 stamp	1 wiped
21 corn	2 jump		1 stank	1 wonderful
4 corns		1 one	3 stand	1 work
1 crawls	6 kick		11 step	
2 cut	1 kicked	1 people	1 stink	1 yard

34. SPIDER

5 afraid	1 cobwebs	1 funny	4 lucky	2 sews
36 animal	1 cones			1 shanty
1 ant	2 cook	1 glass	1 mean	1 six legs
1 awful	1 corner	1 grown	1 meat	8 small

1 bad	18 crawl	1 hang	1 mider	1 soft
1 banana	4 crawling	1 head	1 Muffet	10 spin
14 big	54 crawls	1 hid	2 nasty	6 spins
2 bit	6 creature	1 hoops	1 nice	1 spun
25 bite	2 crept	1 hornet	1 no	1 stepped
2 biter	1 crow	7 house		2 sting
5 bites	1 daddylonglegs		4 pan	1 trap
1 biting	1 dirt	57 insect	1 parlor	
4 body		1 insects	36 poison	3 ugly
1 boy	5 eggs		2 poisonous	
83 bug	1 enemy	4 kill	1 put	19 walk
1 build	1 eye	4 killed		5 wall
1 burn		1 kind	1 reptile	1 wasps
1 butterfly	1 face		2 round	261 web
	1 farm	1 large	2 run	2 webs
1 catch	6 feet	1 leg	3 runs	7 weave
1 caught	1 flea	107 legs		1 wing
1 claws	40 fly	17 little	1 scare	2 worm
2 clmb	1 flycatcher	19 long	1 see	
12 cobweb	9 fry	11 longlegs	1 sew	

35. NEEDLE

1 angry	2 eyes	1 long	2 pricked	2 sticks
1 article				1 sting
2 awake	1 feather	3 machine	1 reedle	1 stockings
	7 finger	2 mother		1 string
1 beetle	1 food		2 scratch	
1 bench		2 nickel	449 sew	4 thin
2 bend	3 good		3 sewed	1 thing
1 bumpy		1 old	1 sewer	72 thread
	5 head		81 sewing	1 tin
8 cloth	11 hole	5 pick	3 sews	1 tool
1 clothes	3 hold	1 pierce	56 sharp	
	1 hurt	36 pin	2 sharpened	1 wire
1 doll		1 pins	3 silver	6 work
17 dress	1 lamp	23 point	11 small	
	7 large	5 pointed	23 steel	
41 eye	17 little	16 prick	39 stick	

36. RED

1 afraid	1 children	3 goods	2 nose	1 run
42 apple	1 Christmas	4 green		
14 apples	65 cloth		1 orange	1 sale
1 at	9 coat	10 hair		11 scarlet
	1 cold	2 happy	24 paint	2 school
1 baby	298 color	5 hat	1 painted	1 see
6 ball	1 colors	1 head	7 paper	1 shiny
12 barn	1 cows	1 homely	1 papers	1 sled
1 bead	1 crayon	1 hood	2 pencil	1 squirrel
1 bell		1 hot	1 pillow	1 star
1 bells	31 danger	7 house	1 pinch	1 stockings
3 belt	6 dark		3 pink	1 story
1 bench	1 dirty	4 Indian	14 pretty	10 sweater
14 blood	1 door			1 Sweden
9 blue	1 draw	13 lantern	1 radish	
35 book	85 dress	2 led	5 read	1 talk
1 books	1 dresses	1 letters	1 ready	1 that
1 bow		15 light	1 remarkable	1 thread
1 box	1 eraser	1 lip	16 ribbon	
1 bread		1 look	1 ring	4 waist
68 bright	2 face		1 river	1 wake
	9 fire	1 morn	1 road	1 war
1 calendar	24 flag		1 robin	18 white
6 candy	4 flower	1 needle	1 rose	1 words
1 canoe	2 flowers	2 nice	1 rosy	
4 cap	1 fly		2 rug	1 yellow

37. SLEEP

1 asleep	1 down	1 keep	1 peace	4 slept
14 awake	3 doze		1 peacefully	6 slumber
1 awake	55 dream	5 late	1 people	15 snore
	5 dreaming	9 lay	8 pillow	1 snores
28 baby	6 drowsy	1 lays	1 pray	1 snoring
351 bed	1 dust	6 lazy		24 sound
31 beds		1 leap	1 quiet	5 still

1 bird	1 enough	1 lie	1 quilt	1 sweep
6 boy	1 eye	1 lies	12 quilts	
1 boys	40 eyes	1 like		1 take
1 bride		3 long	40 rest	1 time
1 buggy	1 fall		1 resting	67 tired
	3 fast	9 man		
1 calm	1 fine	1 me	1 see	1 uncle
1 candy		1 meet	1 senseless	
6 child	1 gentle	1 morning	1 she	6 wake
1 clean	1 girl	1 mothers	1 sheep	1 waken
5 close	1 go	3 much	1 sheet	1 we
1 closed	7 good		5 shut	1 went
1 crept	1 goodnight	15 nap	1 shutting	1 will
1 cross		4 need	1 silent	1 woman
	1 happy	3 nice	4 sleeping	1 writing
16 dark	1 hard	95 night	9 sleepy	
1 did			1 sleepyhead	1 you
1 do	1 I	1 papa	1 sleet	

38. ANGER

1 Alonzo	1 disobey	1 hands	53 mean	1 spank
1 angrily	6 dog	3 happy	1 mind	1 spanking
20 angry		1 harm	1 mother	1 strong
1 ant	1 eat	3 he		7 swear
1 at		1 him	1 naughty	
	1 fancy	1 horse	6 nice	6 teacher
1 baby	4 fierce	1 hungry		8 temper
17 bad	57 fight		1 on	1 tiger
1 bashful	19 fighting	1 I	1 play	5 tired
1 beer	1 finger	6 kill		8 ugly
1 bet	1 flop	1 killed	12 quarrel	1 unhappy
1 blow	1 funny		1 quarreling	
38 boy	1 furious	1 lady	1 quick	1 very
15 boys	1 fury	1 language		
	3 girl	1 langer	1 rough	1 walk
1 children	1 girls	1 large		1 we
10 cranky	9 glad	1 lion	1 saucy	1 weary
1 cries	7 good	1 lookout	10 scold	1 whack
56 cross	1 grave	471 mad	3 scowl	1 wicked
1 crossness	1 greedy	1 madness	1 sin	1 wild
1 cruel	1 grouch	1 mamma	1 soften	1 wolf
6 cry	1 grow	45 man	9 sore	11 woman
	1 growl		1 sorrow	

39. CARPET

20 beat	1 down	10 lays	9 rag	1 sweeps
1 beating	9 dust	1 like	4 rags	1 swept
9 beautiful	15 dusty	1 little	1 ragged	
4 big		1 long	8 red	2 tack
1 black	1 fall		1 rolled	20 tacks
6 blue	1 feet	1 man	2 room	1 the
1 border	1 felt	1 marble	4 rough	1 thread
9 broom	1 flat	12 mat	245 rug	1 torn
2 brown	149 floor	1 mice	2 rugs	
1 brush	2 flowers	1 moth	1 run	6 velvet
3 brussels	1 foot	1 mothers		
	2 front	1 muddy	1 Saturday	88 walk
3 chairs	2 fur		1 shake	3 walked
1 children	2 furniture	15 new	1 sing	1 walking
18 clean		15 nice	5 small	2 walks
19 cloth	3 green		7 smooth	1 warm
16 color		1 on	28 soft	1 wash
3 colors	1 hall		2 square	1 we
1 cover	1 have	1 person	1 stain	1 weave
	12 home	1 pit	1 stand	1 weed
1 design	30 house	1 poor	4 step	1 wheels
1 designs		16 pretty	1 straw	1 will
10 dirt	6 large	1 put	45 sweep	1 wipe
35 dirty	2 lay		1 sweeper	1 women
				1 woven

40. GIRL

1 anger	1 dolls	1 her	2 money	2 she
11 baby	240 dress	6 home		8 shoes
34 beautiful	23 dresses	1 homely	1 neat	1 sing
		3 house	24 nice	4 sister

1 beauty	2 eat	6 human		2 skirt
2 being	11 eyes			2 skirts
22 big		1 June	1 Pearl	2 small
40 boy	19 face	1 jumping	5 people	1 sole
1 boys	1 fair		18 person	2 stockings
2 bracelet	1 fancy	7 kiss	1 pies	2 sweet
	5 feet		1 plant	11 walk
1 cap	22 female	1 lad	18 play	
45 child	1 flirt	26 lady	3 playing	1 talks
12 children	1 flower	5 laugh	2 playmate	1 that
2 clean	1 foot	1 legs	3 plays	1 there
26 clothes	1 full	7 little	1 poor	
1 clothing	8 furs	1 live	25 pretty	3 walks
1 coat		5 love	2 punk	1 wash
10 cook	1 giggle			1 washes
1 creature	2 girls	3 maid	19 ribbon	1 went
1 cry	17 good	2 maiden	5 ribbons	1 where
1 curl	1 grow	1 Margaret	1 rill	1 wife
3 curls		1 Marion	3 run	8 woman
1 cute	38 hair	4 mate		1 women
	10 hands	2 me	21 school	8 work
1 dancer	1 happy	5 mean	1 scold	1 wrangle
1 daughter	17 hat	1 mirth	2 sew	1 write
23 doll	1 have	4 miss	1 sewed	
			1 sews	2 you
				8 young

41. HIGH

2 above	9 church	2 gastank	1 lumber	1 ship
4 aeroplane	1 class	1 globe		1 sing
9 afraid	10 cliff	1 goat	1 man	1 size
50 air	1 climb	5 good	1 money	22 sky
4 airship	1 clock	1 goodies	1 moon	1 so
1 Alps	3 clouds		120 mountain	1 stand
7 apple	3 cold	1 hair	5 mountains	1 stars
10 apples	1 courthouse	1 hard	1 my	30 steep
1 are	1 crust	1 heaven		1 steeple
	1 cut	10 height	1 nest	1 step
1 bakery		92 hill	4 nice	1 sun
1 balloon	16 deep	1 home	2 nigh	14 swing
3 bank	1 did	32 house	1 number	
1 beans	3 distance			56 tall
1 bees		1 in	1 oranges	1 thought
14 big	1 ear	1 iron		1 throw
5 bird	18 eat		2 peak	1 tone
1 birds	3 eating	7 jump	8 peaks	5 top
1 blow	1 embankment	1 jumped	1 picture	13 tower
1 boy	1 every	1 king	1 post	7 tree
1 build				5 trees
32 building	22 fall		10 reach	
1 bush	58 far	1 ladder	1 righ	60 up
7 butter	1 fate	1 large	1 road	
	2 fence	3 length	1 rock	3 very
1 cake	1 flagpole	1 light	12 rocks	1 vines
3 castle	1 flower	8 long	16 roof	
8 ceiling	1 flowers	1 look	1 room	9 wall
7 chair	24 fly	1 loud	1 rug	3 way up
1 children		25 low		2 windmill
			1 school	

42. WORKING

3 bad	1 driving	1 helping	3 noon	1 slow
1 bank	1 drudging	7 home	1 not	1 stonequarry
2 beds	1 dust	20 horse		1 stop
1 bench	1 dusting	1 hot	9 pay	12 store
1 better		1 house	1 people	2 strong
1 blind	10 earn		1 pinch	11 study
8 books	1 earning	6 job	34 play	2 sturdy
1 boss	1 eat		11 playing	3 sweat
7 boy		18 labor	1 plumber	
1 boys	2 factories	1 laboring	1 pop	2 task
1 bricks	6 factory	1 lace		1 thrifty
1 build	1 farm	1 late	1 rake	29 tired
49 busy	6 farmer	13 lazy	1 rate	1 today
	1 fast	2 learn	9 rest	2 toil
2 carpenter	12 father	4 learning		1 ton
1 chair	1 fireman	1 light	1 sand	1 tools
1 chop		4 loafing	1 saving	1 tied

1 cigar	3 garden	1 lumber	1 scholar	
15 clothes	2 girl		13 school	3 wash
1 crust	5 girls	6 machine	1 scrub	1 well
	1 good	1 machinist	10 shop	10 woman
8 day		1 make	1 shopping	3 women
1 digging	1 hammer	93 man	2 shovel	2 wood
19 dishes	1 hand	1 mark	1 shovelling	19 work
9 do	7 hands	53 men	1 shovels	2 worked
4 doing	299 hard	4 mind	1 slave	1 workman
1 done	1 he	1 mining	1 sleep	1 workmen
1 doughnut	4 help	27 money	1 sleeping	1 writng

43. SOUR

47 apple	54 eat	8 kraut	1 peaches	1 sting
49 apples		57 lemon	21 pickle	1 stomach
7 ate	1 face	3 lemons	89 pickles	4 strong
	1 food	1 liquid	1 pie plant	1 sugar
25 bad	19 fruit	1 lour	1 pills	75 sweet
63 bitter			1 plum	
1 boy	33 good	1 meat	1 plums	28 taste
1 burns	1 grape	124 milk	1 poison	1 tasteful
3 buttermilk	8 grapes		1 radish	1 tastes
	9 green	6 nasty	1 rotten	1 that
3 cabbage		8 nice	4 salad	1 things
9 candy	13 hard	1 no	7 salt	1 too
1 cider	1 have	1 not	1 salts	1 tour
1 corn	1 horrid		4 sauce	1 unhappy
1 cow		1 onion	1 scour	1 unpleasant
1 cranberries	1 it	1 our	1 sorry	1 unsweet
52 cream	9 juice	1 onions	1 soup	
4 cucumber	1 juicy	8 orange	24 sauerkraut	53 vinegar
		17 oranges	1 spoiled	1 very
1 dill	1 kettle			1 warm
1 drink		1 pancake		1 water

44. EARTH

4 air	1 feet	4 houses	4 plant	2 star
1 awful	2 fertile		1 plaster	1 step
	1 fire	1 in	5 play	1 stone
18 ball	2 flowers	1 is		1 stones
21 big	1 food		5 quake	1 stream
2 birth	3 frightened	43 land		
73 black	1 froze	34 large	1 rabbit	4 tree
1 blue	1 frozen	1 light	3 roads	3 trees
1 boy		38 live	2 rock	
1 bright	4 garden	1 lovely	1 rocks	1 vegetable
1 brook	4 globe		5 rocky	
	1 God	1 man	1 rough	15 walk
1 city	1 good	1 meek	82 round	1 walking
1 cloud	9 grass	1 moist		3 warn
1 coat	2 gravel	1 mother	39 sand	4 water
3 cold	2 green	1 mountain	2 seed	1 we
1 color	1 grit	1 mud	1 shack	1 woods
1 corn	223 ground	1 muddy	1 shovels	1 work
	1 grow		1 sinking	30 world
1 deep		2 nature	6 sky	1 worms
1 dig	31 hard	1 nice	1 snow	
1 dirth	7 heaven	1 nose	1 sod	1 yard
102 dirt	5 hemisphere		4 soft	1 you
1 dug	3 high	1 open	4 soil	
	10 hole		1 solid	
9 earthquake	33 house	23 people	3 sphere	

45. GARDEN

1 angel	13 eat	1 grown	6 nice	1 raked
1 apple		9 grows		3 rose
36 apples	2 farm		2 onions	5 roses
	1 father's	7 hoe		1 round
1 baby	2 fence	1 hoeing	1 pansy	
15 beautiful	4 field		1 pardon	4 seed
1 beet	1 first	1 I	3 peas	8 seeds
13 big	132 flower		1 person	2 shovel
	327 flowers	4 land	37 plant	1 soil
5 cabbage	2 food	1 large	1 planting	2 sow
1 cakes	1 fragrant	1 lilies	20 plants	3 summer
	52 fruit			

2 carrot	3 fruits	1 made	3 play	3 tomatoes
20 carrots		5 make	1 poppies	
12 corn	3 gardener	5 man	3 potato	
1 club	2 good	1 marden	32 potatoes	28 vegetable
1 den	1 grand	1 men	5 pretty	38 vegetables
10 dirt	1 green	1 mine	2 pumpkin	
	19 ground	1 mother's	3 radish	1 weather
	34 grow	1 mud	1 raise	1 wet
9 earth	5 growing			2 yard

46. SOLDIER

1 am	7 danger	9 guard	1 navy	26 sword
1 are	3 dead	61 gun	1 nice	
1 armor	1 die	1 guns		1 tall
63 army	2 died		1 of	
	1 drill	2 hard	4 officer	4 uniform
1 bang		2 hat	6 old	1 United States
14 battle	1 enemy	1 he		
1 blue		1 I	1 papa	1 walking
3 boy	160 fight	1 is	1 patriotic	203 war
53 brave	2 fighter		1 poor	1 warring
1 bride	40 fighting	8 killed	1 powder	5 warrior
	10 fights			1 word
1 cadet	1 flag	1 leg	1 sad	1 work
1 camp	1 for		1 save	1 working
1 cannon		95 man	17 shoot	1 worries
24 captain	1 general	36 march	4 shot	2 worry
1 citizen	3 German	1 go	1 stab	1 worth
5 command	1 go	1 marches	2 stand	1 wound
7 comrades	5 good	6 marching	1 star	1 wounded
1 country	1 great	3 men	32 straight	2 write
1 cruel	1 grows	2 money	8 strong	
		2 musket	6 suit	3 young

47. CABBAGE

1 apples	9 eating	47 head	1 peeling	1 sick
1 ate		1 heart	27 plant	6 smell
	4 farm	1 house	2 pork	31 soup
1 bad	1 field	1 hungry	1 pot	12 sour
5 big	2 fine		1 potatoes	1 spareribs
1 boiled	3 food	1 I	1 pumpkin	1 spoiled
11 bugs	1 fresh	1 it		7 stewed
1 bread	1 froze		13 rabbit	1 strong
	1 fruit	2 kraut	25 rabbits	1 stump
3 carrot			1 raw	15 supper
9 cellar	1 garbage	1 lazy	2 roots	3 sweet
42 cook	46 garden	9 leaf	3 rotten	
13 cooking	40 good	62 leaves	26 round	140 vegetable
	21 green	1 lettuce		34 vegetables
1 did	17 grow	1 like	7 salad	
11 dinner	1 growing	4 nice	1 sauce	1 well
	3 grows		1 saucer	9 white
193 eat		3 patch	34 sauerkraut	4 worm
1 eatables	3 hard		1 scent	
			2 sell	1 yard

48. HARD

13 apple	1 can't	4 hand	1 pound	1 strong
1 apples	2 cement	10 heavy	1 press	1 stuck
	4 chair	3 house	1 pudding	1 sweep
5 bad	1 chalk	2 hurt		
1 baked	1 chosen		1 radiator	1 tack
16 ball	2 chunk	33 ice	1 ring	1 test
1 bard	1 coal	1 ice-cream	1 road	1 that
1 bat	1 cracked	36 iron	92 rock	1 there
1 bed	9 crust		1 rocks	1 thick
5 big		1 jelly	1 rocky	1 thing
2 bite	1 desk		29 rough	1 throw
2 black	13 dirt	4 lard	1 rub	7 tough
26 board	1 do	1 log		
1 bone	1 door	1 look	1 sharp	1 very
1 bones		3 lump	1 sidewalk	
39 bread	17 earth		1 slippery	1 was
28 break	1 easy	1 man	25 smooth	1 water
1 breakable		1 Marie	14 snow	1 winter

22 brick	1 fight	2 mean	65 soft	30 wood
1 bricks	54 floor	3 nut	17 solid	1 word
1 bumpy	1 frozen	1 old	1 sore	89 work
1 butter	4 glass	4 packed	1 sort	1 worker
1 cake	1 good	1 plate	1 stiff	2 working
1 can	51 ground	2 play	113 stone	1 worry
48 candy				

49. EAGLE

1 air	3 cloud	3 gray	9 mean	1 small
19 American	1 condor	2 head	1 miegle	1 soar
1 angry	1 coward	1 hen hawk	35 mountain	1 steal
6 animal	1 dog	6 high	1 name	1 strength
11 baby	6 eat	1 imagination	18 nest	30 strong
1 banner	1 eggs	1 insect	2 owl	1 swift
2 beak	1 emblem	1 insects	2 pretty	1 swoop
2 beast	1 eyes	1 invisible	1 play	1 talons
1 beater	9 feather	1 kidnap	1 reagle	1 teeth
52 big	28 feathers	1 kill	1 robber	3 thief
2 bill	1 fierce	1 king	2 run	1 took
373 bird	2 flag	1 lamb	1 savage	4 United States
2 birds	1 flew	19 large	2 scratch	2 warbird
3 bite	26 flies	1 lodge	1 seven	1 white
6 black	120 fly	3 mad	2 show	43 wing
1 bregle	10 flying	3 man	1 size	49 wings
1 chicken	1 gander		1 slide	1 work
1 child	1 good			1 wrong
30 claws				
1 cliff				

50. STOMACH

189 ache	2 cramps	1 grind	1 meal	22 sore
3 aches	8 digest	1 grow	2 mean	1 sound
1 apples	1 digestion	1 guts	1 meat	3 sour
1 ate	1 dinner	1 had	1 milk	1 steak
13 bad	1 doctor	1 hammock	1 music	1 stick
1 ball	1 drouth	3 hard	1 name	1 stone
48 belly	2 each	7 healthy	1 out	1 stumble
1 belt	108 eat	21 heart		1 swallow
3 big	1 eatable	1 heavy		3 throat
2 bladder	16 eating	1 hill	18 pain	1 tomato
2 blood	1 eats	6 hungry	1 people	2 treat
78 body	5 empty	23 hurt	1 person	1 tripe
2 bones	1 fall	5 hurts	10 poor	11 trouble
1 born	1 false	1 I	1 pudding	1 tube
4 bowels	16 fat	5 indigestion	1 rice	1 veins
9 boy	1 feed	9 inside	1 ring	1 velvet
3 bread	2 feeling	6 insides	1 rock	1 vital
3 breast	1 feet	1 intestine	1 rotten	
2 breathe	1 felt	4 kidney	3 round	1 warm
1 brick	2 flesh	1 lazy	1 see	1 water
1 candy	82 food	1 light	1 short	15 weak
4 care	1 for food	1 little	85 sick	1 well
4 chest	19 full	1 liver	1 sickness	3 white
2 clean	1 garbage	1 lumic	13 skin	1 wood
1 close	23 good	6 lungs	1 soft	
1 cold				

51. STEM

25 apple	15 corn	1 hard	1 pick	1 string
1 bad	1 crooked	1 have	1 pin	1 strong
1 beginning	41 cut	1 hold	42 pipe	1 sugar
1 bend	1 down	1 holds	25 plant	1 system
1 bent	1 earth	3 hollow	1 plants	
1 berries	1 eating	14 juicy	1 point	5 tall
14 big	8 end	1 large	1 red	1 them
1 bitter			2 reed	1 thick
				11 thin

1 black		11 leaf	13 root	1 top
1 blossom	1 firm	1 leaves	3 rose	35 tree
1 boat	367 flower	3 letter	1 roses	1 trees
1 body	80 flowers	3 lily	1 rough	1 trunk
1 bone	1 foot	6 limb	1 rubber	9 twig
1 bough	1 froze	60 long		
16 branch	1 fruit	1 look	4 short	1 vine
1 broke		1 lots	6 slender	
20 broken	1 gray		3 slim	8 weed
1 brown	1 grass	1 paint	1 small	1 white
1 buds	48 green	1 paper	1 sort	1 wide
1 burn	1 ground	1 part	4 stalk	8 wood
	9 grow	1 paste	1 stand	
f came	1 growing	1 pen	10 stick	
1 cord	1 grows	1 pencil	2 straight	

52. LAMP

1 bedtime	1 ceiling	12 gas	1 lantern	4 shade
3 big	18 chimney	50 glass	648 light	2 shine
1 blaze	1 color	5 globe	4 lights	1 sleep
1 blow	1 command	3 good		1 small
1 blue			1 nice	2 smoke
1 box	1 damp	1 hanging	6 night	1 stamp
3 break	1 dark	1 hard		4 street
8 bright	1 desk	1 have	38 oil	
1 broke	1 down	10 home	1 oily	1 tipped
1 broken		1 hook	3 out	
70 burn	1 exploded			1 white
1 burns	1 explosion	1 is	1 pretty	19 wick
10 burning				1 wool
	22 fire	4 kerosene	1 red	
1 camp	9 fires	1 kitchen		1 yellow
1 cat	3 flame		3 sec	

53. DREAM

2 about	1 cry	1 happened	3 picture	1 talk
6 afraid		12 happy	1 pictures	1 tell
1 alas	4 dark	1 hear	9 pleasant	5 thing
1 Alice	1 day	1 her	1 position	13 things
2 angel	1 dies	2 horses	1 pretty	30 think
1 angels	3 do	1 house		2 thinking
1 animal	1 doll		1 quiet	3 thought
7 asleep	1 doze	1 imagination		1 thoughts
5 awake	2 dreaming	8 imagine	1 rats	1 train
4 awful	1 dreamland		1 ream	1 true
	1 dreamt	1 lady	1 robbers	
2 baby	1 dresses	1 lake	1 rose	1 used
31 bad	1 drowsy	1 laugh		
1 bear		1 lessons	1 Santa	4 vision
1 bears	1 fairies	1 like	1 scared	1 visions
20 beautiful	3 fairy	1 lions	1 school	
78 bed	2 fairyland	3 long	1 scream	1 war
1 bedtime	1 fierce		4 see	1 was
1 bird	4 fight	8 man	1 sister	1 water
1 boat	4 fire	1 mare	272 sleep	1 way
1 book	1 flowers	1 mine	8 sleeping	1 what
6 boy	3 fun	1 money	1 sleepy	2 window
1 burglar	13 funny		4 something	5 wonder
		1 never	1 spirit	4 wonderful
1 can	4 ghost	9 nice	6 stories	1 wondrous
1 car	7 girl	260 night	8 story	
1 cat	1 gleam	3 nightmare	6 strange	1 yell
1 children	20 good	1 noise	1 sweet	
1 cream		1 nothing		

54. YELLOW

3 apple	1 coat	3 golden	8 nice	1 ruler
	1 corn	10 goldenrod		
1 ball	320 color	1 good	81 orange	2 saffron
11 banana	1 colored	9 green	1 oranges	1 sea
1 beautiful	3 colors			1 shine
1 bed	1 cream	3 hair	21 paint	1 silk
1 bicycle		1 hair ribbon	1 pale	1 skin
4 bird	4 daisy	1 hall	1 pants	1 spelling
1 black	15 dandelion	3 hat	3 paper	1 stars
1 blossom	1 dark	1 honey	1 peach	1 suit

3 blue	1 dish	3 house	1 peaches	1 sulphur
3 book	1 do		1 peanut	5 sun
1 box	1 draw	1 I	9 pencil	5 sunflower
30 bright	129 dress	1 is	1 pillow	
1 brother		1 Japan	1 pink	1 tulips
3 brown	1 egg		1 plant	
8 butter		1 lantern	14 pretty	1 very
1 buttercup	1 fellow	1 leaf	1 pumpkin	
7 butterfly	1 fever	13 lemon		4 waist
	1 fire	59 light	1 race	5 white
4 cake	105 flower		7 red	1 woodwork
1 canary		1 mellow	1 rellow	
1 Carlo	1 girl	1 money	7 ribbon	1 yeast
1 clock	1 globe		1 river	1 yellowish
8 cloth	1 gold		1 rose	

55. BREAD

1 all gone	1 crumb	1 fresh	1 life	1 raisin
2 ate	8 crumbs	1 ginger	1 light	13 rye
1 bad	3 crust	90 good	1 like	
13 bake	1 cut	4 grain	10 loaf	1 said
9 baked	1 daily	1 hair	1 loaves	3 salt
1 baker	1 dead	11 hard	1 lot	1 sandwich
9 baking	3 dinner	1 have	3 made	9 soft
1 Belgium	80 dough	1 homemade	5 make	5 stale
3 biscuit	1 dry	1 honey	2 meal	1 strength
1 black		3 hungry	1 milk	1 supper
1 breath	356 eat		1 mother	3 sweet
3 brown	1 eatables	1 it	1 oatmeal	1 taste
1 burn	14 eating	5 jelly	1 oven	1 Tip Top
68 butter	1 eats		1 piece	1 use
	1 five cents	1 kind	1 pudding	
3 cake	95 flour	3 kneed	1 rabbit	1 Wanda
2 coffee	37 food	2 knife		7 wheat
3 cook	1 fried			48 white
1 crisp				

56. FLAG

33 America	2 drill	1 knew	1 Polish	1 stars &
95 American			2 post	stripes
1 any	1 English	1 lag	14 pretty	3 state
5 army		1 land	1 proud	1 stick
	1 fell	1 language		9 stripe
1 bag	4 fly	1 liberty	5 rag	1 striped
38 banner	1 flying	1 lines	1 raised	26 stripes
1 battle	6 free	2 love	94 red	1 Swede
1 beautiful	2 French		1 red & white	1 sword
15 big		1 make	19 red, white	
1 birthday	3 German	2 man	& blue	1 tag
1 blow	1 Germany	2 march	1 Russian	1 train
28 blue	6 good	15 nation	1 salute	1 truth
2 brave	2 goods	2 nationality	2 school	19 United States
3 bright	1 green	2 native	1 shine	
	1 hag	1 navy	1 signal	1 war
1 carry	3 high	4 nice	3 silk	62 wave
1 cling	1 hold		2 soldier	39 waves
34 cloth	1 hurrah	2 our	2 soldiers	11 waving
25 color		2 ours	1 staff	1 wavy
1 colored	1 Irish	2 play	5 star	1 we
88 colors		2 pole	36 stars	5 white
1 continent	6 July			1 window
121 country				

57. BOY

1 active	1 ear	2 health	7 mean	3 shirt
1 afraid	1 eat	1 hearted	1 mouth	8 shoes
	2 errand	1 height	1 myself	1 shout
6 baby	2 eyes	1 help		1 sister
36 bad		1 home	2 name	25 skate
55 ball	2 face	1 horse	9 naughty	2 skates
1 bean	1 fat	3 human	3 necktie	1 skating
1 being	2 feet	1 hungry	1 negro	1 ski
1 bicycle	11 fight		17 nice	1 skull
9 big	2 fighting	1 jacket	1 nightmare	9 small

2 blue	1 fights	1 John	1 no	6 snowball
1 body	1 fish	1 jump		4 son
1 boyhood	1 fishing	1 Junior	63 pants	1 store
3 boys	7 football		5 people	7 strong
3 brave	1 foy	10 kid	26 person	6 suit
2 bright	1 frank	1 killed	84 play	1 swim
1 brother	8 fun	1 kites	1 playful	
1 bum	1 funny		3 plays	2 tie
		1 lad	1 poor	1 toe
53 cap	6 games	2 large	1 pretty	1 toes
45 child	2 gentleman	1 laugh		2 toy
14 children	32 girl	1 lazy	1 quick	1 trouble
1 clean	1 girls	3 leg		16 trousers
9 clothes	1 go	1 like	1 race	
9 coat	37 good	1 limbs	1 read	1 Vivian
1 color	1 grocery	12 little	1 red	
1 cows	2 grow	1 living	1 rich	2 waist
1 creature	1 growing	1 loy	1 romp	2 wagon
		1 luck	18 rough	1 walk
1 darkey	5 hair		1 Roy	1 walked
2 dirty	1 haircut	4 mad	18 run	1 wear
1 do	1 happy	9 male	3 running	14 whistle
1 driving	1 hard	61 man	5 runs	29 work
1 drum	6 hat	5 marbles		
	6 he	1 master	11 school	4 young
1 eager	7 head	2 me	1 see	

58. LIGHT

1 Aladdin	67 day	1 headlight	1 noon-day	1 star
5 air	1 daytime	1 heaven		1 stone
	2 dirt	4 heavy	1 oil	1 store
1 baby	1 dog	1 help	3 out	2 strong
1 barn	1 dress	1 home	1 outside	2 suit
1 beautiful		9 house		29 sun
1 bird	6 easy		4 paper	1 sunny
1 black	5 electric	1 is	1 penny	
1 blaze	1 enough		1 pin	1 thought
1 book	2 eyes	1 kerosene	2 pretty	1 to-day
1 boy			3 poor	1 tower
1 bread	1 fair	251 lamp		
74 bright	5 feather	2 late	1 radiant	1 up
1 brighter	19 fire	1 lighting	1 read	1 us
5 burn	1 flame	1 lights	5 red	
1 burned	1 flash	1 like	6 room	1 walk
4 burning	1 flowers	4 look		3 want
			43 see	2 warm
2 candle	64 gas	2 man	1 seen	17 white
5 clear	1 glad	18 match	2 shade	12 window
1 coal	1 glass	1 matches	1 sharp	1 windows
11 color	47 good	1 mean	30 shine	4 work
1 complexion	1 grate	2 night	2 shines	2 write
1 cotton		4 moon	3 shining	1 writing
	5 hair	6 morning	1 ship	
99 dark	1 hall		2 shone	9 yellow
1 dawn	1 hard	4 nice	2 sky	9 yes
		10 night	4 soft	

59. LAUGH

1 ache	2 enjoy	28 hard	4 man	5 smiling
3 aloud	1 enjoying	4 hearty	3 me	1 sober
1 always	1 easy	1 hiccough	20 merry	3 something
			1 monkey	1 squeak
7 baby	7 face	7 joke	4 mouth	35 sweet
14 boy	2 fine	1 jokes		
1 boys	138 fun	50 jolly	3 noise	9 talk
1 burst	97 funny	53 joy		1 talked
		1 joyful	1 people	1 teeth
1 calling	1 gay		1 person	1 tickle
1 cat	22 giggle	1 lady	1 play	1 tickled
1 chatter	33 girl	3 laughed	2 pretty	1 time
2 cherry	1 girls	2 laughing		
27 children	26 glad	7 laughter	1 Santa	1 weak
1 clown	3 gladness	1 like	1 set	1 wide
1 comical	1 glee	2 lips	2 she	1 with
1 cough	9 good	2 long	1 shout	5 woman
1 crazy	3 gun	1 lot	2 show	1 women
1 crow		38 loud	1 sideache	1 wrong
14 cry	10 ha ha	1 lumber	2 silly	
	4 happiness		1 sing	6 you
2 do	78 happy	1 makes	150 smile	

60. BIBLE

2 angel	1 create	1 hymns	1 page	7 study
1 angels	1 cries		1 poetry	11 Sunday
	2 cross	1 Jacob	25 pray	1 swear
3 believe		1 James	6 prayer	1 sweet
5 big	1 dear	36 Jesus	1 prayer book	
4 black	1 dog		5 prayers	4 teach
1 blessed		7 learn	5 preach	1 teaches
2 blue	1 faith	1 learned	1 pretty	1 tells
224 book	3 faithful	3 lesson	4 priest	5 Testament
1 burnt		1 liar	1 prose	1 text
	2 Genesis	2 bible	1 psalms	3 think
1 carry	124 God	17 Lord		3 true
1 catechism	1 God's word		116 read	3 truth
2 Catholic	20 good	1 mamma	6 reading	
3 chapter	2 gospel	2 marble	4 religion	4 verse
22 Christ		1 mine		5 verses
10 Christian	1 have	4 minister	1 Sabbath	
110 church	1 heaven		1 save	5 words
2 church book	38 history	2 new	4 scripture	2 world
1 class	68 holy	2 nice	1 solemn	1 write
1 comment	3 holy book	1 old	3 stories	
	2 house		4 story	

61. MILK

47 baby	27 cream	1 glass	1 little	26 sour
1 bitter	1 cup	1 goat		1 spill
10 bottle		25 good	1 maid	1 sugar
2 boy	4 drank	1 have	1 milked	1 swallow
2 bread	360 drink	1 hot	1 milkman	25 sweet
3 breakfast	3 drinking			
1 butter	1 drinks	1 ice	1 nice	1 toast
	1 dry	1 impure	1 pail	1 thin
1 can		1 ilk	1 pailful	4 warm
10 cat	2 eat		2 pure	8 water
7 coffee		2 kitty		91 white
4 cold	4 farm		1 sick	
1 cook	1 fat	3 like	2 silk	
280 cow	1 food	9 liquid	1 song	
7 cows	1 fresh			

62. SHEEP

1 afraid	1 cool	1 garden	1 live	1 ram
117 animal	8 country	4 goat	1 lost	1 range
1 animals	2 cover	3 goats	1 lot	2 run
1 ate	1 cows	1 good	1 lots	
	1 cunning	3 grass		1 sewing
2 baa		1 gun	1 man	3 shear
6 baby	1 deep		5 many	32 shepherd
1 beast	1 did	1 has	6 meadow	1 shepherds
3 bed	4 dog	1 have	3 meat	7 skin
2 bell		1 heap	2 milk	1 slip
7 big	3 eat	1 herbs	1 money	1 steak
6 black	1 eyes	10 herd	9 mutton	1 stock
7 bleat		1 herding	1 my	
1 bones	2 face	1 herdsman		1 track
1 boy	9 farm	1 here	6 nice	
1 brick	1 fed		1 old	1 walk
1 buy	1 feed	1 kept		1 walked
	1 field		3 paper	1 wash
3 catch	4 fleece	1 lady	16 pasture	57 white
11 cattle	1 fleet	79 lamb		411 wool
1 child	29 flock	1 lambkins	1 pet	1 woollen
1 clean	1 flocks	29 lambs	5 play	1 woolly
3 cloth	1 frisky	3 leap	1 poor	
1 clothes	11 fur	1 like	1 pretty	
1 coat		1 little		

63. BATH

13 baby	1 cleanliness	1 have	1 person	3 take
1 baby's	10 cold	1 healthy	1 pours	1 toilet
1 ball	1 cool	1 here		4 took
27 bathe		2 home	1 river	6 towel
2 bathed	2 dirt	14 hot	1 robe	131 tub
1 bathroom	9 dirty	1 house	4 room	

3 bathing	1 door	1 last	1 run	1 wade
1 bathroom	1 dress	1 like	20 Saturday	10 warm
4 bathtub		7 little	4 scrub	143 wash
1 bird	1 fresh	1 lot	4 shower	1 washing
1 body	1 feet		1 sink	1 washtub
5 boy	3 fire	1 naked	8 soap	295 water
1 boys		1 naughty	1 splash	1 week
1 but	1 girl	1 neck	9 swim	2 yesterday
	11 good	7 nice	3 swimming	
1 camp	5 had			
192 clean	1 happy			

64. COTTAGE

1 age	1 cute	79 live	1 red	1 swimming
1 bad	1 dirty	1 lived	1 rent	
4 big	1 door	1 lives	1 residence	2 take
1 blotch		1 log	1 river	
1 brown	2 farm	1 man	1 roof	3 village
3 bungalow	1 father	1 matey	2 room	
1 burnt	1 funny		2 root	4 warm
1 buy		1 neighbors	1 run	1 we
	2 good	1 news	3 school	1 where
1 carpet		12 nice	1 sea	1 wife
1 chair	101 home	1 paint	1 shack	2 window
39 cheese	1 hot	1 paper	1 shanty	1 women
1 children	425 house	1 plain	1 shelter	17 wood
1 clean	9 hut	1 poor	1 shoot	2 wooden
1 comfortable		3 porch	2 sleep	14 woods
2 cot	1 lady	1 pretty	36 small	1 work
6 country	117 lake		2 snug	
5 cozy	34 little	1 rain	3 stove	1 yard
			14 summer	

65. SWIFT

1 actor	2 care	1 goes	10 quick	1 Santa
3 air	1 car	3 going	1 quite	1 see
3 arrow	3 cars			1 skate
11 auto	1 company	1 Hiawatha	1 rabbit	1 sled
6 automobile	11 current	124 horse	11 race	1 slight
		3 horses	1 raise	28 slow
1 baby	4 deer	1 hose	7 ran	4 speed
5 ball	1 drive	4 hurry	1 read	1 stream
2 baseball			4 reindeer	
1 beat	1 engine	1 kick	1 ride	1 throw
3 bicycle		1 lard	1 rider	1 time
2 bird	1 falls	1 legs	1 riding	1 to
1 birds	391 fast	2 lift	1 ring	15 train
3 boat	7 feet		14 river	
1 boy	1 firehorses	1 meal	1 rough	3 wagon
1 breath	1 fleet	1 motor	1 round	8 water
1 bring	8 fly	1 mouse	202 run	3 went
1 broom	3 foot		13 runner	4 wind
1 bullet	1 footed	1 nest	16 running	1 work
		1 not	1 runs	
1 can	4 go			1 you

66. BLUE

3 air	1 boy	6 flower	1 light blue	1 sea
1 any	1 bread	1 fly	1 line	1 silver
1 apron	24 bright	1 forgetmenot		1 sister
	1 brown		1 mark	1 skirt
1 bad		1 globe	1 match	102 sky
1 bag	1 circus	1 good	1 mew	2 stick
2 ball	1 clean	1 goods		3 sticky
2 balloon	4 cloth	1 green	2 navy	1 stocking
1 bean flower	1 clothes		3 nice	12 suit
1 beautiful	6 coat	1 hard		1 sweater
1 beauty	318 color	4 hat	22 paint	
1 bell	1 crew	3 high	6 paper	6 true
4 big		2 horn	3 paste	
4 bird	12 dark	9 house	1 pastry	1 very
3 black	1 dirty		10 pencil	
1 blood	1 draw	1 I	2 picture	1 violet
1 blossom	173 dress	3 ink	15 pretty	
			2 sad	3 waist
				3 water

1 blow	1 dresses	1 it	1 printing	1 whistle
1 blue bird			1 purple	1 wild
1 blue jay	1 egg	4 jacket		34 windy
6 bluing	1 eyes	2 jay	21 red	1 windy
1 boat			1 red, white & blue	1 writing
1 boo	1 fair	1 lake		
1 book	1 fast	1 lamp	2 ribbon	1 yellow
1 box	82 flag	5 light	1 round	

67. HUNGRY

5 am	1 cooky	1 hear	1 pangs	1 table
1 angry		3 home	1 pantry	1 taste
3 appetite	1 die	1 horse	1 peace	1 tasty
1 apple	24 dinner	1 house	1 people	1 terrible
1 apples	14 dog	5 hunger	1 person	1 than
3 ate	1 dogs		1 pity	1 thin
1 awfully	1 doughnut	3 I	1 plant	1 thirst
	11 drink	2 is	18 poor	13 thirsty
14 baby	1 dry		1 potato	1 time
2 bad		1 jam	2 potatoes	3 tired
1 bad feeling	337 eat	1 lamb		1 too
3 bear	1 eatable	1 lion	1 rabbit	1 tramp
3 beggar	5 eating	1 little	2 robin	
1 Belgian	1 eats	1 lunch		3 very
1 belly	3 empty		1 satisfied	
2 bite	1 eyes	9 man	1 school	1 wait
1 black		1 meals	1 sea	6 want
12 boy	1 face	20 meat	12 sick	1 wants
2 boys	1 faint	1 men	1 sit	2 wanting
173 bread	1 famine	1 milk	1 small	1 war
1 breakfast	1 feast	1 minstrel	1 sober	1 warm
	1 feed	1 mouth	2 something	1 was
1 cake	1 fight		1 starvation	1 water
1 candy	55 food	1 need	47 starve	1 weak
2 cat	1 fox	1 neighbor	6 starved	3 wolf
2 chicken		3 noon	44 starving	1 woman
2 children	1 German	2 nothing	3 stomach	1 work
2 coffee	7 girl	4 now	1 sugar	
1 cold	9 good		1 supper	1 yellow
1 cook		1 oatmeal	1 sweet	2 yes
1 cookies	2 head			1 you

68. PRIEST

4 altar	1 death	1 kill him	57 preacher	1 speaker
	1 demon		1 preaches	1 speaking
1 back	1 died	15 learn	3 preaching	3 speech
1 baptize		1 letter		16 Sunday
1 beads	1 east		1 read	1 Swede
21 Bible		69 man	2 reading	
1 big	8 father	1 marriage	1 religion	2 talk
1 bishop	1 flock	5 married	1 religious	1 talks
1 blackcloak	1 fold	2 marry	1 reverend	4 teach
2 book	1 folded	12 mass	1 rich	2 teacher
1 brother	1 friar	2 master	1 robe	1 tear
1 bunk		168 minister	1 robes	1 there
	25 God			1 think
1 candles	27 good	3 paper	1 said	
1 carpet	9 gospel	9 pastor	1 school	1 wagon
1 cathedral	1 great	1 people	4 sermon	1 ward
111 Catholic		17 pray	1 serves	2 wedding
1 Christ	1 healthy	1 prayers	1 service	1 where
271 church	13 heaven	2 praying	1 shirt	1 white
1 church man	5 holy	2 prays	1 singing	1 wife
1 collar	1 home	41 preach	5 speak	1 worship

69. OCEAN

2 across	2 fish	1 over	1 salty	1 the
7 Atlantic	1 flow		1 saw	1 Titanic
		3 Pacific	88 sea	
2 beach	1 good	5 pearls	1 seas	1 war
1 beautiful		1 pilgrims	1 seal	413 water
42 big	1 hear		1 seals	8 wave
7 blue		1 riches	1 shell	88 waves
34 boat	1 iceberg	1 ride	43 ship	1 wavy

20 boats	13 lake	36 river	36 ships	1 were
1 calm	1 lands	3 roar	1 shore	1 whale
1 coast	4 large	5 rough	1 sky	1 whales
	4 liner	1 round	1 sponge	1 wharf
23 deep		3 sail	1 steamboat	35 wide
1 dip	1 New York	1 sails	11 steamer	1 wild
14 drown		6 salt	1 steamship	
1 drowned	1 on	1 saltwater	1 swift	
			2 swim	

70. HEAD

22 ache	1 dead	3 headache	12 nose	1 sore
13 aches	1 dog	2 hear	1 nut	1 sparrow
1 aching	3 doll	1 hog		
1 army		2 horse	3 off	5 talk
	2 ear	1 human	1 on	1 talker
1 band	2 ears			2 teeth
1 ball	1 eat	1 it	1 part	1 there
1 bed	1 elephant		3 people	59 think
15 big	16 eye	2 large	5 person	2 thinking
1 bird	91 eyes	5 lead		1 thinks
1 black		2 learn	1 quarters	6 thought
1 blood	42 face	1 light		1 top
26 body	1 fat	2 listen	1 red	
1 bone	1 fill	4 little	1 rough	1 up
3 boy	1 fish		58 round	3 use
2 braid	1 fist	1 made		
25 brain	9 forehead	10 man	1 sausage	1 veins
137 brains	1 funny	3 memory	3 scalp	
		46 mind	1 school	1 warm
	1 girl	1 mine	8 see	1 were
6 cabbage	5 good	9 mouth	2 sense	1 white
2 captain	1 grant	1 move	1 sings	
1 chest		1 my	14 skull	1 yours
8 chicken	203 hair		1 sleep	
1 clean	1 hang	2 nails	9 small	1 zebra
1 cloth	3 hard	2 neck	1 smiles	
1 comb	12 hat	1 nerve	1 soft	
3 cut	1 hats	1 nerves		

71. STOVE

1 bake	3 cooking	1 hair	1 log	1 rat
1 baking		3 hard	1 love	1 red
5 big	1 damper	117 heat		1 rusty
37 black		3 heater	1 match	
1 blue	1 exploded	1 home	1 move	2 smoke
1 broken		200 hot		
103 burn	1 fill	1 house	1 nice	8 use
8 burning	164 fire		1 nickel	
6 burns	2 fry	45 iron		127 warm
			2 oven	8 warmth
1 chimney	1 gas	1 kitchen		1 went
16 coal	1 girl		1 paper	5 winter
1 coke	1 going	2 legs	12 pipe	11 wood
7 cold	1 good	1 lid	6 polish	1 world
62 cook		1 little		
			5 range	

72. LONG

2 ago	1 engine	1 lanky	1 read	2 table
1 arrow	1 eraser	7 large	12 ribbon	1 tail
4 away	1 every	7 legs	6 ride	1 tale
		25 length	9 river	33 tall
1 bad	1 face	2 lengthy	4 road	1 telephone
55 big	90 far	1 lesson	4 room	1 ten
1 bird	1 feet	3 line	26 rope	2 thin
1 black	1 field	1 log	1 rough	3 thing
1 blaze	1 figure	1 lonesome	1 rug	1 thong
9 block	1 find	2 longer	6 ruler	1 thought
11 board	1 finger	1 long for		1 thread
4 boat	23 fingers	1 lots		41 time
	1 fish		1 sad	1 Tipperary
1 cabin	1 flat	7 man	3 school	2 tiresome
2 cakes	1 floor	1 mane	1 see	5 train
1 car	1 flower	1 measure	45 short	1 tree
1 cat	1 flown	9 mile	3 shout	2 trip
1 chain		2 miles	2 sidewalk	

1 change	1 go	1 mirrors	6 skinny	1 verse
1 child	1 goods		31 skirt	4 very
5 city	75 grass	2 narrow	1 skirts	1 visit
1 cloth	5 green	2 neck	13 slender	
10 coat		1 night	1 slim	1 wagon
1 color	22 hair	1 noon	2 slow	8 wait
2 cord	1 hall	2 nose	1 small	1 waiting
1 corn	1 hard		3 snake	5 walk
1 cot	1 he	1 oblong	1 some	1 wall
1 court	1 heavy	1 off	1 sort	1 want
1 cut	6 high		1 spring	31 way
	1 hollow	1 page	4 stay	1 while
1 daddy	1 horse	2 paper	21 stick	12 wide
3 day	3 hour	1 path	2 store	4 width
1 deep	3 hours	7 pencil	4 stork	2 wish
1 desk	2 house	2 person	6 story	1 wood
6 distance		1 piece	3 straight	2 word
1 distant	1 it	2 pipe	1 stream	1 worm
1 door		8 pole	2 street	
42 dress	1 lake	1 queer	48 string	3 yard
	1 lane		2 swing	2 years

73. GHOST

73 afraid	3 fairy	2 howling	1 party	2 silent
1 angel	1 fear		1 person	8 skeleton
1 animal	1 figure	1 image	18 play	1 small
	1 fool	2 imagine	1 post	36 spirit
6 bad	1 foolish	3 killed	1 pretty	8 spook
1 believe	3 fright			1 spooky
1 big	1 frighten		2 roast	1 story
1 bind	35 frightened	2 large	6 robber	
1 bird	1 fun	24 lights	3 robbers	1 teacher
5 black	5 funny	1 like	4 run	2 Thanksgiving
1 blanket		1 look		1 think
1 bogies	1 good-night		1 saw	1 true
		41 man	47 scare	
1 cemetery	88 Hallow'en	6 mean	5 scarecrow	2 vision
1 creeps	1 haunt	2 men	39 scared	
	1 haunted	2 moon	1 scares	364 white
28 dark	1 head	2 most	1 see	1 wig
23 dead	1 holler		2 shade	4 witch
1 devil	1 horrible	4 nice	7 shadow	1 woman
1 die	1 horrid	6 night	20 sheet	2 wood
	1 host	1 none	1 show	
1 faces	2 house	2 nothing	2 sight	1 you

74. WHISKEY

1 abuse	1 bum	1 good	9 man	1 rum
1 acid	1 burns	1 glass	1 mean	2 rye
15 alcohol			1 medicine	
1 angry	1 corn	8 had	31 men	57 saloon
		1 hard	1 much	9 sick
41 bad	3 dope	1 hog		10 strong
1 barley	7 drank	1 home	1 name	
1 barrel	279 drink	1 hot	2 nasty	1 tantalizing
108 beer	1 drinker		2 nose	7 taste
2 bitter	12 drinking	5 intoxicated		1 temperance
1 blind pig	2 drinks		1 parents	1 tiger
1 blue	138 drunk	1 judge	1 play	1 tonic
9 booze	13 drunkard		1 poison	
1 boozier	1 drunken	1 like	1 poor	8 water
28 bottle		24 liquid		1 wet
19 brandy	1 fellow	97 liquor	1 rat	1 wild
5 brown	1 firewater	1 liquors	1 red	7 wine

75. CHILD

1 afraid	1 dear	1 hurt	1 name	1 sickly
1 age	1 died		1 nature	1 sister
	6 dress	3 infant	1 naughty	1 six years
185 baby			7 nice	1 sleep
18 bad	1 ear	5 kid	1 niece	45 small
11 big	2 eat	1 kiss	1 nurse	1 smart
1 birth	1 eyes			1 spirit
26 born		1 large	1 old	1 steal
90 boy	1 feet	2 legs		1 stocking
1 brothers	1 fight	1 lild	1 people	3 stork
			15 person	

8 candy	5 friend	48 little	1 pile	1 strong
94 children	1 get	3 lost	36 play	1 sturdy
1 Christ	93 girl	8 love	2 playing	1 sweet
5 clean	78 good	1 mad	4 plays	1 take
13 clothes		1 mamma	11 poor	1 that
1 clothing	3 hair	5 man	1 pretty	
1 cold	2 hand	1 meal	1 pupil	1 walk
1 creature	1 hands	2 mean	1 ribbon	1 warm
1 cries	1 happy	1 milk	1 ride	1 well
21 cry	1 hat	1 mind	12 run	1 while
1 crying	2 head	1 mine	2 running	1 white
5 cute	1 hid	1 mischief	2 runs	1 won't
	1 hood	26 mother		
1 dance	1 house	1 mothers	12 school	3 young
1 daughter	1 human	4 myself	1 scold	
1 dead	1 humor		1 sick	

76. FRIEND

1 acquaintance	2 dead	2 he	1 mates	1 red
1 acquainted	1 dear	1 help	1 mean	2 relation
1 afraid	1 death	1 hend	1 meet	4 relative
1 Alice	2 dog	1 him	3 mine	1 rend
1 America		1 horse	1 money	1 ring
1 Annie	1 Edith	1 hurt	4 mother	1 Roy
1 August	1 Edna		1 move	
4 aunt	1 Elson	1 Ida	1 Mrs.	3 school
	4 enemy	1 invite	6 my	4 schoolmate
2 bad	1 Evelyn	1 Irish		1 see
1 bend	1 everyone		1 name	1 she
19 best		1 John	22 neighbor	1 ship
112 boy	1 father		2 nephew	1 sick
3 boys	1 fellow	1 killed	13 nice	1 sing
1 Brady	3 fight	6 kind	1 no	1 skin
3 brother	1 fire	2 kindness	1 nobody	1 smoke
	1 foe	8 know	1 now	1 some one
1 Carl	14 friends			
3 children	4 friendship	11 lady	1 over	1 this
1 chick	2 fun	2 lend		
98 chum		6 like	1 pal	1 visit
1 clean	1 gentleman	1 little	2 pals	1 visiting
1 Clifford	118 girl	1 Louise	1 park	
1 Clint	1 girls	23 love	2 partner	1 walk
10 companion	2 go	1 loved	15 people	2 war
5 company	1 gone	1 lovely	25 person	1 who
2 comrade	94 good		35 play	2 with
1 country	1 got	1 mad	2 playing	1 women
1 course		8 man	35 playmate	
66 cousin	1 happiness	4 marry	1 playmates	1 years
1 cousins	10 happy	1 Mary	1 plenty	8 you
1 cross	8 have	55 mate	1 pretty	1 your
				2 yours
			1 Rea	

77. HAMMER

1 axe	1 drive	2 knock	1 papa's	4 strong
1 baby	37 finger	1 lead	1 pieces	1 swings
1 beat		6 little	288 pound	
1 big	1 good	5 loud	1 pounded	1 tack
1 blacks		1 lumber	1 pounder	11 tool
1 blacksmith	1 hand		28 pounding	3 tools
1 board	9 handle	1 make	4 pounds	
1 broken	1 happy	1 manner		2 use
1 build	20 hard	1 man	1 rammer	
2 building	3 hatchet		1 rap	1 we
1 busted	1 have	218 nail	1 saw	7 wood
	1 head	186 nails	1 slam	2 work
1 carpenter	1 heavy	1 new	2 sledge	1 works
5 chop	32 hit	6 noise	1 smash	1 workshop
1 club	4 house	1 noisy	2 sore	
1 crack	2 hurt	2 nuts	1 square	1 your
			1 steel	
	62 iron	1 ouch	1 strike	

78. THIRSTY

2 am	3 crow	9 girl	11 milk	1 thirst
4 are	3 cup	1 going	1 mother	1 throat
1 baby	1 dog	1 home	3 parched	4 tired
3 beer	4 drank	1 horse	1 pop	1 too
1 burning	364 drink	1 hot	1 pump	1 very
2 camel	1 drinker	17 hungry	4 quenched	8 wa...t
2 cat	132 dry	1 lemonade	1 quenched	1 wash
3 child		1 lonesome		377 water
1 choke	1 filled		4 salt	2 weak
3 coffee	1 food	1 mad	1 starve	1 well
1 cooking		6 man		2 women
				1 would

79. CITY

1 air	1 corner	1 I	4 name	27 state
1 automobile	3 council	1 inhabitants	2 New York	5 store
	86 country	1 it	2 noise	12 stores
3 beautiful	1 crowd	1 July	1 oblong	1 story
1 Berlin			1 old	2 St. Paul
124 big	1 dark	1 lady	1 Paris	12 street
4 block	5 dirt	4 lamp	3 park	5 streetcar
7 blocks	10 down	5 land	1 paving	2 streets
2 building	1 dust	40 large	44 people	1 table
5 buildings	1 eat	2 lighted	1 place	1 tired
1 burned		1 lights	1 president	1 Toledo
1 burning	1 folk	1 like		110 town
2 burnt	2 fun	1 line	1 rat	1 travel
		2 little	1 rest	1 Turkey
1 canal	2 go	1 lity	1 resting	
2 capital	1 going	50 live	1 roads	1 United
2 car	3 good	2 lived	2 rocks	2 U. S.
2 cat		1 lone		
11 chair	1 hill		2 seat	2 village
3 cheer	22 home	1 made	2 seated	1 visit
1 church	2 horse	1 majority	1 sewer	
20 citizen	1 hospital	8 man	1 sidewalk	1 wagon
4 clean	15 house	2 men	1 sit	1 wagons
6 clothes	14 houses	218 Minneapolis		3 water
1 coming		10 Minnesota		1 we

80. SQUARE

1 acre	83 corner	1 hole	2 not	1 school
1 arithmetic	6 corners	23 house	2 not round	1 schoolhouse
	1 cube			8 shape
1 back	1 deep	2 ice	95 oblong	1 sharp
1 bear	4 desk	1 in	1 one	1 shoulders
9 big	1 door	29 inch		2 sides
1 bills	1 draw	3 inches	28 paper	2 sidewalk
3 blackboard		1 isn't	4 park	1 small
300 block	4 edges	2 Jackson	1 parts	1 so
4 blocks	2 equal		2 perfect	1 soldiers
7 board	1 eraser	11 large	4 picture	1 stand
15 book	20 even	1 length	4 place	1 steel
80 box	7 exact	1 lengthwise	1 plank	30 straight
1 boy		1 letter	1 plate	1 sugar
4 brick	1 feet	1 level	3 play	
1 Bridge	1 figure	4 line	1 plot	5 table
1 building	3 flat	1 lines	1 public	1 that
	2 floor	1 log		6 thing
1 cake	1 foot	17 long	1 right	1 tool
1 cakes	3 four	3 lot	4 ring	1 town
1 candy	1 four-cornered		1 rock	1 triangle
1 cards	1 fraction	1 make	1 rod	
1 case		1 map	6 room	2 walk
1 carpet	2 game	1 market	35 round	1 while
1 cell	1 goods	1 mats	3 rug	12 wide
2 chair			8 ruler	3 wood
2 circle	1 handkerchief	1 nice		
1 cloth				5 yard

81. BUTTER

1 bad	9 dairy	1 goat	1 love	1 salt
467 bread	1 dandy	37 good	1 made	1 salty
1 brown	1 dear	5 grease	1 man	1 scatter
10 butterfly	3 dish	1 greasy	3 melt	5 smear
1 but			47 milk	8 soft
	122 eat	2 hard	1 mutton	5 spread
1 cheap	2 eatable	8 high		1 square
13 cheese	1 egg	1 house	1 nice	3 store
18 churn	1 eggs		1 on	4 sweet
15 cow		1 I	1 pail	1 syrup
5 cows	1 farmer		1 pound	
30 cream	19 food	1 knife		1 taste
5 creamery	6 fresh	1 lard		1 where
1 cubes		1 like		
				117 yellow

82. DOCTOR

1 auto	1 cough	15 health	132 man	1 satchel
	24 cure	10 help	136 medicine	1 scar
7 baby		1 helper	2 men	448 sick
1 bad	2 dentist	1 helpman	2 mother	34 sickness
1 bed	1 did	5 helps		3 sore
9 bill		3 home	1 needed	
1 bottle	2 examine		1 nice	1 tag day
1 brother		4 ill	13 nurse	1 teeth
	1 family	4 illness		1 tools
1 call	1 father	1 Johnson	1 office	1 treat
6 care	1 find		6 physician	1 treatment
3 case		1 lawyer	1 pills	4 trouble
1 cauterizer	40 good	1 lay	1 queer	1 visit
1 child	7 heal	1 learn		
1 colds	1 healer	1 major	1 rain	1 was
6 come	1 heals	1 mamma	3 rich	30 well
2 coming				

83. LOUD

1 able	3 dog	1 I	1 rags	1 spelling
	1 door	1 it	1 read	1 steps
	1 drum		1 reading	1 still
1 baby		3 laugh	1 recite	1 stormy
1 bad	1 ears	1 laughed	1 record	1 swallow
2 bang	7 echo	1 like	6 ring	1 swear
2 bark	1 echoes	7 long	1 roud	1 sweet
1 bear	1 every	1 louder	1 rough	
3 bell		5 loudly		130 talk
1 blast	8 far	8 low	15 scream	11 talking
1 boy	1 fast		1 sharp	1 teacher
1 boys		1 man	1 shot	1 there
1 bugle	1 going	1 men	21 shout	1 tone
	1 gun	1 mouth	1 shouted	5 train
28 call		1 moving	3 shriek	
1 called	1 hammer	4 music	3 shrill	41 voice
1 calling	12 hard		1 silent	
1 cannon	7 harsh	201 noise	20 sing	1 walk
1 cause	28 hear	11 noisy	1 singing	12 whistle
5 child	1 heard	1 not	3 sings	1 word
1 children	1 hoarse		13 soft	
1 coarse	190 holler	1 peal	1 softly	11 yell
1 color	3 hollering	1 peals	8 song	1 yelled
1 cried	1 home	4 piano	9 sound	1 you
29 cry	6 horn	1 plain	22 speak	
1 crying	3 howl	1 pound	2 speech	
	1 howling	1 proud		

84. THIEF

2 arrested	1 fight	1 lead	4 night	10 stealing
	1 filled	1 leaf	1 noisy	8 steals
19 bad	1 food	2 legs		28 stole
1 be	1 fright	2 liar	1 oats	20 stolen
1 beg	1 fun	1 lie		2 store
1 blue		1 fight	2 police	2 strong
1 boon	2 girl	2 locket	6 prison	3 suit
1 boot	8 gold	1 long		

1 booster	1 good		5 ring	9 take
1 bum	11 gun	1 mail	21 rob	1 theft
64 burglar		1 mamma	229 robber	1 there
	1 hat	30 man	4 robbers	5 tramp
23 caught	1 he	1 me	6 robs	
1 chickens	3 hide	6 mean	5 run	1 unkind
1 cow	9 house	1 meat		1 useful
1 coward		63 money	1 silverware	
	1 jail	1 mouse	1 sold	1 wagon
2 dog		1 murder	1 sore	1 walk
	4 kill		320 steal	3 watch
1 feet	1 knife	1 nice	10 stealer	1 white
				1 women

85. LION

4 afraid	1 cat	13 forest	1 jumps	1 purr
1 Africa	1 catch	1 fright		
205 animal	1 cave	1 fur	15 kill	52 roar
3 anger	1 claws		2 kills	3 roars
7 angry	1 close	5 good	27 king	3 rough
1 awful	4 creature	7 growl		
		1 growling	16 large	2 skin
2 bad	1 danger	5 growls	3 legs	1 small
1 bay	1 David	1 gun	1 lift	1 story
5 bear	1 deer		3 live	1 string
95 beast	8 den	1 have	1 long	16 strong
83 big	1 desert	2 hair		
1 bind	1 dog	1 he	14 mad	2 tail
18 bite		1 head	4 man	1 tame
1 biter	109 eat	1 horse	8 mane	12 teeth
1 bit	3 eats	1 huge	1 many	1 terrible
1 bones		1 hunger	7 mean	13 tiger
1 boy	1 fear	4 hungry	1 monster	
3 brave	1 feet		1 mouse	7 wild
1 bread	119 fierce	1 insect	5 mouth	8 woods
	2 fight			1 wool
8 cage	1 fool	16 jungle	1 prance	1 yellow

86. JOY

3 army	2 enjoy	25 happiness	3 merry	3 sad
3 automobile		260 happy	4 mother	1 sadness
	1 father	3 heart		1 school
3 baby	1 feel	6 home	1 naughty	1 show
1 birth	1 fest	1 honor	1 new	1 skating
6 boy	4 fine		28 nice	1 song
1 boys	1 full	2 jokes		1 sorry
3 bring	182 fun	2 jolly	1 park	1 sprang
	3 funny	1 joyful	5 party	
1 cake		1 joys	1 passed	1 teeth
1 cheer	1 game	1 jump	1 piano	1 tickling
2 child	2 girl		49 play	2 time
2 children	203 glad	25 laugh	2 playful	1 toy
45 Christmas	2 gladly	2 laughing	1 playing	1 train
1 clap	7 gladness	11 laughter	6 pleasure	1 trains
1 comfortable	1 glee	1 life	1 pretty	
1 company	2 going	2 like		1 way
1 crazy	27 good	3 love	1 rejoice	1 worry
		1 loving	1 rejoicing	
2 dance	1 ha ha	4 man	3 ride	
1 doing	1 happily		2 riding	

87. BED

3 asleep	1 father	2 laying	2 post	39 soft
	1 fell	1 lazy	1 potatoes	2 spread
8 bedding	1 fool	1 leg		4 springs
1 big		1 legs	8 quilt	1 standing
6 blanket	2 go	10 lie		6 supper
1 bought	1 going	1 like	17 rest	1 sweat
1 brass	2 good	1 little	5 resting	
1 broke		1 lying	8 room	1 time
1 buy	1 hard		1 rough	3 tired
	1 head	1 made		1 to
14 clothes	1 home	3 make	6 sheet	
7 comfort		9 mattress	22 sick	10 warm

1 couch	12 iron	3 nice	453 sleep	1 well
12 cover		106 night	1 sleeper	2 went
3 covers	1 keyhole	4 nightgown	16 sleeping	2 white
			9 sleepy	1 wooden
2 down	1 lady		6 slept	
4 dream	109 lay	25 pillow	3 small	

88. HEAVY

1 animal	1 do	213 iron	1 no	12 stove
3 baby	1 dog	1 is		20 strong
1 ball	2 doll	1 it	3 pail	1 sunk
1 barrel	1 drop		1 paper	
4 bed	1 engine	1 labor	2 papers	2 thick
37 big	1 every	22 large	2 potatoes	1 thing
3 blocks		2 lazy	2 pound	4 things
2 boards	1 fall	35 lead		1 this
4 book	1 fat	1 leaves	1 quilt	1 tight
12 box	1 father	36 lift		5 tired
6 boy	1 flour	5 lifting	1 rains	2 tiresome
1 bundle	1 full	54 light	19 rock	1 too
5 burden		1 little	1 rocks	1 tree
	3 gold	72 load		3 trunk
1 can't	1 goods	2 loaded	1 sack	
36 carry	1 guilt	1 loads	1 salt	6 very
1 case		1 loan	1 sister	
6 chain	5 hammer	1 log	1 sledge	7 wagon
1 chair	178 hard	1 look	1 small	1 water
1 cloth	3 head	1 lot	1 soft	1 weak
6 coal	1 heaven	4 lumber	1 steel	1 weigh
1 cover	1 left	1 lunch	1 steep	39 weight
	3 house	4 man	1 stick	1 were
1 desk	1 hurt		32 stone	10 wood
			1 stones	1 work
				1 world

89. TOBACCO

1 America	1 don't	3 like	1 Prince Albert	18 snuff
2 awful				1 so
	1 eat	28 man	2 raise	20 spit
7 bad		10 men	1 red	1 squeal
1 bag	13 father		1 rug	5 store
6 bitter		3 nasty	1 ruin	12 strong
1 blacksmith	1 good	1 naughty	1 ruins life	1 sweet
6 box	1 grew			
8 brown	1 habit	2 opium	1 sick	1 use
	1 hard		1 slow	
1 can	1 harm	70 pipe	1 smith	1 Virginia
214 chew	1 honor	2 pipes	466 smoke	
7 chewing		4 plant	3 smoked	1 weeds
2 cigar		5 plantation	1 smokers	
4 cigarettes	1 Leader	1 pledge	2 smokes	
5 cigars	2 leaf	1 pouch	28 smoking	
1 climax	7 leaves	3 poison		

90. BABY

1 alive	2 crib	9 girl	55 milk	1 school
3 asleep	1 cried	1 go	22 mother	3 sick
	15 cries	6 good		5 sister
1 bad	119 cry	3 growing	1 name	20 sleep
1 bakery	22 crying		4 new	90 small
1 baptism	14 cute	1 hands	11 nice	1 smiled
1 bare		2 happy	1 nickel	1 soul
1 bath	2 darling	1 have	21 night	40 stork
1 bed	4 dear	1 hear	1 nipple	11 sweet
1 big	1 die	1 heel	1 nose	
1 birds	1 doctor	1 helpless	6 nurse	14 tiny
1 blanket	2 doll		4 nursy	2 toes
35 born	1 dream	20 infant		1 toys
7 bottle	2 dress	1 it	1 out	1 tub
31 boy	1 drinks			
1 brother	1 drive	2 joy	1 people	1 we
2 buggy			3 person	1 well
	1 ears	1 kiss	6 play	1 woman
4 care	1 ease	1 kitten	1 playing	
4 carriage	1 eat		5 pretty	1 young
		3 lady		

172 child	9 eyes	1 legs		1 youngling
17 cradle		97 little	3 rattle	1 youngster
3 crawl	3 face	4 love	1 rock	
2 crawling	1 fat		1 running	
3 creeps	1 flesh	1 Mabel		

91. MOON

1 above	1 eyes	1 led	1 red	1 small
1 at		155 light	5 rise	1 soon
1 away	13 face	1 little	2 rising	1 spoon
	1 far	1 loom	101 round	9 star
1 baby	20 full	4 look		10 stars
4 hall		1 looks	1 see	1 still
29 big	1 ghost		1 setting	6 summer
115 bright	3 gold	6 man	107 shine	14 sun
	1 gone	1 moonlight	26 shines	1 sunlight
3 clear	1 good	3 moves	19 shining	1 sunshiny
2 cloud		7 nice	1 shiny	1 waxen
8 cold	8 heaven	128 night	1 show	8 white
1 color	6 high	2 noon	2 silver	1 world
3 cow	1 hood		2 silvery	
	2 house		2 skies	
10 dark		1 person	103 sky	8 yellow
1 earth	4 lake	3 pretty	2 slow	
3 evening	2 large			
	1 leave	1 quickly		

92. SCISSORS

1 article	32 cloth	2 finger	1 lizer	11 sewing
	1 clothes		1 long	35 sharp
1 bird	1 coat	1 glasses		8 shears
1 brass	802 cut	1 have	10 paper	1 silk
1 broke	3 cuts		2 papers	1 silver
1 broken	1 cutter	1 knife	1 safety	5 small
	48 cutting	1 large	1 screw	4 steel
1 cast			15 sew	1 waist
1 clip	1 dull			1 work

93. QUIET

1 alone	1 empty	1 lightly	3 old	3 slumber
4 asleep		1 likes		1 small
1 awful	1 feet	13 listen	1 peace	1 smoke
	1 fight	2 lonely	3 peaceful	46 soft
14 baby		1 lonesome	1 person	1 softly
1 be	11 girl	11 loud		1 solemn
1 bed	1 glass	4 low	3 quiet	14 sound
13 boy	20 good			1 stepping
		1 man	4 reading	300 still
1 calm	3 hall	1 me	4 rest	1 study
1 cat	1 happy	22 mice	3 resting	
5 child	1 hear	1 mine	1 robber	3 talk
7 children	6 here	37 mouse	1 rock	1 thought
1 clean	4 home	1 music	43 room	
1 cold	62 house			4 very
1 comfortable		1 nap	4 school	
1 country	1 I	1 napped	3 sick	1 wake
1 cozy	1 Indians	6 nice	5 silence	1 whiskey
1 creak		55 night	4 silent	1 woman
	1 joy	70 noise	1 sit	
1 day		6 noiseless	72 sleep	1 you
1 dark	1 keep	18 noisy	7 sleeping	
1 dead		1 now	22 sleepy	
1 deserted	4 light		1 slept	

94. GREEN

23 apple	1 cotton	15 hat	1 meadow	1 silky
7 apples	2 country	9 horn	3 meadows	4 skirt
		9 house		1 slippers
5 beautiful	12 dark	1 ignorant	4 nice	1 small
1 beauty	1 draw	1 indolent	1 night	1 sorrow
1 bed	100 dress	21 Irish	1 nothing	1 spire
1 beet	1 dummy	1 it		1 spires
1 big	1 dye		19 paint	1 steam

1 blanket			9 paper	9 stem
13 blue	1 fine	1 kind	1 park	1 style
1 boat	1 flag		6 pencil	1 sweet
3 book	7 flower	1 lace	1 pink	
1 boy	1 flowers	1 lavender	8 plant	1 thing
7 bright	1 fresh	1 lawn	1 plume	1 tree
	1 fruit	1 leaf	23 pretty	
1 cabbage		1 leafy		29 waist
1 checkered	1 glass	2 lean	1 railroad	1 walls
4 Christmas	1 good	13 leaves	4 red	3 white
12 cloth	3 goods	13 light	6 ribbon	1 wood
5 coat	272 grass	2 like		1 woods
237 color	1 gray		1 sad	
1 corn	1 greenhouse	1 man	15 silk	6 yellow
				1 young

95. SALT

4 bad	1 doughnuts	1 kitchen	29 pepper	1 soft
1 bake	1 dress		3 petre	4 soup
1 beet	1 drink	1 lalt	2 pickle	79 sour
110 bitter		2 lake	3 pinch	1 stale
2 box	93 eat	3 like	2 pork	4 sting
8 bread	6 eating	1 loft	5 potato	3 store
1 bricks	1 egg	1 look	49 potatoes	13 strong
4 burn	1 eggs	1 love	1 pure	1 stuff
4 butter			1 put	23 sugar
	1 fall	1 malt		6 sweet
1 carrot	1 feathers	99 meat	1 rabbit	1 Syracuse
1 cattle	1 fine	1 me	1 roast	
3 cellar	6 fish	1 men	1 rock	14 table
1 China	4 flavor	3 mine	1 rotten	21 taste
1 class	5 food	3 mineral		1 tasty
6 cook	1 found	1 mountains	1 sacks	10 thirsty
1 cooking		1 much	10 salty	3 tomato
4 cow	1 goat	2 nasty	25 sea	1 too
1 cried	30 good	3 nice	1 shake	
1 crystal	1 goods		7 shaker	
	1 grain	64 ocean	1 sharp	1 useful
		1 onion	1 sheep	
1 dandy	1 halt		1 small	1 we
1 deep	1 horrid	1 pain	1 smart	60 water
	1 horse		1 soap	97 white

96. STREET

1 Adams	1 children	5 ground	1 meat	60 road
2 alley	8 city		2 meet	1 rock
11 auto	90 clean	1 Hennepin	16 mud	3 run
1 autos	12 cleaner	1 home	15 muddy	1 running
2 automobile	1 cleaning	42 horse		7 sand
1 automobiles	1 complete	54 horses	3 narrow	2 sewer
34 avenue	1 corners	4 house	1 newsboy	23 sidewalk
	4 country	1 houses	1 nice	2 slippery
1 beat	4 crossing		1 noise	2 stone
1 big	15 curb	1 is	1 noisy	2 stores
1 black		1 Jefferson	1 number	1 straight
1 bled	34 dirt		1 on	1 streetcar
2 block	85 dirty		1 open	
1 blocks	1 driving	41 lamp	1 order	1 teams
1 blood	1 dry	7 lamppost	1 outdoors	5 town
3 boys	7 dust	1 land		1 track
4 brick	7 dusty	3 large		
4 bricks		1 lawn	1 pass	
1 broad	1 earth	1 light	1 part	49 wagon
1 Broadway	1 even	3 lights	15 paved	3 wagons
1 bumpy		1 listen	15 pavement	88 walk
3 busy	1 far	7 live	3 paving	1 walker
	1 feet	13 long	7 people	1 walking
79 car	1 funny		1 place	5 walks
1 cars		4 man	1 play	1 water
2 cement	1 go	1 marbles	1 public	1 way
2 central	1 good	1 Marshall		2 wet
			5 ride	8 wide

97. KING

2 America	3 cruel	1 horse	5 nice	1 ruled
1 animal	4 Czar	1 hurt	2 noble	170 ruler
1 army			1 Norway	4 rules
	1 dress	1 ill		2 Russia
3 bad		1 Ireland	1 obey	1 Russian
1 beast	17 emperor	1 island	1 old	
1 beautiful	13 England		1 own	1 seat
3 beer	1 English	1 judge	1 owner	1 servants
2 Belgium	1 Europe			4 sit
1 big		1 Kaiser	26 palace	1 small
2 boss	' fox	1 kill	2 person	3 soldier
1 bow		18 kingdom	1 Peter	5 soldiers
1 brave	1 gentleman	1 knights	1 pillory	5 sovereign
1 bring	1 George		1 place	1 staff
1 brother	1 George V	1 lady	1 Poland	2 state
	4 German	2 lame	1 poor	14 stick
1 candy	5 Germany	29 land	10 president	1 Sultan
5 castle	1 God	1 ling	4 pretty	1 Sweden
3 chief	2 gold	1 lion	1 prince	1 sword
1 Christ	25 good		1 princess	
2 citizen	2 governor	1 majesty	1 principal	29 throne
3 city	1 grand	66 man	1 proud	1 trouble
1 clothes		1 manager		
1 cold	1 habit	1 master	50 queen	1 very
1 come	3 happy	1 mayor		
1 commander	1 Harold	1 mean	2 reign	5 walk
83 country	1 have	1 men	19 rich	7 war
3 court	4 head	1 money	1 robe	1 where
1 crime	1 hearts	1 my	1 robes	1 wine
124 crown	1 high		1 royal	1 wise
4 crowned	1 hook	1 nail	107 rule	1 wood
				3 world

98. CHEESE

1 bed-bugs	1 dinner	1 holes	59 mice	1 sneeze
1 bees		1 hungry	32 milk	2 soft
2 bitter	251 eat		128 mouse	1 sour
1 bought	4 eating	1 I		3 stink
78 bread	1 eats	1 Italian	2 nice	5 store
22 brick	1 Edam			1 strong
49 butter	1 egg	1 knees	1 old	1 supper
		1 knife		1 sweet
6 cat	17 food		1 pound	9 Swiss
1 churn		4 like		1 Switzerland
8 cottage	1 goat	7 Limburger	57 rat	
3 cow	1 goats	1 lunch	32 rats	1 taste
3 cows	1 gone			
1 cracker	57 good	1 man	1 sandwich	6 white
33 cream	1 grocer	1 meat	13 smell	76 yellow

99. BLOSSOM

87 apple	1 cherry	1 hive	1 open	1 round
7 apples	1 clover	1 house	1 out	
1 autumn	1 color			1 shiny
	1 cook	1 June	2 pansy	12 smell
1 bears	1 crocus		1 peach	11 spring
1 beauty		1 leaf	1 peaches	1 stem
2 big	1 earth	1 leaves	1 peas	14 summer
1 bird		1 like	1 pick	4 sweet
48 bloom	486 flower	4 lily	4 pink	
2 blooming	93 flowers	1 love	20 plum	9 tree
1 blooms	1 fruit		37 pretty	1 tulip
1 blue		1 May	1 purple	
45 bud	8 garden			1 violet
2 buds	1 good	1 nice	2 red	
	6 grow	1 now	26 rose	30 white
1 California			1 roses	1 winter

100. AFRAID

1 alley	1 cow	4 go	1 monkey	1 ship
1 alone	19 coward	2 gun	2 mouse	2 sleep
1 am	1 cry	1 gypsies		1 snake
3 animals	1 crying		1 nervous	1 strong
1 auto		1 her	59 night	
	151 dark	1 him	1 no	1 tabby
18 baby	73 dog	2 home	4 noise	1 that
1 bad	1 donkey	3 house		8 thief
1 bashful	1 don't	1 humor	1 people	4 tiger
3 bear			1 pond	7 timid
2 beast	14 fear	1 jackal		
10 boy	1 fire		1 rabbit	1 very
1 brand	1 foolish	22 lion	1 rat	
4 brave	6 fright	1 lonesome	26 robber	3 walk
1 bright	5 frighten	1 long	2 robbers	1 weary
1 bug	34 frightened		22 run	4 wolf
33 burglar	2 funny	1 maid		1 women
27 burglars		9 man	41 scare	1 word
	15 ghost	5 me	9 scarecrow	
2 cat	1 ghosts	1 mean	290 scared	1 yes
3 children	9 girl	1 melt	1 scaring	1 you
1 cop	1 glad	2 men	1 scream	

CHAPTER V

PREFERRED RESPONSES FOR DIFFERENT AGES

The preceding frequency tables, include, as already explained,¹ responses of children varying in age from 9 to 12. It seems desirable, therefore, to give some indication of the degree of agreement between the children of different ages. This is fairly well done by the table below, which gives separately for each age the three most frequent responses to each of the stimulus words. Since the 4 age-groups are not equal in numbers, the numerical frequencies of responses given by different groups could not be directly compared. We have, therefore, simply given the three most frequent responses in the order of their frequency, omitting the coefficients.

It will be seen that there is remarkably close agreement between children of the different ages. This is particularly striking when the present table is compared with a similar one for children as compared with adults, given in the following chapter. This agreement for the 4 different ages here in question is so close as to suggest that it would not be worth while to compile frequency tables for each age. Unless very large numbers of cases were used, something like ten thousand for each age, differences obtained with the different ages would scarcely be reliable. We believe, therefore, that we are justified in taking together, as one group, children of the 4 ages we have used, and regarding the results as representative of children in general between the ages 9 to 12 inclusive.

It may be pointed out, further, that the preceding tables may be much more correctly regarded as proper standards of association in children than can the Kent-Rosanoff tables as proper standards for adults, for the latter include responses from persons of from eight to over eighty years of age, though mainly of the adult ages. Kent and Rosanoff do not give the age distribu-

¹ See Chapter III, Composition of Groups.

tion of their subjects, but they mention a group of 78 children under 16 years of age. On the whole, however, it is probably permissible to speak of their table as an adult table, as does Rosanoff himself.

PREFERRED RESPONSES BY AGES

Stimulus	9 yrs.	10 yrs.	11 yrs.	12 yrs.
1. Table	eat legs dishes	eat dishes legs	eat dishes dish	eat dishes legs
2. Dark	night black see	night black afraid	night see room	night see afraid
3. Music	piano sing play	sing piano sweet	piano sing play	piano sing sweet
4. Sickness	ill bed doctor	doctor bed ill	bed fever doctor	ill doctor bed
5. Man	work hat rich	hat work clothes	work hat person	work hat clothes
6. Deep	hole water well	hole water well	hole well water	hole water down
7. Soft	pillow nice cotton	pillow bed cushion	pillow cotton bed	pillow bed cotton
8. Eating	bread table ice-cream	bread table food	bread table hungry	bread food eat
9. Mountain	high hill peak	high hill snow	high hill steep	high hill snow
10. House	live room chair	live warm room	live big warm	live wood warm
11. Black	dark dress color	dark color dress	dark color dress	dark dirty color
14. Hand	clock fingers work	work fingers clock	fingers work clock	fingers finger work
15. Short	small little pencil	small little dress	small little walk	small little pencil
16. Fruit	apple apples eat	eat orange apple	apple eat good	apples eat banana
17. Butterfly	fly pretty bird	fly wings pretty	fly wings pretty	fly wings butter
18. Smooth	soft flat ice	soft even level	soft even nice	soft even rough
20. Chair	sit seat legs	sit seat wood	sit seat set	sit set rocking

21. Sweet	good candy sugar	good candy sugar	good sugar oranges	good sugar candy
22. Whistle	noise blow boy	blow boy noise	noise blow loud	blow noise loud
23. Woman	lady dress women	lady dress mother	lady dress mother	lady dress children
24. Cold	winter freeze burn	ice winter snow	snow chilly freeze	winter ice weather
25. Slow	walk lazy fast	walk lazy clock	lazy walk clock	fast walk lazy
26. Wish	bone want doll	want fairy candy	want bone dog	want fairy true
27. River	water lake stream	water swim lake	water swim fish	water swim fish
28. White	dress color light	dress color light	color clean snow	paper light color
29. Beautiful	pretty nice dress	pretty nice lady	pretty nice lady	pretty nice girl
30. Window	glass pane look	glass look light	glass look pane	glass pane look
31. Rough	hard mean bad	hard bumpy mean	hard boy board	boy mean smooth
33. Foot	walk feet leg	walk toes leg	walk leg toes	walks walk leg
34. Spider	web legs bug	web legs bug	web legs bug	legs web bug
35. Needle	sew sewing thread	sew thread sewing	sew stick sewing	sew pin sharp
36. Red	color bright dress	color bright dress	color dress bright	color cloth bright
37. Sleep	bed night tired	bed night eyes	bed night tired	bed night dream
38. Anger	mad fight cross	mad mean cross	mad fight cross	mad fight scold
39. Carpet	rug floor sweep	rug floor dirty	rug floor walk	rug floor house
40. Girl	dress boy hair	dress nice doll	dress child big	dress child boy
41. High	mountain air far	mountain tall hill	hill up mountain	mountain up hill

42. Working	hard busy man	hard man men	hard man men	hard man busy
43. Sour	milk cream sweet	pickles milk vinegar	milk bitter lemon	sweet eat bitter
44. Earth	ground round black	ground dirt round	ground dirt black	ground round dirt
46. Soldier	war fight fighting	war fight man	war fight army	man fight war
47. Cabbage	eat vegetable garden	vegetable eat garden	vegetable eat leaves	eat vegetable leaves
48. Hard	stone work rock	stone rock floor	stone work soft	work floor rock
49. Eagle	bird fly big	bird fly wings	bird fly mountain	bird fly wings
50. Stomach	ache eat food	ache body eat	ache sick eat	eat ache sick
51. Stem	flower cut green	flower long flowers	flower flowers long	flower flowers long
52. Lamp	light burn glass	light burn glass	light glass burn	light glass burn
53. Dream	sleep night bed	sleep night bed	sleep night bed	sleep night bed
54. Yellow	color dress flower	color dress flower	color dress flower	color dress light
55. Bread	eat dough butter	eat flour good	eat good flour	eat flour dough
57. Boy	play ball bad	play man pants	pants cap child	play man girl
58. Light	lamp dark bright	lamp dark gas	lamp day bright	dark day lamp
60. Bible	book church holy	book God read	book read church	God book read
62. Sheep	wool animal lamb	wool animal white	wool animal lamb	wool animal white
63. Bath	water clean tub	water wash clean	water wash clean	water clean wash
64. Cottage	house lake live	house home lake	house home lake	house home lake
65. Swift	fast run horse	fast run horse	fast run horse	fast horse run

66. Blue	color dress flag	color dress sky	color dress sky	color dress sky
67. Hungry	eat bread food	eat bread food	eat bread starve	eat bread starve
68. Priest	church minister Catholic	church minister Catholic	church minister Catholic	church minister man
69. Ocean	water waves river	water sea river	water waves sea	water sea ships
70. Head	hair brains eyes	hair brains round	hair brains eyes	hair eyes brains
71. Stove	fire hot warm	hot fire warm	hot fire warm	fire heat hot
72. Long	grass big stick	far grass big	grass far dress	short far grass
74. Whiskey	drink beer drunk	drink drunk liquor	drink drunk beer	drink drunk beer
75. Child	baby good girl	baby girl boy	baby children girl	baby boy children
77. Hammer	pound nail nails	pound nail nails	pound nail nails	nail nails pound
78. Thirsty	water drink dry	drink water dry	water drink dry	water drink dry
79. City	Minneapolis country town	Minneapolis big town	Minneapolis big town	Minneapolis town big
80. Square	block box oblong	block box corner	block oblong straight	block oblong corner
81. Butter	bread yellow eat	bread yellow eat	bread yellow eat	bread eat yellow
82. Doctor	sick man medicine	sick medicine man	sick man medicine	sick medicine man
83. Loud	holler talk noise	noise holler talk	noise talk holler	holler noise talk
84. Thief	steal robber money	steal robber burglar	steal robber money	steal robber burglar
85. Lion	animal beast eat	animal beast fierce	animal eat fierce	animal fierce eat
86. Joy	happy fun glad	happy glad fun	happy glad fun	happy fun glad
87. Bed	sleep lay night	sleep lay night	sleep night lay	sleep night lay

88. Heavy	iron hard load	hard iron load	hard iron load	light hard iron
89. Tobacco	smoke chew pipe	smoke chew pipe	smoke chew pipe	smoke chew pipe
90. Baby	child little cry	child cry small	child cry little	cry child little
91. Moon	night round bright	light bright night	light shine round	light night bright
92. Scissors	cut cutting sharp	cut cutting sharp	cut cutting sharp	cut cutting cloth
93. Quiet	still sleep soft	still noise sleep	still sleep house	still house noise
94. Green	grass color dress	color grass dress	grass color dress	color grass dress
95. Salt	bitter white meat	bitter white meat	eat meat bitter	meat bitter eat
96. Street	dirty clean horse	walk dirty car	walk dirty road	walk car dirty
97. King	crown ruler good	crown ruler rule	ruler crown country	ruler rule country
98. Cheese	eat mouse rat	eat mouse bread	eat mouse butter	eat mouse yellow
99. Blossom	flower flowers apple	flower flowers apple	flower flowers apple	flower flowers white
100. Afraid	scared dark night	scared dark dog	scared dark dog	scared dark night

CHAPTER VI

COMPARISON OF ASSOCIATION TYPES OF CHILDREN AND ADULTS

Nearly every writer on the psychology of association has emphasized the difficulties of any classification of associations according to their form, or type. With respect to these difficulties, we agree absolutely with previous workers. We do not wish to minimize the uncertainty and arbitrariness of any classification of associations, particularly when unaided by introspection; nor do we claim any value, except for our present purpose, for the system of headings which we ourselves have used. As regards the aid to be obtained from introspection, it may be questioned if children's introspection would be of sufficient reliability for use in the classification of associations according to their type. At any rate, introspections were not available, either for children or adults.

Notwithstanding the difficulties, we believe that the careful classification of associations that we have made for both children and adults is of great value. In spite of the large numbers of possible errors, the comparison of these classifications brings out in unquestionable manner a number of extremely striking and important differences in the mental processes of children and adults.

In this connection, we should like to quote, approvingly, Kent and Rosanoff: "It must, indeed, be conceded that objective methods can reveal but indirectly and with uncertainty the inner mechanism which produces any association and that in any given instance it would be impossible to establish the correctness of grouping in accordance with such methods. However, to decide that question for any given reaction is really not necessary in practice, since an error made through wrongly placing one, two, or three reactions under any heading is of no significance; the types acquire importance when represented by large numbers . . . and when many reactions fall under a single heading the likelihood of error, as affecting the record as a whole, is by that fact alone greatly reduced.

"The whole question might more profitably be approached from another point of view. To what extent are the distinctions of this classification useful? An answer to this question can be found only in the results."¹ It should be explained that the above statements of Kent and Rosanoff were made concerning their system of classification and not the one we have used, but they express our attitude towards our own attempts at classification.

As regards the value of classifications as significant forms of description, we agree with Wells, who writes as follows: "In the valuable study of Kent and Rosanoff, considerable distrust is expressed of the quasi-logical categories, because of their vagueness and subjectivity. A somewhat similar opinion has been expressed by the present writer. At the same time, it could obviously not be supposed that the further development of the association test would render it possible to dispense altogether with this principle of classification. It is as impracticable to make frequency tables for all association words as it is desirable to state their results in a more significantly descriptive form than they permit."²

In our selection of classificatory categories, we have endeavored merely to get headings which would serve to describe the chief similarities and dissimilarities between the associations of children and adults. We have distinguished the following types:

- | | |
|--------------------|------------------------------|
| I. Superordination | XII. Verbs |
| II. Subordination | XIII. Participles |
| III. Coordination | XIV. Adjective-Noun |
| IV. Contrast | XV. Noun-Adjective |
| V. Similarity | XVI. Noun-Abstract Attribute |
| VI. Part-Whole | XVII. Verb-Object |
| VII. Whole-Part | XVIII. Pronouns |
| VIII. Cause-Effect | XIX. Sound-Similarity |
| IX. Effect-Cause | XX. Word-Compounding |
| X. Material | XXI. Non-Specific |
| XI. Contiguity | XXII. Miscellaneous |

¹ *Op. cit.*, pp. 27-28.

² A Preliminary Note on the Categories of Association Reactions, *Psych. Rev.* Vol. XVIII, 1911, p. 229.

The meaning of most of these headings is sufficiently clear, particularly as they are fully illustrated further on. Some of them, however, require a few words of explanation. The class of associations headed *contiguity*, includes associations by both temporal and spatial contiguity. Associations by temporal contiguity were so rare that it did not seem worth while to make a separate class of them. This class includes also any response which might be designated a spatial or temporal localization. We have also placed in this class, instead of under whole-part, any association between a person and an article of clothing.

The distinction between the classes *verbs* and *participles* is an important one, as the participles, particularly the present ones, which almost exclusively compose this class, usually have a more abstract implication than the verbs.

Under the heading, word-compounding, we have included not only cases of actual compounding but all pairs of words so closely connected as practically to form a compound word, such as high,—up and deep,—down. Under this same heading, we have placed all cases of syntactical change, except those which are classified under the heading of sound-similarity. Thus the association long,—length is classified under word-compounding and high,—height under sound similarity. This inclusion of certain cases of syntactical change under the heading of word-compounding makes the heading somewhat misleading. Perhaps 'superficial verbal' would be a better heading, in which case, association by sound similarity would be a sub-class.

The miscellaneous group includes three cases: first, associations which seemed to belong fairly well in more than one of our groups; second, associations of a sort so rare that it was not deemed worth while to make a separate classification of them; and third, associations which were extremely difficult to classify at all, at any rate, under any very general heading.

The responses classed as non-specific, no matter with what stimulus words they occurred, were the following:

article(s)	nice	thought(s)
bad	object	unnecessary
beautiful	people	unpleasant
beauty	person	use(s)
big	pleasant	used
fine	pleasantness	useful(ness)
good	pleasing	useless(ness)
happy	pleasure	using
happiness	pretty	woman
large	small	work
man	thinking	

Using the data on the ninety words which both our tables and the Kent-Rosanoff tables have in common, we have classified, with the greatest care every response in both the children's tables and the Kent-Rosanoff tables with a frequency of ten or over. For three of our classes of associations, we have classified every case, even those of a frequency of only one. These classes are the associations by similarity in sound, responses consisting of pronouns and the non-specific responses. With these classes, especially the first two of them, such a large proportion of the responses have a frequency less than ten that representative results could hardly be secured without using all cases. No response has been classified under more than one heading, with the exception of the non-specific responses. All the non-specific responses, however, are classified twice,—once under the heading of non-specific and once under some other heading.

In our tabulated summary of the various association types, we have used all the associations that we have classified. In the table, we give for each type of association, for children and adults separately, the following: first, the number of response words of the type in question (No.); 2d, their average frequency (Av. F.); third, the sum of their frequencies (Total); and fourth, the percentage of all the responses composed by the responses of the type in question, that is the percentage that the total frequency is of 90,000 (%).

SUMMARY OF DATA ON ASSOCIATION TYPES

Class	No.	Av.F.	Adults		Children			
			Total	%	No.	Av.F.	Total	%
Superordination	97	70	6,832	7.6	61	54	3,304	3.7
Subordination	45	33	1,478	1.6	43	44	1,912	2.1
Coordination	253	39	9,781	10.9	207	26	5,442	6.0
Contrast	66	144	9,500	10.6	50	24	1,201	1.3
Similarity	147	54	7,978	8.9	115	67	7,729	8.6
Part-Whole	19	52	997	1.1	15	22	337	0.4
Whole-Part	63	30	1,903	2.1	63	52	3,248	3.6
Cause-Effect	41	54	2,213	2.5	30	58	1,741	1.9
Effect-Cause	13	26	338	0.4	11	43	471	0.5
Material	20	44	878	1.0	19	43	812	0.9
Contiguity	172	31	5,372	6.0	210	66	13,763	15.3
Verbs	175	33	5,776	6.4	192	48	9,163	10.2
Participles	63	28	1,738	1.9	53	15	803	0.9
Adj.-Noun	273	23	6,204	6.9	291	35	10,077	11.2
Noun-Adj.	221	17	3,851	4.3	230	31	7,037	7.8
Noun-Abst. Att.	12	21	248	0.25	6	7	44	0.05
Verb-Object	28	27	764	0.9	33	45	1,488	1.7
Pronouns	30	2	51	0.05	104	2	202	0.22
Sound Similarity	29	2	61	0.07	133	3	384	0.43
Word-Compounding	25	28	697	0.77	27	35	942	1.04
Non-Specific	603	9	5,614	6.2	563	12	6,904	7.7
Miscellaneous	81	53	4,251	4.7	73	68	4,998	5.5

The data presented in the table admit of a number of conclusions, which, so long as they are stated in a non-mathematical manner, may be regarded as established beyond a doubt. These conclusions are the following:

(1) The following types occur more frequently in children than adults: verbs, verb-object, noun-adjective, adjective-noun, pronouns, sound similarity, contiguity, whole-part and, less definitely, subordination and word-compounding.

(2) The following types occur more frequently in adults than in children: contrast, superordination, coordination, part-whole, noun-abstract attribute, participles and, less definitely, cause and effect.

(3) The following types are about equally frequent in both: pronouns, sound similarity, contiguity, whole-part and, less definitely, reactions belonging to the miscellaneous group, and effect-cause. The results with respect to associations from effect to cause, however, we regard as unreliable for not only is the number of such cases small, but are not very clear-cut cases.

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. Differences between groups would, however, be much less dependent upon the list of stimulus words than would the relative frequency of the various types of association for a single group. For example, it presumably matters but little whether our list contains ten or thirty stimulus words with easy opposites. So long as we give the same words to both children and adults, we are justified in comparing them with respect to their tendency to give opposites.

We should like very much to print our classifications in full, but this would require too much space. We have decided, therefore, to limit our printed classifications to responses possessing a frequency of fifty or over in one or the other of the tables. These are sufficient in number to show how we have interpreted our various classificatory categories, and they illustrate fairly well the differences or similarities, as the case may be, existing between children and adults with respect to the various types.

In comparing the frequencies of response of adults and child-

ren in any one case, a number of complicating conditions should be kept in mind.

In the first place, the frequency of any single response of a given type may be lowered because of the high frequency of a response of a different type. For example, let us suppose that adults have a stronger tendency than children towards association by superordination, and at the same time a stronger tendency towards association by contrast. Now if the stimulus word is one which has an easy opposite, a very large portion of the adults' responses may consist of this opposite. Consequently, there will be fewer adult responses left to be divided among the other reaction words; and the frequency of a given superordinating response may be less with the adults than with the children, in spite of a greater tendency towards superordination on the part of the adults, simply because a greater portion of the adult responses have been used up in the contrasting response.

Again, the difference in vocabulary between adults and children has to be carefully considered. Without at present raising the general question of the explanation of the differences in association type between adults and children, it is evident that many responses (such as the response *abode*, to *house*) can not be expected from children, simply because they have not acquired them. Now it may happen in some cases that most of the fitting responses of a given association type are words which children have not at their command, in which case the frequency of the children's responses of this type would naturally be low, even though in general their tendency towards associations of this type might be high.

On the other hand, the adults may know several response words of a certain type and give all of them, whereas the children might know only one. In this case the frequency attaching to the children's single response might be greater than that attaching to the adults', simply because the children had united on the one word; and yet the general tendency of the adults towards the type of association in question might be much more pronounced than that of children.

Another point that should be considered, one of great impor-

tance, is the definiteness or accuracy with which a response shows the type of association in question. For example, the association, cabbage,—vegetable, is a much more clear cut case of super-ordination than the association, cabbage,—thing. In general it may be said that the non-specific responses,—responses, that is, which occur to many different stimulus words, are less significant than specific responses. A number of the exceptions to the general trend of differences between adults and children occur in connection with these non-specific responses. For example, the adults show a distinctly greater tendency towards superordination than the children, and yet the frequency for children is slightly greater in three of the cases where non-specific responses occur, namely, man,—person, woman,—person, and boy,—person. Similarly, in cases where the classification of an association is doubtful, differences in the frequency of that association between adults and children must be of more doubtful significance, as regards preferred types of association, than where the classification is unquestionably correct.

Lastly, one should keep in mind the unreliability of any particular frequency. Whenever the differences between the frequencies for adults and for children is small, it is not certain but that the group showing the highest frequency would not, with a larger number of subjects, show the lower frequency.

We append the classifications of responses of a frequency of fifty or over.

CLASSIFICATIONS OF ASSOCIATIONS

I. SUPERORDINATION

Stimulus	Response	Adults	Children
1. Table	furniture	75	0
3. Music	sound	95	35
5. Man	male	99	8
10. House	building	78	16
	dwelling	68	1
	home	103	39
17. Butterfly	insect	261	66
20. Chair	furniture	83	7
22. Whistle	noise	173	185
23. Woman	female	134	9
27. River	stream	117	30
34. Spider	bug	58	83
	insect	276	57
39. Carpet	covering	76	0
40. Girl	child(ren)	51	57
	female	77	22
46. Soldier	man	189	95
47. Cabbage	vegetable(s)	404	174

Stimulus	Response	Adults	Children
49. Eagle	bird	568	373
50. Stomach	organ	81	0
55. Bread	food	191	37
57. Boy	child(ren)	87	59
	male	63	9
60. Bible	book	338	224
62. Sheep	animal(s)	243	119
64. Cottage	home	85	101
68. Priest	man	75	69
74. Whiskey	liquor	70	97
77. Hammer	tool	69	11
81. Butter	food	63	19
82. Doctor	man	68	132
85. Lion	animal	326	205
	beast	67	95
97. King	man	43	66
98. Cheese	food	91	17

II. SUBORDINATION

3. Music	piano	180	198
	song(s)	74	66
4. Sickness	fever	9	50
16. Fruit	apple(s)	259	305
	banana(s)	19	96
	orange(s)	45	99
23. Woman	mother	30	53
44. Earth	clay	71	0
75. Child	boy	64	90
	girl	45	93
79. City	Minneapolis	0	218
	New York	99	2
99. Blossom	apple	50	87

III. COORDINATION

1. Table	chair(s)	274	24
5. Man	boy	44	29
6. Deep	low	51	35
10. House	barn	74	12
14. Hand	foot	204	0
16. Fruit	vegetable(s)	103	13
17. Butterfly	bird(s)	74	57
18. Smooth	nice	4	68
	soft	79	132
20. Chair	table	191	29
21. Sweet	good	26	213
23. Woman	girl	59	17
25. Slow	easy	63	13
	lazy	28	138
27. River	lake	65	42
29. Beautiful	nice	73	169
30. Window	door	57	2
31. Rough	hard	38	144
	mean	1	71
33. Foot	hand	185	5
34. Spider	fly	136	40
35. Needle	pin(s)	158	37
36. Red	black	61	0
	blue	99	9
	white	97	18
40. Girl	woman	61	8
41. High	far	1	58
43. Sour	bitter	70	63
46. Soldier	sailor	58	0
50. Stomach	intestine(s)	60	1
51. Stem	flower(s)	266	447
	leaf	96	11
53. Dream	thought(s)	60	4
54. Yellow	white	70	5
57. Boy	man	104	61
60. Bible	church	50	110
62. Sheep	lamb(s)	187	108
66. Blue	green	54	1
	red	54	21
67. Hungry	thirsty	73	14
69. Ocean	sea	75	88

Stimulus	Response	Adults	Children
70. Head	foot	64	0
72. Long	big	1	55
74. Whiskey	alcohol	50	15
	beer	46	108
75. Child	baby	193	185
	infant	122	3
	mother	55	26
79. City	country	74	86
	town	258	110
80. Square	oblong	32	95
81. Butter	milk	101	47
85. Lion	tiger	102	13
88. Heavy	hard	38	178
90. Baby	child	239	172
91. Moon	sun	120	14
	star(s)	125	19
92. Scissors	knife	66	2
93. Quiet	peaceful	52	3
	rest	68	4
94. Green	yellow	54	6
95. Salt	bitter	40	110
	pepper	142	29
	sour	18	79
	sugar	88	23
96. Street	avenue	63	34
	road	91	60
98. Cheese	bread	56	78
	butter	136	49
	milk	106	32

IV. CONTRAST

2. Dark	light	427	38
4. Sickness	health	142	6
5. Man	woman(en)	394	25
6. Deep	shallow	180	6
7. Soft	hard	365	27
9. Mountain	valley	90	3
11. Black	white	339	27
15. Short	long	279	54
	tall	168	12
18. Smooth	rough	277	35
21. Sweet	bitter	50	0
	sour	301	23
23. Woman	man	292	17
24. Cold	hot	151	12
	warm	166	25
25. Slow	fast	316	65
	quick	56	4
28. White	black	308	28
29. Beautiful	ugly	66	0
31. Rough	smooth	346	35
37. Sleep	awake	94	14
	wake	60	6
40. Girl	boy	350	40
41. High	low	328	25
43. Sour	sweet	349	75
48. Hard	soft	367	65
57. Boy	girl	319	32
58. Light	dark	231	99
	darkness	93	0
65. Swift	slow	190	28
72. Long	short	413	45
80. Square	round	250	35
83. Loud	low	57	8
	soft	165	13
86. Joy	sorrow	135	0
88. Heavy	light	273	54
93. Quiet	noise	50	70
	noisy	113	8
97. King	queen	354	50

V. SIMILARITY

2. Dark	black	76	80
4. Sickness	ill(ness)	119	100
9. Mountain	hill(s)	216	97
11. Black	dark	172	315
15. Short	little	15	157

Stimulus	Response	Adults	Children
18. Smooth	small	136	214
	even	30	70
	level	52	55
20. Chair	seat	127	131
23. Woman	lady	41	243
26. Wish	desire	197	4
28. White	clean	10	97
29. Beautiful	handsome	86	13
	lovely	64	8
	pretty	113	280
31. Rough	bumpy	1	61
38. Anger	cross	44	56
	passion	51	0
	temper	149	8
	wrath	52	0
39. Carpet	rug(s)	177	247
41. High	tall	57	56
42. Working	busy	51	49
	labor	147	18
44. Earth	dirt	115	102
	ground	166	223
58. Light	bright	47	74
62. Sheep	mutton	60	9
64. Cottage	house	461	425
65. Swift	fast	222	391
	quick	117	10
68. Priest	clergyman	62	0
	minister	178	168
	preacher	35	57
72. Long	far	8	90
78. Thirsty	dry	218	132
81. Butter	grease	76	5
82. Doctor	physician	213	6
83. Loud	noisy	112	11
84. Thief	burglar	118	64
	robber	126	229
	fun	6	182
86. Joy	glad	27	203
	happiness	215	25
	happy	71	260
	pleasure	121	6
90. Baby	infant	168	20
93. Quiet	still	136	300
97. King	ruler	162	170
99. Blossom	flower(s)	540	579
100. Afraid	nervous	55	1
	scared	106	290
	timid	55	7

VI. PART-WHOLE

16. Fruit	tree(s)	62	11
33. Foot	limb	58	0
46. Soldier	army	137	63
50. Stomach	body	99	78
51. Stem	plant	74	25
70. Head	body	146	26
99. Blossom	tree(s)	57	9

VII. WHOLE-PART

1. Table	leg(s)	23	78
3. Music	notes	17	10
9. Mountain	peak(s)	17	50
	rock(s)	18	49
10. House	room(s)	17	64
14. Hand	finger(s)	112	199
17. Butterfly	wing(s)	41	137
30. Window	glass	316	421
	pane	82	62
33. Foot	toe(s)	71	115
34. Spider	legs	27	107
47. Cabbage	leaves	11	62
49. Eagle	wing(s)	24	92
62. Sheep	wool	143	411
69. Ocean	wave(s)	57	96
70. Head	brain(s)	90	162
	eye(s)	12	107
	hair	159	203
79. City	house(s)	55	29

VIII. CAUSE-EFFECT

Stimulus	Response	Adults	Children
4. Sickness	death	115	8
52. Lamp	light	650	648
63. Bath	clean	120	192
	cleanliness	109	1
71. Stove	fire	217	164
	heat	213	112
74. Whiskey	drunk	31	138
91. Moon	light	231	155

IX. EFFECT-CAUSE

37. Sleep	tired	26	67
67. Hungry	appetite	57	3
100. Afraid	burglar(s)	5	60
	dark	114	151
	dog	1	73

X. MATERIAL

2. Table	wood	76	21
35. Needle	steel	53	23
52. Lamp	glass	8	50
55. Bread	dough	26	80
	flour	88	95
36. Bath	water	339	295
77. Hammer	iron	45	62

XI. CONTIGUITY

1. Table	dish(es)	45	159
2. Dark	night	221	421
4. Sickness	bed	54	105
	doctor	62	116
5. Man	hat	7	82
8. Eating	table	21	108
9. Mountain	snow	10	61
14. Hand	arm	63	44
30. Window	light	186	47
33. Foot	leg(s)	55	115
	shoe(s)	163	81
35. Needle	thread	160	72
37. Sleep	bed(s)	75	382
	night	49	95
38. Anger	boy(s)	3	53
39. Carpet	floor	256	149
40. Girl	dress	8	240
46. Soldier	gun	27	61
50. Stomach	food	102	83
51. Stem	pipe	70	42
53. Dream	bed	11	78
	night	42	260
54. Bread	butter	151	8
57. Boy	ball	10	55
	cap	1	53
	pants	6	63
58. Light	day	81	67
64. Cottage	lake	5	117
68. Priest	church	166	271
69. Ocean	boat(s)	7	54
	ship(s)	35	79
74. Whiskey	saloon	15	57
81. Butter	bread	206	467
82. Doctor	medicine	149	136
	sick	52	448
	sickness	104	34
84. Thief	money	16	63
87. Bed	night	11	106
89. Tobacco	pipe	69	70
90. Baby	milk	1	55
91. Moon	night	66	128
	sky	73	103
	stars	93	10
96. Street	horse(s)	2	96
97. King	crown	13	124
	country	63	83
98. Cheese	mice	25	59
	mouse	13	128
	rat(s)	15	89

XII. VERBS

Stimulus	Response	Adults	Children
1. Table	eat	63	358
2. Dark	see	0	47
3. Music	play	7	81
	sing	12	153
5. Man	work	17	168
8. Eating	eat	0	51
9. Mountain	climb	9	29
10. House	live	33	165
14. Hand	work	49	113
	write	3	52
16. Fruit	eat	62	153
17. Butterfly	fly	44	179
20. Chair	sit	107	430
22. Whistle	blow	95	189
	sing	75	6
24. Cold	freeze	7	68
25. Slow	walk	8	107
26. Wish	hope	51	10
	want	66	99
27. River	swim	4	72
30. Window	look	15	116
33. Foot	walk	106	205
34. Spider	crawls	1	54
35. Needle	sew	134	449
37. Sleep	dream	28	55
	rest	300	40
	wake	60	6
38. Anger	fight	8	57
39. Carpet	walk	15	88
43. Sour	eat	0	54
46. Soldier	fight	17	160
47. Cabbage	eat	30	193
49. Eagle	fly	46	120
50. Stomach	ache	31	189
	eat	45	108
52. Lamp	burn	20	70
53. Dream	sleep	339	272
55. Bread	eat	148	356
57. Boy	play	20	84
60. Bible	read	31	116
63. Bath	wash	102	143
64. Cottage	live	17	79
65. Swift	run	19	202
67. Hungry	eat	126	337
70. Head	think	9	59
71. Stove	burn	12	103
	cook	24	62
74. Whiskey	drink	232	279
77. Hammer	pound	51	288
78. Thirsty	drink	206	364
79. City	live	7	50
81. Butter	eat	34	122
83. Loud	holler	16	190
84. Thief	steal	212	320
85. Lion	eat	1	109
	roar	46	52
87. Bed	lay	8	109
	rest	132	17
	sleep	345	453
89. Tobacco	chew	28	214
	smoke	387	466
90. Baby	cry	37	119
91. Moon	shine	26	107
92. Scissors	cut	347	802
96. Street	walk	78	88
97. King	rule	10	107
98. Cheese	eat	67	251
100. Afraid	fear	197	14

XIII. PARTICIPLES

3. Music	singing	48	23
8. Eating	drinking	166	2
20. Chair	sitting	56	17
35. Needle	sewing	107	81
67. Hungry	eating	64	5
84. Thief	stealing	69	10
89. Tobacco	smoking	98	28
92. Scissors	cutting	114	48

XIV. ADJECTIVE-NOUNS

Stimulus	Response	Adults	Children
6. Deep	hole	32	257
	ocean	93	15
	sea	90	14
	water	134	145
	well	44	87
7. Soft	bed	12	57
	bread	4	45
	cotton	28	57
	cushion	25	39
	pillow	53	138
11. Black	dress	29	63
	night	51	15
18. Smooth	glass	56	48
21. Sweet	apple(s)	14	66
	candy	82	146
24. Cold	sugar	224	178
	ice	114	84
	snow	45	62
	winter	120	103
25. Slow	snail	62	2
28. White	cloth	17	61
	dress	34	149
	light	51	125
	paper	17	54
	snow	91	65
29. Beautiful	flower(s)	55	43
31. Rough	boy(s)	8	126
36. Red	apple(s)	16	56
	blood	71	14
	cloth	8	65
	dress	18	85
	air	5	50
41. High	hill	20	92
	mountain(s)	173	125
	man	1	93
42. Working	men	0	52
	apple(s)	37	96
43. Sour	cream	0	52
	lemon(s)	95	60
	milk	31	124
	pickle(s)	41	110
	vinegar	91	53
	floor	16	54
	ground	2	51
48. Hard	rock	38	92
	stone	102	113
	wood	66	30
	work	19	89
	dress	9	129
	flower	38	105
	light	14	59
	orange	47	81
	horse	28	124
	dress	18	173
65. Swift	flag	6	82
	sky	239	102
	distance	81	6
72. Long	grass	4	75
	box	36	80
80. Square	corner(s)	25	89
	noise	205	201
83. Loud	talk	12	130
	iron	70	213
88. Heavy	lead	60	35
	load	57	72
	weight	177	39
	house	3	62
	dress	6	100
93. Quiet	grass	284	2
	meat	18	99
94. Green	water	34	60
95. Salt			

XV. NOUN-ADJECTIVE

Stimulus	Response	Adults	Children
3. Music	sweet	47	79
5. Man	big	0	26
9. Mountain	high	246	390
10. House	big	4	51
	warm	3	62
16. Fruit	good	24	89
17. Butterfly	pretty	39	89
22. Whistle	loud	27	71
35. Needle	sharp	152	56
36. Red	bright	40	68
39. Carpet	soft	78	28
44. Earth	black	7	73
	round	61	82
46. Soldier	brave	46	53
49. Eagle	big	0	52
50. Stomach	sick	10	85
51. Stem	long	18	60
55. Bread	good	21	90
60. Bible	holy	57	68
62. Sheep	white	18	57
68. Priest	Catholic	36	111
69. Ocean	deep	87	23
70. Head	round	21	58
71. Stove	black	59	37
	hot	86	200
	warm	32	127
75. Child	good	7	78
	small	52	45
79. City	big	9	124
	large	62	40
81. Butter	soft	65	8
	yellow	80	117
85. Lion	big	2	83
	fierce	36	119
90. Baby	little	12	97
	small	42	90
91. Moon	bright	52	115
	round	33	101
92. Scissors	sharp	190	35
95. Salt	white	36	97
96. Street	clean	7	90
	dirty	5	85
	long	29	13
	narrow	21	3
98. Cheese	good	15	57
	yellow	32	76

XVII. VERB-OBJECT.

8. Eating	bread	46	178
	food	170	54
26. Wish	fairy	11	64
77. Hammer	nail(s)	283	404

XX. WORD-COMPOUNDING

1. Table	cloth	57	43
26. Wish	bone	19	85
34. Spider	web	188	261
41. High	up	26	60
63. Bath	tub	71	131
72. Long	length	50	25
96. Street	car(s)	18	80

XXII. MISCELLANEOUS

11. Black	color	129	104
14. Hand	clock	1	65
21. Sweet	taste	57	23
22. Whistle	boy(s)	61	103
27. River	water	393	433
28. White	color	170	116
36. Red	color	254	298
38. Anger	cross	44	56
	mad	121	471
	mean	1	53
42. Working	hard	105	299

Stimulus	Response	Adults	Children
43. Sour	taste	55	28
46. Soldier	war	94	203
50. Stomach	digestion	50	1
54. Yellow	color	301	320
58. Light	gas	21	64
	lamp	82	251
	sun	85	29
60. Bible	God	43	124
	religion	89	4
66. Blue	color	256	318
67. Hungry	bread	26	173
	food	136	55
69. Ocean	water	427	413
77. Hammer	hard	53	20
78. Thirsty	water	341	377
80. Square	block	71	300
89. Tobacco	habit	94	1
93. Quiet	sleep	24	72
94. Green	color	200	237
95. Salt	taste	87	21
100. Afraid	coward	53	19
	night	12	59

Classes XVI, XVIII, XIX and XXI have been omitted from the preceding tables. Under the heading noun-abstract attribute (class XVI), there was only one association of a frequency of over 50 with either adults or children, the association, mountain,—height (adults, 73, children 15). Other cases, of lesser frequency, are the following: butterfly,—beauty; eagle,—flight; Bible,—truth; ocean,—depth; child,—innocence; and lion,—strength. Under the heading of pronouns (class XVIII), we have simply included every response consisting of a pronoun. The list of responses called non-specific (class XXI) has already been given in the earlier part of this chapter. Associations by sound-similarity (class XIX) in no case reach a frequency as high as 50, and in most cases have a frequency of only one or two. The following list of illustrations will suffice: table,—able; dark,—mark; short,—port; slow,—oh; wish,—mish; river,—sliver; red,—Ed; anger,—angry; high,—height; working,—work; city,—citizen; blue,—mew; stove,—love; stove,—move; and afraid,—maid.

CHAPTER VII

COMPARISON OF PREFERRED RESPONSES OF CHILDREN AND ADULTS

We have listed below the three most frequent responses of both children and adults. The results for the children are taken from our children's frequency tables and those for adults from the Kent-Rosanoff tables. The frequencies of the three commonest responses of each group are given in heavy faced figures. For each of these three highest frequencies of one group, are given the corresponding frequencies of the other group. For example, with the stimulus word *music*, the three commonest adult responses are *piano* (180), *sound* (95) and *song* (68), while the three commonest children's responses are *piano* (198), *sing* (153) and *sweet* (79). *Sound* and *song* are not among the children's three most frequent responses, but their frequency with children is given, for the sake of comparison, in plain type. Similarly, the words *sing* and *sweet*, though not among the adults' three most frequent responses, have their frequency given in plain type. The table follows.

COMPARISON OF PREFERRED RESPONSES

Stimulus Word	Response Word	Frequencies		Stimulus Word	Response Word	Frequencies	
		Adults	Children			Adults	Children
1. Table	chair	207	16	6. Deep	male	99	8
	wood	76	21		boy	44	29
	furniture	75	0		work	17	168
	eat	63	358		hat	7	82
	dishes	40	126		person	30	45
	legs	10	70				
2. Dark	light	427	38	7. Soft	hard	365	27
	night	221	421		pillow	53	138
	black	76	80		easy	34	15
	see	0	57		bed	12	57
3. Music	piano	180	198	8. Eating	cotton	28	57
	sound	95	35		food	170	54
	song	68	50		drinking	166	2
	sing	12	153		bread	46	178
	sweet	47	79		table	21	108
4. Sickness	health	142	6	9. Mountain	high	246	390
	death	115	8		hill	184	91
	illness	71	5		valley	90	3
	doctor	62	116		snow	10	61
	bed	54	105				
ill	48	95					
5. Man	woman	394	8				

Stimulus Word	Response Word	Frequencies		Stimulus Word	Response Word	Frequencies	
		Adults	Children			Adults	Children
10. House	home	103	39	26. Wish	desire	197	4
	building	78	16		want	66	99
	barn	74	12		hope	51	10
	live	33	165		bone	0	85
	warm	3	62		fairy	19	64
	big	4	51	27. River	water	393	433
11. Black	white	339	27		stream	117	30
	dark	172	315		lake	65	42
	color	129	104		swim	4	72
	dress	29	63	28. White	black	308	28
14. Hand	foot	204	0		color	170	116
	fingers	83	130		snow	91	65
	arm	68	44		dress	34	149
	work	49	113	light	51	125	
	clock	1	65	29. Beautiful	pretty	113	280
15. Short	long	279	54		handsome	86	13
	tall	168	12		nice	73	169
	small	136	214		lady	5	38
	little	15	157	30. Window	glass	316	421
16. Fruit	apple	157	131		light	186	47
	apples	102	174		pane	82	62
	vegetable	75	10		look	15	116
	eat	62	153	31. Rough	smooth	346	35
17. Butterfly	insect	261	66		hard	38	144
	bird	64	57		uneven	38	13
	fly	44	179		boy	4	89
	wings	31	114	mean	1	71	
	pretty	39	89	33. Foot	hand	185	5
18. Smooth	rough	277	35		shoe	148	73
	soft	79	132		walk	106	205
	glass	56	48		toes	41	81
	even	30	70	leg	54	79	
	nice	4	68	34. Spider	insect	276	57
20. Chair	table	191	29		web	188	261
	seat	127	131		fly	136	40
	sit	107	430		legs	27	107
	set	0	38	bug	58	83	
21. Sweet	sour	301	23	35. Needle	thread	160	72
	sugar	224	178		sharp	152	56
	candy	82	146		pin	147	36
	good	26	213		sew	134	449
22. Whistle				sewing	107	81	
	noise	173	185	36. Red	color	254	298
	sound	103	18		blue	99	9
	blow	95	189		white	97	18
boy	56	79	dress		18	85	
23. Woman				bright	40	68	
	man	292	17	37. Sleep	rest	300	40
	female	134	9		awake	94	14
	girl	59	17		bed	75	351
lady	41	243	night		49	95	
	dress	28	96	tired	26	67	
	mother	30	53	38. Anger	temper	149	8
24. Cold	warm	166	25		mad	121	471
	hot	151	12		wrath	52	0
	winter	120	103		cross	44	56
	ice	114	84	fight	8	57	
	freeze	7	68	39. Carpet	floor	256	149
25. Slow	fast	316	65		rug	163	245
	easy	63	13		soft	78	28
	snail	62	2		walk	15	88
	lazy	28	138	40. Girl	boy	350	40
walk	8	107	female		77	22	
			woman		61	8	
			dress		8	240	
				child	49	45	

Stimulus Word	Response Word	Frequencies		Stimulus Word	Response Word	Frequencies	
		Adults	Children			Adults	Children
41. High	low	328	25	55. Bread	food	191	37
	mountain	157	120		butter	151	68
	tall	57	56		eat	148	356
	hill	20	92		flour	88	95
	up	26	60	good	21	90	
42. Working	labor	147	18	57. Boy	girl	319	32
	hard	105	299		man	104	61
	busy	51	49		child	86	45
	man	50	93		play	20	84
	men	6	51		pants	6	63
43. Sour	sweet	349	75	58. Light	dark	231	99
	vinegar	91	53		darkness	93	0
	lemon	78	57		sun	85	29
	milk	31	124		lamp	82	251
	pickles	26	89		bright	47	74
44. Earth	ground	166	223	60. Bible	book	338	224
	dirt	115	102		religion	89	4
	clay	71	0		holy	57	68
	round	61	82		God	43	124
46. Soldier	man	169	95	62. Sheep	animal	225	117
	army	137	63		lamb	151	79
	war	94	203		wool	143	411
	fight	17	160				
47. Cabbage	vegetable	394	140	63. Bath	water	339	295
	plant	48	27		clean	120	192
	green	44	21		cleanliness	109	1
	eat	30	193		wash	102	143
	leaves	11	62				
48. Hard	soft	367	65	64. Cottage	house	461	425
	stone	102	113		home	85	101
	wood	66	30		country	36	6
	rock	38	92		lake	5	117
	work	19	89				
49. Eagle	bird	568	373	65. Swift	fast	222	391
	fly	46	120		slow	190	28
	flying	23	10		quick	117	10
	wings	16	49		run	19	202
50. Stomach	horse			66. Blue	color	256	318
	food	102	82		sky	239	102
	body	99	78		green	54	1
	organ	81	0		dress	18	173
	ache	31	189				
51. Stem	eat	45	108	67. Hungry	food	136	55
	sick	10	85		eat	126	337
	flower	259	367		eating	64	5
	leaf	96	11		bread	26	173
52. Lamp	plant	74	25	68. Priest	minister	178	168
	flowers	7	80		church	166	271
	long	18	60		clergyman	62	0
					Catholic	36	111
53. Dream	light	650	648	69. Ocean	water	427	413
	oil	49	38		deep	87	23
	chimney	37	18		sea	75	88
	burn	20	79		waves	45	88
	glass	8	50				
54. Yellow	sleep	339	272	70. Head	hair	159	203
	vision	48	4		body	146	26
	night	42	260		foot	64	0
	bed	11	78		brains	32	137
54. Yellow	eyes			71. Stove	eyes	10	91
	color	301	320		fire	217	164
	white	70	5		heat	213	117
	orange	47	81		hot	86	200
	dress	9	129		warm	32	127
flower	38	105					

Stimulus Word	Response Word	Frequencies						
		Adults	Children					
72. Long	short	413	45		sleeping	41	16	
	distance	81	6		night	11	106	
	length	50	25		lay	8	109	
	far	8	90					
	grass	4	75	88. Heavy	light	273	54	
big	1	55	weight		177	39		
74. Whiskey	drink	232	279	iron	70	213		
	liquor	70	97	hard	38	178		
	alcohol	50	15	load	57	72		
	beer	46	108	89. Tobacco	smoke	387	466	
drunk	31	138	smoking		98	28		
75. Child	baby	193	185	pipe	69	70		
	infant	122	3	chew	28	214		
	boy	64	90	90. Baby	child	238	172	
	children	0	94		infant	168	20	
77. Hammer	girl	45	93	small	42	90		
	nail	185	218	cry	37	119		
	nails	98	186	little	12	97		
	tool	69	11	91. Moon	light	231	155	
pound	51	288	sun		120	14		
78. Thirsty	water	341	377		stars	93	10	
	dry	218	132	night	66	128		
	drink	206	364	bright	52	115		
79. City	town	258	110	92. Scissors	cut	347	802	
	New York	99	2		sharp	190	35	
	country	74	86		cutting	114	48	
	Minneapolis	0	218	93. Quiet	still	136	300	
big	9	124	noisy		113	18		
80. Square	round	250	35		rest	68	4	
	block	71	300	noise	50	70		
	table	47	5	sleep	24	72		
	corner	7	83	94. Green	grass	284	272	
oblong	32	95	color		200	237		
81. Butter	bread	206	467		yellow	54	6	
	milk	101	47	dress	6	100		
	yellow	89	117	95. Salt	pepper	142	29	
	eat	34	122		sugar	88	23	
82. Doctor	physician	213	6		taste	87	21	
	medicine	149	136		bitter	40	110	
	sickness	104	34	meat	18	99		
	sick	52	448	white	36	97		
83. Loud	man	68	132	96. Street	road	91	60	
	noise	205	201			city	82	8
	soft	165	13			walk	78	88
	noisy	112	11			dirty	5	85
	holler	16	190			car	10	79
84. Thief	talk	12	130	97. King	queen	354	50	
	steal	212	320		ruler	162	170	
	robber	126	229		crown	63	124	
	burglar	118	64		rule	10	107	
85. Lion	98. Cheese	animal	326	butter	136	49		
		tiger	102	milk	106	32		
		beast	67	food	91	17		
		fierce	36	eat	67	251		
		eat	1	mouse	13	128		
86. Joy	yellow		109	mouse	13	128		
	happiness	215	25	yellow	32	78		
	sorrow	135	0	99. Blossom	flower	467	486	
	pleasure	121	6		flowers	73	93	
	happy	71	260		apple	50	87	
	glad	27	203	100. Afraid	fear	197	14	
fun	6	182	dark		114	151		
87. Bed	sleep	345	453		scared	106	290	
	rest	132	17	dog	1	73		

The preceding table shows in a striking manner how dissimilar are responses given by children from those given by adults. Only for 39% of the stimulus words is the most frequent response the same for both adults and children. Only for five stimulus words are the three most frequent adult responses also the three most frequent child responses. These stimulus words, with their responses, are sheep (animal, lamb, wool), thirsty (water, dry, drink), thief (steal, robber, burglar), scissors (cut, sharp, cutting) and blossom (flower, flowers, apple).

It may be observed that the response given most frequently by the adults is less apt to be one of the three most frequent children's responses than is a response given most frequently by the children to be one of the three most frequent of the adults' responses. The favorite adult reaction is one of the three most frequent of the children's in 59 per cent of the cases, while the children's favorite reaction is one of the adults' three most frequent in 74 per cent of the cases. Now it is shown in Chapter VIII that there are more adult responses not given by children than there are children's responses not given by adults. We may consequently conclude that the adult responses differ from children's not so much because of the dropping off of the children's responses as by the occurrence of additional responses. Of course the occurrence of additional responses causes a decrease in the percentage of the child responses given by adults. The range of adult responses is, however, broader than that of the children's. The adults retain what the children have and acquire much more besides.

It is of interest to note, further, how the absolute frequencies of the three preferred reactions of adults and children compare with each other. The average frequency of the favorite adult reaction is 264 (median 252), of the favorite children's reaction 270 (median 251). The number of adults' frequencies over 400 is 7, and of children's, 16. The number of adult frequencies over 300 is 34, and of children's, 36. The percentage of the entire 90,000 responses included by the three most frequent words is, for adults, 46% and for children, 48%. It is evident, then, that, with the list of stimulus words here used, there is not

much difference between children and adults in the average frequency of the favorite reaction. This result is very interesting when compared, with the findings of Saling, Reinhold and Römer.¹

¹ See Chap. II, pp. 10-13 and 20-21.

CHAPTER VIII

INDIVIDUAL RESPONSES AND TOTAL NUMBER OF RESPONSE WORDS

The tendency of children, as compared with adults, to give individual responses has not hitherto been properly set forth. We will show that previous experimenters have not succeeded in reaching a general answer to the question whether children give more individual responses than adults. With the list of stimulus words we have used, children give decidedly fewer individual associations than adults.

A great deal of misunderstanding must exist regarding this matter, as nearly all experimenters (Ziehen, Wreschner, Saling, Reinhold and the Rosanoffs) have been cited to the effect that children give distinctly fewer common associations (and hence more individual association) than adults.¹ That the work of these experimenters has been incorrectly interpreted, we believe can be easily pointed out.

In the first place, Ziehen did not draw any conclusion concerning common and individual associations. He could not, because to do so requires frequency tables, and Ziehen had no frequency tables. It is true that Ziehen concluded that the commonest effect of the stimulus word in children is to call up an individual representation (*Individualvorstellung*). But the term, individual, as here used by Ziehen, is far from meaning an association not given by others. It means a concrete image as contrasted with a general idea.

Considering next the work of Wreschner, we have simply to observe that conclusions concerning the tendency of children to give individual associations, a matter which has to be determined statistically, can not very safely be drawn from an investigation employing but 2 subjects, both under 6 years of age.

¹ See Whipple G. M., 'Manual of Physical and Mental Tests,' 2d Ed., Part II, 1915, p. 60.

Saling did not consider the matter of individual associations, but made merely a comparison of children and adults with respect to the frequency of the favorite, or most frequent, reaction.²

Reinhold, like Saling, did not consider the matter of individual associations, but merely the variation with age in the average frequency of the favorite response. On this point his data are materially different from those of Saling.³ If it be said that these investigators show that the most frequent reaction has a higher frequency with adults than with children, and that *consequently* children must be supposed to give a larger number of individual associations, we can only ask, who has shown this? Our own data, and, on this point, there are no other at hand, show no such relation between the frequency of preferred responses and the total number of responses. We find the average frequency of the most frequent response to be very nearly the same in both children and adults whereas we find that adults give a decidedly larger number of individual associations.

We come, lastly, to the investigation made by the Rosanoffs. What the Rosanoffs actually showed is that younger children give a larger percentage of responses not found in the Kent-Rosanoff adult tables than do the older children. This conclusion should not be misleadingly stated by saying simply that children give more individual associations than adults. That children would give adult responses less often than adults seems clear. When, however, one says that children give more individual associations than adults, he implies that they give more responses with a frequency of only one. This is not the case, as will be seen below.

In order, now, to show the tendency of children, as compared with adults, to give individual associations, we give merely the number of associations in both the children and adult tables with a frequency of one. With children, we take as individual responses, those which have a frequency of only one in our children's (written) frequency tables. With adults, we take as individual responses, those with a frequency of one in the Kent-Rosanoff tables. This means we follow the same procedure with

² See Chapter II, p. 10, 11.

³ See Chapter II, p. 13.

both children and adults that Kent and Rosanoff do in the case of adults. We shall not, however, make any distinction between 'doubtful'⁴ reactions and individual reactions. We define as an individual association, then, any response occurring only once in a frequency table of 1,000 responses. This is a technical definition. Broadly speaking, we regard as an individual association any association not commonly given by persons of the class in question. In order to get figures, it is necessary to agree on some standard for determining whether an association is commonly given. We arbitrarily agree to call uncommon an association found only once in a thousand cases.

The figures on individual associations, as defined above, for both adults and children, are given in the accompanying table.

INDIVIDUAL RESPONSES, NINETY STIMULUS WORDS

Stimulus	Children	Adults	Stimulus	Children	Adults
1. Table	49	66	51. Stem	69	57
2. Dark	50	70	52. Lamp	37	39
3. Music	45	92	53. Dream	77	117
4. Sicknes	54	81	54. Yellow	66	79
5. Man	59	111	55. Bread	46	52
6. Deep	49	70	57. Boy	85	105
7. Soft	64	79	58. Light	62	84
8. Eating	46	82	60. Bible	38	63
9. Mountain	52	82	62. Sheep	64	62
10. House	55	96	63. Bath	39	46
11. Black	49	62	64. Cottage	48	75
14. Hand	65	80	65. Swift	51	77
15. Short	75	101	66. Blue	64	65
16. Fruit	23	61	67. Hungry	87	92
17. Butterfly	29	77	68. Priest	54	91
18. Smooth	41	91	69. Ocean	40	58
20. Chair	24	54	70. Head	62	84
21. Sweet	35	55	71. Stove	30	44
22. Whistle	45	84	72. Long	95	116
23. Woman	54	89	74. Whiskey	41	94
24. Cold	51	70	75. Child	73	91
25. Slow	30	131	77. Hammer	46	51
26. Wish	44	144	78. Thirsty	28	47
27. River	23	75	79. City	53	78
28. White	76	79	80. Square	67	105
29. Beautiful	33	109	81. Butter	32	48
30. Window	48	52	82. Doctor	39	98
31. Rough	68	121	83. Loud	72	75
33. Foot	68	69	84. Thief	50	98
34. Spider	56	77	85. Lion	48	81
35. Needle	24	35	86. Joy	47	104
36. Red	65	70	87. Red	31	54
37. Sleep	67	71	88. Heavy	63	100
38. Anger	68	175	89. Tobacco	32	70
39. Carpet	56	62	90. Baby	54	85
40. Girl	55	104	91. Moon	33	58
41. High	72	61	92. Scissors	23	49
42. Working	70	122	93. Quiet	53	100
43. Sour	53	50	94. Green	58	65
44. Earth	59	80	95. Salt	60	80
46. Soldier	48	88	96. Street	62	89
47. Cabbage	36	58	97. King	84	72
48. Hard	67	93	98. Cheese	32	75
49. Eagle	49	53	98. Cheese	69	57
50. Stomach	70	84	99. Blossom	39	52
			100. Afraid	49	124

⁴ Kent and Rosanoff classify as 'doubtful' any response which occurs only once, but it is a grammatical variant of some other obtained response.

SUMMARY

	Children	Adults
Total number	4,702	7,171
Per Cent of all Responses.....	5.2	8.0
Av. per Stim. Word	52	80
Median per Stim. Word	50	79

In the case of only five words, does the number of individual responses given by the children exceed that given by the adults. These five words are *high*, *sour*, *stem*, *sheep*, and *king*. The largest number of individual responses given by the children is 95, to the word *long*. The largest number given by the adults is 175, to *anger*. The adults give over 95 individual responses to each of 20 words. For 92 per cent of the words, the number of individual responses for the adults exceeds the median number for the children. It is clear, then, that children give decidedly fewer individual associations than adults.

Besides the percentage of individual responses, that is, of responses of a frequency of one, it is of interest to note the percentage of responses of other frequencies. This is shown in the following table, which gives the percentage of the total number of responses, made up by responses of various specified frequencies.

PERCENTAGES (OF ALL RESPONSES) COMPOSED BY RESPONSES OF VARIOUS FREQUENCIES

Frequency	Percentage of all Responses Children	Adults
1	5.2	8.0
2—9 incl	12.4	13.6
10—99 "	39.3	37.7
100—199 "	16.8	16.0
200—299 "	10.1	10.7
300—399 "	7.7	10.2
400 or over	8.5	3.8

In this connection, it is interesting to note that adults give more of the children's responses than do children of the adults' responses. To show this, we have determined, first, the number of responses given by adults not occurring in our children's frequency tables (written responses) and, second, the number of responses given by children not occurring in the Kent-Rosanoff tables. The adults give 8,847 words which do not occur in our children's frequency tables. These words have a combined or total frequency of 19,742. The children, on the other hand, give only 5,253 words not occurring in the Kent-Rosanoff tables. The total frequency of these words is 12,510. These results are in accord with the general fact, already noted in another con-

nection,³ that the adults tend to keep the children's responses, while acquiring new ones. This is what we should expect, since evidently all the children's responses are responses which adults could give and would give occasionally, whereas a great many of the adult responses involve associations that are hardly possible for the child, if for no other reason, on account of his limited experience and speech endowment. The adults' experience *includes* the child's experience.

Lastly, we may consider the total number of different response words given. The data are given in the accompanying table.

TOTAL NUMBER OF RESPONSE WORDS, NINETY STIMULUS WORDS

Stimulus	Children	Adults	Stimulus	Children	Adults
1. Table	104	124	51. Stem	103	120
2. Dark	104	114	52. Lamp	63	78
3. Music	84	172	53. Dream	125	185
4. Sickness	123	145	54. Yellow	104	149
5. Man	150	169	55. Bread	83	104
6. Deep	112	119	57. Boy	159	174
7. Soft	163	155	58. Light	117	142
8. Eating	127	168	60. Bible	91	128
9. Mountain	103	142	62. Sheep	106	110
10. House	144	184	63. Bath	71	93
11. Black	112	109	64. Cottage	80	142
14. Hand	148	146	65. Swift	89	127
15. Short	138	159	66. Blue	108	116
16. Fruit	70	123	67. Hungry	136	173
17. Butterfly	81	145	68. Priest	92	161
18. Smooth	116	157	69. Ocean	69	110
20. Chair	77	107	70. Head	115	163
21. Sweet	82	95	71. Stove	57	91
22. Whistle	114	151	72. Long	178	178
23. Woman	129	163	74. Whiskey	71	152
24. Cold	118	123	75. Child	115	162
25. Slow	128	204	77. Hammer	76	109
26. Wish	106	232	78. Thirsty	52	86
27. River	73	127	79. City	109	131
28. White	125	135	80. Square	122	195
29. Beautiful	110	182	81. Butter	58	101
30. Window	88	102	82. Doctor	68	151
31. Rough	156	201	83. Loud	115	140
33. Foot	112	127	84. Thief	86	170
34. Spider	105	126	85. Lion	93	137
35. Needle	61	72	86. Joy	88	172
36. Red	112	138	87. Bed	72	112
37. Sleep	105	129	88. Heavy	109	158
38. Anger	99	281	89. Tobacco	64	122
39. Carpet	106	135	90. Baby	104	150
40. Girl	123	169	91. Moon	75	110
41. High	130	120	92. Scissors	36	181
42. Working	127	221	93. Quiet	96	167
43. Sour	89	91	94. Green	96	122
44. Earth	109	162	95. Salt	107	146
46. Soldier	91	159	96. Street	119	163
47. Cabbage	80	126	97. King	135	120
48. Hard	110	156	98. Cheese	60	146
49. Eagle	89	109	99. Blossom	63	99
50. Stomach	123	162	100. Afraid	92	189

SUMMARY

	Children	Adults
Total Number	9,183	12,871
Average per Stimulus Word	102	143
Median " "	105	142

³ See Chapter VII, p. 97.

The total number of response words is greater with adults in the case of all but 6 stimulus words. These 6 stimulus words are *soft*, *black*, *hand*, *high*, *long* and *king*. They each have an opposite or coordinate similar to an opposite (as *hand*,—*foot* and *king*,—*queen*) which, in accordance with the general rule, absorbs a much larger portion of the adults' responses than of the children's. The largest array of responses given by the children occurs with the word *long*, to which they give 178 responses, whereas the adults give as high as 281 responses to the word *anger*, and give over 200 responses to each 5 words. For 89 per cent of the stimulus words, the number of responses given by the adults is larger than the median number given by the children. Of the 12,871 adults' response words, 8,847, or 69 per cent, are not given by the children; while of the 9,183 children's response words, 5,253, or 57 per cent, are not given by adults.

CHAPTER IX

COMPARISON OF ORAL AND WRITTEN RESPONSES

Since the Kent-Rosanoff data were obtained orally, while ours were obtained in writing, it seemed desirable to check up our data with results obtained orally. This we did, as already explained, in the case of the first 9 words. We find that the written and oral results, taken as a whole, are essentially similar. Since the 9 words used constitute a fair sample of the whole list, it may be presumed that our results are valid no matter which method is used.

In the preceding chapters, we have drawn conclusions concerning the differences between children and adults on the following points:

1. The frequencies of various association types.
2. Preferred reactions and their frequencies.
3. Individual responses and the total number of response words.

We shall proceed to compare, on each of these points, the responses obtained orally and those obtained in writing. By putting the Kent-Rosanoff data on adults alongside our data on children, we will show that every conclusion we have drawn holds for the children's oral responses as well as for their written ones.

1. The Frequency of Various Association Types.—We give below the total number of associations of each type obtained in response to the first 9 stimulus words. In the first column, is given the number of children's written responses, in the second, the number of children's oral responses and in the third, the number of adults' responses. That the 9 words here considered are fairly representative of the total results, is shown by the fact that for most types the ratios between children and adults are roughly the same for the 9 words as for the total results.

TOTAL FREQUENCIES OF VARIOUS ASSOCIATION TYPES
NINE STIMULUS WORDS

	Association Type	Children		Adults (Oral)
		Written	Oral	
Preferred by Adults	Contrast	143	282	1,680
	Noun-Abst. Att.	15	0	73
	Part-Whole	0	0	0
	Superordination	96	102	352
	Participles	93	133	360
	Coordination	271	356	564
	Cause-Effect	136	138	313
Preferred by Children	Verbs	1,037	1,058	136
	Verb-Object	463	453	296
	Noun-Adj.	838	818	420
	Adj.-Noun	1,093	1,075	715
	Contiguity	1,381	1,281	581
	Whole-Part	203	211	158
	Subordination	533	415	333
	Pronouns	30	35	1
	Sound Similarity	86	76	4
	Word Compounding	105	100	109
Equally Frequent in Both Groups	Similarity	360	406	563
	Effect-Cause	44	39	91
	Material	33	26	78
	Non-Specific	748	737	595
	Miscellaneous	15	10	1

The agreement between the children's oral data and their written data is so close that there can be little question but that all our conclusions would hold as well for the one as for the other. It is interesting to note, however, that orally the children give nearly twice as many associations by contrast and also more coordinates and more participles than they do in writing. They seem, further, to give fewer subordinates and fewer associations of the class verb-object. These differences may not be reliable, but they seem sufficiently marked to suggest that somehow they are correlated with the difference in method. Just why children should give opposites orally more frequently than in writing is hard to say. It can hardly be due to any difficulty in writing, since many words which are written infrequently as opposites are written very frequently when they form associations of some type more characteristic of children. This whole matter of the difference between the mental attitudes in writing and speaking should be made the object of a special investigation. The results here obtained suggest one method.

2. Preferred Reactions and Their Frequencies.—In the adjoining table, will be found the three most common reactions for each of the nine stimulus words used orally.

Stimulus	THREE MOST FREQUENT RESPONSES		
	Children		Adults (Oral)
	Written	Oral	
1. Table	358 eat 126 dishes 70 legs	331 eat 115 dishes 56 legs	267 chair 76 wood 75 furniture
2. Dark	421 night 80 black 57 see	410 night 100 black 98 light	427 light 221 night 76 black
3. Music	198 piano 153 sing 79 sweet	236 sing 166 piano 66 notes	180 piano 95 sound 68 song
4. Sickness	116 doctor 105 bed 95 ill	131 bed 116 doctor 94 ill	142 health 115 death 71 illness
5. Man	168 work 82 hat 45 person	153 work 68 hat 57 big	394 woman 99 male 44 boy
6. Deep	257 hole 145 water 87 well	244 hole 162 water 76 well	180 shallow 134 water 93 ocean
7. Soft	138 pillow 57 bed 57 cotton	122 pillow 71 cushion 65 cotton	365 hard 53 pillow 34 easy
8. Eating	178 bread 108 table 54 food	152 bread 113 table 103 food	170 food 166 drinking 46 bread
9. Mountain	390 high 91 hill 61 snow	432 high 104 hill 50 climb	246 high 184 hill 90 valley

The table shows that the dissimilarity between the preferred responses of children and adults is as striking with the children's oral responses as with their written. The average frequency of the children's most frequent response is 246 with the oral data, and 247 with the written data. The total frequency for the three preferred responses for all nine stimulus words is 3,891 with the children's oral results, and 3,776 with the written. With such close agreement between the oral and written data in the preferred responses and their frequencies, it is clear that any conclusions on these points hold equally well for oral and for written data.

3. Individual Responses and Total Number of Response Words.—The total number of response words given to a stimulus word is, on the average, exactly the same for the written and for the oral data, and the number of individual responses is nearly the same. Our conclusion that adults give more individual responses and also a larger total number of response words than children evidently holds for the oral data as well as for the written. The figures are as follows:

Stimulus Word	NUMBER OF INDIVIDUAL RESPONSES			TOTAL NUMBER OF RESPONSE WORDS		
	Children		Adults	Children		Adults
	Written	Oral	(Oral)	Written	Oral	(Oral)
1. Table	49	47	66	104	103	124
2. Dark	50	59	70	104	113	114
3. Music	45	47	92	84	102	172
4. Sickness	54	53	81	123	110	145
5. Man	59	75	111	150	161	169
6. Deep	49	57	70	112	107	119
7. Soft	64	77	79	163	160	155
8. Eating	46	39	82	127	112	168
9. Mountain	52	51	82	103	100	142
Total Number	468	505	733	1,070	1,068	1,308
Av. per Stimulus Word	52	56	81	119	119	145

CHAPTER X

GENERAL SUMMARY

The present work contains children's association frequency tables for each of 100 stimulus words. The tables are composed of the responses of 1,000 Minneapolis school children, from 9 to 12 years of age inclusive, all in the fourth and fifth grades.

The list of stimulus words contains 90 words of the Kent-Rosanoff list. A comparison is made in the case of these 90 words between the children's associations and the associations of adults as shown by the Kent-Rosanoff tables.

The chief points established by this comparison may be stated 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 adults are the following: verbs, verb-object, noun-adjective, adjective-noun, pronouns, sound similarity, contiguity, whole-part and, less definitely, subordination and word-compounding. No reliable difference was found between the groups with respect to the following types: similarity (in meaning), material, effect-cause, non-specific reactions and a miscellaneous group. The results concerning associations of the class, effect-cause, are not regarded as very reliable.

3. With only 39 per cent of the stimulus words, is the most frequent response the same for both children and adults. Only with five words, are the three most frequent responses the same for both children and adults.

4. The frequency of the favorite, or most frequent response,

is about the same for both groups, as is also that of the three most frequent responses. Thus the medium frequency of the favorite response is 251 for children and 252 for adults, while the percentage of all responses included by the three preferred responses is 48 for children and 46 for adults.

5. Children give fewer individual responses than adults. Defining as individual responses, those with a frequency of only one in the frequency tables, it may be said that, on the average, children give only fifty-two individual responses to a stimulus word, whereas adults give eighty.

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

7. The adults give more of the children's response words than the children do of the adults'. Thus, the adults give 8,847 words not given by the children. These words have a combined frequency of 19,742. The children, on the other hand, give only 5,253 words not given by the adults. Their combined frequency is 12,510. Moreover, in the case of any stimulus word, the children's favorite response is more apt to be given frequently by adults than is the adults' favorite response to be given frequently by children. Thus, the favorite adult response is one of the children's three most frequent in 59 per cent of the cases while the children's favorite response is one of the adult's three most frequent in 74 per cent.

The preceding conclusions have general validity only in so far as the list of stimulus words used can be called representative. They are not dependent upon the manner in which the responses are given, since they hold as well for oral responses as for written. They hold likewise for children of each of the four age groups used, since the differences with age found in the children is slight as compared with the differences between children and adults.