

A PHONOGRAM BASED WORD LIST FOR READING AND SPELLING

Based on the Harris-Jacobson

Basic Elementary Reading Vocabularies

by

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ABSTRACT

The purpose of the study was to reanalyze the graded word lists of the Harris-Jacobson Basic Elementary Reading Vocabularies according to phonogram components to provide a phonogram-based word list in graded format. The methodology of the study required a three step process. First, all of the words of the Harris-Jacobson Basic Elementary Reading Vocabularies list were typed into a computer in grade level format. Phonograms from the Durrell-Murphy Phonogram List were entered in the computer. The graded word lists and the phonogram files were then combined by the computer to create graded word lists based on the occurrence of phonogram letter sequence. The second step involved a hand processing of the computer lists to match letter sequences representing the phonograms with consistent phonogram sounds. The final step of the study provided a word count for the occurrence of each phonogram at each grade level and a total word count for the frequency of occurrence of each phonogram across grades. A list of phonograms that produced fewer than five words across grades was prepared. The completed phonogram-based word list is comprised of 5,943 words with 232 phonogram entries. Sixty phonograms or 21 per cent of the Durrell-Murphy Phonogram List were omitted because the frequency of words in which these occurred was fewer than five words.

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Note: The complete Phonogram-Based Word List is available from Dr. J. Catterson, Faculty of Education, University of British Columbia at a cost of \$6.00 Canadian and \$5.00 U.S.

CHAPTER I

THE PROBLEM

Statement of the Problem

The study focusses on the development of a graded phonogram-based word list derived from the occurrence of selected phonograms in the Harris-Jacobson Basic Elementary Reading Vocabularies list.

Background of the Study

Word lists based on frequency of occurrence of words in language have been an important element of basic reading literature for many years. On the assumption that a child should learn to read first those words that will be encountered most frequently in connected prose and later those words encountered less frequently, many word lists are developed from word counts of spoken and printed language. In these lists frequency of occurrence in speaking or writing is the criterion for placing any word at a "high" or "low" level on the list. Examples of such word lists are the Dolch (1941) Sight Vocabulary list, the Carroll et al. (1971) American Heritage Word Frequency Book and the Harris and Jacobson (1972) Basic Elementary Reading Vocabularies list.

Each of the many published word lists available is based on a clear rationale and is scientifically derived by either hand or computer counts from a specified data base. They are used in many ways, both to study and to construct materials in which meaning or semantics is important.

In a contrasting approach, teaching materials directed at what is

commonly called "phonics instruction", that is, materials constructed to teach word recognition through phonological principles, seldom have an identifiable scientific basis. Series of phonics workbooks often provide teachers with the list of words used in the series but do not provide a theoretical base for the selection of those words. It is probably fair to say that the selection rests mainly on the judgement of the authors of the material, who use their knowledge of children at various age levels to determine which words should be placed "high" or "low" on phonological word lists. Although their subjective judgement may be accurate enough to provide usable teaching materials, there is seldom scientific evidence to support their choice of words.

That scientifically derived lists based on phonological principles are needed is increasingly evident. Such well known researchers as Gibson (1962, 1976) a perception specialist, Venezky (1967, 1972) a spelling specialist and Durrell and Wylie (1968) reading specialists have provided evidence that orthographic units beyond the letter that represent the consistent sound-symbol patterns of English are used most by readers and spellers in basic word processing activities.

In 1962 Gibson et al. proposed that the regularities in spelling-to-sound patterns employed by readers are letter clusters. It was suggested:

"...that the proper unit for analyzing the process of reading (and writing) is not the alphabetical letter but the spelling pattern which has an invariant relationship with a phonemic pattern. This may be of great importance for children's learning to read and write." (1962, p.555)

Although Gibson does not specify the types of spelling patterns she considers most important, her 1962 study focussed on the vowel-consonant combination in letter clusters and the significance of this unit to ease of pronunciation.

The need to continue to enhance experiences of observing spelling patterns is acknowledged by Gibson (1976).

Venezky's spelling research (1967) has shown that spelling-to-sound correspondences in English are much more regular than many people have assumed. Moreover, with the exception of patterns that occur infrequently in early reading material, good readers very early develop the ability to respond with appropriate pronunciations to these patterns when they appear in synthetic words. (Venezky et al. 1972)

It is the consistent sound symbol pattern of the phonogram that Durrell and Wylie (1968) stress as the recognition unit of highest utility for beginning readers.

If orthographic clusters in words are so important to reading and spelling activities, it seems evident that some scientifically derived lists would be useful for instruction in both of these subjects.

To produce the required lists it should only be necessary to reanalyze existing semantics-based graded word lists into new word lists in which words of each grade are grouped by designated orthographic components.

Specific Purpose of the Study

The purpose of the study was to reanalyze the graded word lists of the Harris-Jacobson Basic Elementary Reading Vocabularies list according to phonogram components to provide a phonogram-based word list in graded format.

Design of the Study

Materials: The study required the use of the Harris-Jacobson Basic Elementary Reading Vocabularies list (1972) and the Durrell-Murphy Phonogram List (1972), which is based on the frequency of occurrence of phonograms drawn from the Vocabulary of Rhymes in Webster's Seventh New Collegiate Dictionary (1965).

Methods: The methodology of the study required a three-step process.

In the first step, all of the words of the Harris-Jacobson list were typed into a computer word processor in their grade level format. Separate files representing phonograms from the Durrell-Murphy phonogram list were created in the computer. The graded word lists and the phonogram files were then combined by the computer to create graded word lists based on the occurrence of letter sequences called phonograms.

The initial output, then, consisted of all words in the Harris-Jacobson list at each grade level that contained the sequences of letters representing the phonograms entered. These initial printed lists could not constitute the final product since the word processor cannot recognize phonological boundaries. For example, the word "heroine" would be assigned by the computer to the Grade Six list of oin words but would be dropped from the final list because in the word "heroine" the oin cluster is not pronounced as it is pronounced in such words as coin or loin.

The second step of the study, then, involved a hand processing of the

computer lists to match letter sequences representing the phonograms with consistent phonogram sounds. Only those words that contained what was believed to be the most common phonogram sounds were included in the graded phonogram word list.

A final step involved further analysis of the lists.

It should perhaps be added that the completed list is not considered to be a definitive list. It is confined to the phonogram as defined below.

Definition of Terms

Only one definition is required for the study. For the purpose of this study a phonogram as defined in A Dictionary of Reading and Related Terms, the official International Reading Association publication, is "a graphic sequence comprised of a vowel grapheme and an ending consonant grapheme (as the spelling of -ed in bed, red, fed). (Harris and Hodges, 1981). It is assumed that this definition includes the VCV sequence in which the final vowel is "silent" (as the spelling of -ite in bite, kite, site).

Limitations of the Study

The study is seen as limited in two important ways.

1) The study is confined to phonograms as they occur in only one published word list, which has its own specified limitations. Other semantics-based word lists would certainly yield a different set of word lists.

2) The study was confined to letter clusters that occur as phonograms, that is, as pronounceable clusters without semantic significance. It did not differentiate letter clusters spelled in the same way as phonograms but having a semantic function. Clusters like im and in function as phonograms in such words as brimming and finish but have a semantic function in such words as import and inability. The list is confined to the phonogram as a phonological unit in its most common pronunciation.

Significance of the Study

The study is seen as having significance in both its product and its processes.

The value of the expected product in providing a scientific base for "phonics" instruction has already been commented on.

It is expected as well that the processes used may have an influence on the construction and design of future word lists. Existing graded word lists may be reanalyzed in a similar way for orthographic patterns representing other phonemic elements.

Organization of the Thesis

The thesis is organized into four chapters. Chapter one presents the problem. Chapter two reviews the related literature. Chapter three describes the procedures followed to develop the graded phonogram-based word lists. Chapter four summarizes the study and samples of the projected word list appear as an appendix.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

For a time Gestalt psychologists influenced reading instruction when they suggested that word recognition practice should be based on a "whole word" technique on the assumption that subpatterns within words would gradually be internalized by the naive reader and used to recognize "new" words. Generally speaking, however, reading specialists have agreed that most children must be taught how to analyze words into appropriate pronunciation units and then to "blend" these units into whole words. Some writers and commercial programs have advised a letter by letter approach (as in c-a-t); others have advised an initial syllable approach (as in ca-t); and still others suggested a phonogram approach (as in c-at). Although some evidence was available as early as 1928 about the value of the phonogram as a pronunciation unit, only recently has any quantity of evidence become available to support its value. Research now seems to support the phonogram as the unit of greatest utility in word recognition.

Early Evidence and Opinion About the Value
of the Phonogram in Word Analysis Programmes

Early statements about the value of the phonogram in word analysis programmes were based on analyses of their occurrence in beginning reading material. Gates' (1928) study of the relative frequency of letter clusters in words, although not always formally cited by later writers, probably influenced statements made by other authors soon after.

Gates analyzed the frequency of occurrence of a variety of letter

clusters including the CC, CV and VC, VCC forms in 3,000 words from first and grade reading material. His data led him to suggest that attention to many of these units in reading instruction would prove unprofitable. However, some combinations were considered to be of value because of both frequency of occurrence and consistent sound-symbol relationships. Gates suggested that:

Elements like in, ing, er, an, en, ed, ter, and and ight which so commonly correspond to spoken syllables ... are more readily connected with spoken sounds and the associations thereby built up. (1928, p.153)

He listed a total of 27 letter clusters that were very useful because of their frequency of occurrence and invariance of pronunciation. Nineteen, or approximately seventy per cent of these were of the VC and VCC form (i.e. phonogram).

Although McKee (1948) accepted Gates' judgement that phonograms were useful in word analysis programmes, he pointed out that the use of the phonogram might be limited by variance of pronunciation, infrequency of occurrence and the beginning reader's word attack style, which typically showed a concentration on beginning and ending letters. However, he did list specific phonograms to be taught.

Still later, Durrell (1956) agreed, although he stressed that frequency of occurrence of phonograms in instructional reading material should form the basis for determining the elements to be taught. He advised specifically against the practice of teaching phonograms using unfamiliar words, that is, words not in a child's speaking vocabulary.

Dolch, on the other hand, subscribed to the letter by letter phonics

approach and stated:

We can say that phonogram phonics is only a means to an end. The end is better teaching of letter phonics and also learning of habits of word analysis that will be continually and widely useful. (1960, p.294)

Dolch, nevertheless, did prepare a list of phonograms regarded as most common to phonogram lists, while warning of the limitations of phonogram recognition in word analysis practice.

In 1961, the suggestion was made by Russell that phonogram recognition was an integral part of the child's development in reading polysyllable words. He suggested that while analysis of monosyllable words in early reading required skill with individual letters, blends and digraphs, later:

In the high second or low third grades where polysyllable words begin to constitute more of the basic vocabulary, ability to detect known parts, phonograms such as light and ound and the syllables of words becomes more valuable. (p.314)

Obviously, many reading specialists until 1961 were in favour of at least some use of phonograms in reading programmes but very little research evidence was available other than the Gates 1928 study of their frequency of occurrence.

Recent Evidence About Letter Clusters and Their Value in Word Analysis

More recently, carefully designed research has focussed on the unit that the reader uses in word analysis activities in the reading process. Evidence has begun to appear in the perception, spelling and reading literature about the importance of letter clusters with consistent sound-symbol relationships.

Evidence From Perception Research

Working from a perception viewpoint, Gibson has suggested that a reader utilizes not the letter or the whole word when analyzing words but letter clusters comprising spelling-to-sound correspondences.

Gibson, Pick, Osser and Hammond (1962) compared skilled readers' visual discrimination and perceptual matching of monosyllabic pronounceable and unpronounceable pseudowords. College students were presented with brief tachistoscopic exposures to lists of pseudowords constructed by exchanging initial and final consonant clusters and containing either high or low spelling-to-sound correlations (ex. CLATS - TSACL). High spelling-to-sound correlations were shown to be a significant factor in the perception of pseudowords. It is to be noted here that although no actual pronunciation was required of the students the combinations of potentially pronounceable units facilitated the task.

In another experiment, Gibson, Pick and Osser (1963) used the same procedure to present monosyllabic familiar words and pronounceable and unpronounceable trigrams as well as four and five letter pseudowords of both pronounceable and unpronounceable forms (ex. RAN, NAR, NRA : SLAND, NADSL) to examine the stage at which early readers finishing first or third grade begin to respond to spelling patterns as units of pronunciation. First graders read and spelled orally the familiar words best but read the pronounceable trigrams significantly better than the unpronounceable patterns. The longer pseudowords were read poorly with no differentiation shown for pronounceability, probably a reflection of reading ability. The third graders read all of the three letter combinations equally well but pronounceability was shown to be a

factor in the reading of longer pseudowords.

The findings of these early studies led Gibson to conclude:

The fact that a child can begin very early to perceive regularities of correspondence between the printed and spoken patterns and transfer them as units, suggests that the opportunities for discovering the correspondence between patterns might well be enhanced in programmed reading materials. (1965, p.1072)

It is an interesting fact that Gibson later reviewed her thinking about her use of the term "pronounceability" in the perception of units in word recognition and modified her statements to accommodate findings from a study of deaf subjects (Gibson, Shurcliff and Yonas, 1970). The same pseudowords of high or low pronounceability were presented tachistoscopically one at a time on a screen for 100 milliseconds to 34 congenitally deaf and 34 hearing college students. The deaf students made more errors overall in recording the pseudowords but the difference favouring the pronounceable units was just as significant for the deaf as for the hearing students. Gibson et al. concluded that the importance of pronounceability in processing units was seriously weakened by the results of this study and concluded that "the mapping relation to sound is not essential".

It should be stated, however, that there is really no reason entirely to discard the pronounceability notion. The fact that deaf subjects respond to visual patterns should not lead us to suppose that hearing subjects do not use the visual patterns as phonological units. This is implied by Gibson et al. in the statement:

An intelligent deaf reader does master and use the regular spelling patterns of the language in processing graphic material and is facilitated by their presence. The redundancy contributed by invariant mapping to speech sounds may well make it easier for the hearing child to pick up the common spelling patterns and regularities as he learns to read, but clearly it can be done without this. (1970, p.71)

In an additional statement, Gibson (1976) suggested that there are many repetitive patterns in English representing consistent pronunciation units which are generalized by the reader and facilitate the reading process. For example, the spelling patterns shown in fat-fate and bit-bite are suggested to be "easily classified and contrasted".

While the term "phonogram" was not used to designate the spelling-to-sound patterns used as units of recognition in pronounceable words and pseudo-words, it should be noted that the phonogram pattern as defined in this study was the basic element in the pronounceable pseudowords and trigrams used in the Gibson studies.

Evidence from Spelling Research

An examination of the spelling literature shows that research in the field of spelling, aided by the computer, also began in the 1960's to study recurring patterns of print within words and to draw conclusions about their significance in the interaction between orthographic patterns and phonological patterns.

Venezky (1967) contended that English contains two basic sets of patterns. The first, he said, pertains to the allowable letter sequences or

orthographic regularities; the second contains those patterns which relate spelling-to-sound.

After a very thorough analysis of orthographic regularities, including consonant patterns, vowel patterns, vowel + consonant(s) patterns and vowel + consonant + vowel patterns, he was able to describe the extent to which graphemic environment determined vowel pronunciation in both monosyllable and polysyllable words. He pointed out that for polysyllables morphemic structure also influenced pronunciation significantly.

He added, however, a statement about the beginning reader that can be assumed to be a reference to the reading of monosyllables.

Learning to read is to a great extent learning to relate orthographic forms to already existing phonological forms. The more that reading pedagogy can take advantage of this fact, the more successful the teaching of reading will be. (1967, p.105)

He tested this conclusion in a 1972 study. (See below)

Evidence From Reading Education Research

Evidence about the value of the phonogram in word analysis is of two types; (1) Studies of application and (2) Studies of frequency of occurrence of phonograms in common words.

Studies of application. Evidence has been collected about the value of the phonogram in word recognition.

The blending methods employed by first graders to decode unfamiliar one syllable words was investigated by Canham et al. (1966) to determine whether an initial syllable (as in ca-t) or a final phonogram (as in c-at) would serve as a more useful unit in word analysis when transfer was made to unknown words. The children were asked to respond to a total of 139 words representing all of the possible phonetically "pure" combinations of three letter words when paired according to initial syllable or phonogram similarities (i.e. man-map; cap-map). Transfer to the paired word was expected within ten seconds after the examiner prompted with: "If this says 'man', this says ____." or alternately "If this says 'cap', this says ____.". The phonogram approach was found to be significantly more successful in producing correct pronunciation regardless of the phonics method employed by the class-room teacher.

The utility of the phonogram as a recognition unit used by first graders was also supported by Wylie (1967) in an elaboration of the Canham study. A thirty-two item test consisting of sets of five short vowel phonograms in which only the vowel varied was used to determine whether 230 first graders showing normal intelligence and reading progress would respond better to phonogram or separate vowel identification. From a display such as (ed id od ud ad) the child was asked to circle the phonogram pronounced. The next day the same displays were used again and the child was asked to circle the vowel sound pronounced. All children identified the phonogram sound significantly better than the vowel sound. Wylie strongly suggests that the recognition unit is the phonogram rather than the separate vowel.

In discussing phonics problems in beginning reading Durrell (1968)

stated:

Our studies indicate that the phonogram is the unit most children depend upon in recognizing words in beginning reading. The phonogram stabilizes the vowel quite dependably; in one syllable words the consonants which follow the vowel set the vowel value. (p.22)

To determine developmental ability in predicting pronunciation from orthographic patterns, Venezky, Chapman and Calfee (1972) constructed a set of 69 pseudowords for use with good and poor readers from second, fourth and sixth grade. The pseudowords represented long and short vowel patterns, invariant consonant sounds and the variant consonant sounds of the letters c and g. Oral responses to such items as "cabe" and "cipe" were taped and coded as correct, incorrect or plausible. Readers in second and to some extent fourth grade showed high correlations between reading ability and the ability to generalize pronunciation patterns although predicting pronunciation for the variant consonant patterns for c and g remained a problem with good and poor readers at sixth grade level. Venezky et al. noted that position of the letter in the word was important to its predictable pronunciation and suggested that the introduction of real word examples for each pattern in early reading material was important if the child was to notice structure in words. They stressed that spelling to sound correspondences are both regular and predictable and are used by readers to perceive and pronounce words.

A number of studies have attempted to isolate the patterns which represent the specific spelling-to-sound units employed by the reader.

A study by Fletcher (1973) of the transfer of alternate spelling patterns in initial reading using computer assisted instruction was cited by

Gibson and Levin (1976). Apparently words and pronounceable non-words of the CVC, CCVC, CVCC and CCVCC forms were presented to first grade children who had been taught according to two of the following treatment procedures. Treatment B provided practice with both initial and final letter clusters (ca- cla-; -ad, and); treatment I provided practice with initial units only (ca- cla); treatment F provided practice with only final units (-ad, -and); treatment N provided no practice. In the criterion test the treatment words were presented as whole units and the subjects were tested on all treatments. Training on the B and F treatments, both of which contained letter clusters of the phonogram form was superior to the I and N treatments.

An investigation was also conducted by Santa (1977) to determine the unit employed by second, fifth and college level readers. Real word stimuli of the CCVCC form were presented simultaneously with corresponding pictures and same-different reaction time was measured. The words were presented as probes in which spelling-to-sound patterns were either maintained or disrupted (ex. BLAST B LAST BL AST BLAS T). Santa suggests that the task was probably too easy for fifth graders and adults since all probes were processed equally well. However, children at second grade reading level responded significantly faster to both the whole words and the probes containing the final triplet or phonogram. Santa concluded that "the final triplet functioned as a perceptual unit, but the data showed no evidence supporting the final consonant cluster." (p.143)

Studies of phonogram frequency. In light of the evidence supporting the phonogram as a critical unit of perception in word processing activities the question of frequency of occurrence in reading material has been re-

examined. Frequency of occurrence of phonograms in materials used by elementary school readers, it is suggested, is not much greater than previously believed. However, both the informal design and the size of the data base suggest interpreting the findings with caution.

Jones (1970) analyzed Dechant's (1964) list of 149 words common to primary grade basal readers for phonogram components. She concluded that 79.1 per cent of the words in this list could be decoded by phonogram identification. A random sampling of 1,400 words representing every tenth word in the Thorndike Barnhart (1962) Beginning Dictionary was then examined to determine phonogram frequencies in multisyllable words which were expected to be in the reading content of elementary school students. Jones concluded that the majority of words encountered by elementary school readers can be decoded according to phonogram components that demonstrate consistent sound-symbol pattern. A list of the 50 most commonly occurring phonograms from this search was provided by Jones.

Glass (1971) also has suggested that concern about both the numbers of phonograms and their frequency of occurrence in early reading materials must be answered by proponents of the phonogram approach. After examining the new vocabulary presented in basal readers of the first three grades Glass concluded that the number of different phonograms encountered is not onerous for the beginning reader and that frequency of occurrence is great enough to warrant their use in word analysis activities. A list of approximately 100 phonograms and their frequency of occurrence in basal reader for the first three grades was prepared. Half of these 100 phonograms occurred ten times or more and Glass has suggested that:

If these vowel phonograms could be consistently identified in whole words the youngster will have the vowel sounds introduced in over 90 per cent of the new vocabulary. (1971, p.230)

It should be pointed out that these investigations of phonogram frequency in elementary reading material seem to have been conducted informally by hand count.

In more recent investigations related to units of perceptual processing, the phonogram has been shown to be a unit of high recognition value. It would appear to be the letter cluster form most readily perceived by naive readers and one which good readers at a later stage use for predicting pronunciation with unfamiliar word forms. Some evidence has also been provided suggesting that phonograms are basic components of the words encountered in reading material by elementary grade students.

CHAPTER III

MATERIALS AND PROCEDURES

This chapter presents a description of the materials required and the procedures employed in the development of phonogram-based word list derived from the occurrence of phonograms in the Harris-Jacobson Basic Elementary Reading Vocabularies list.

Materials

The study required the use of the Harris-Jacobson Basic Elementary Reading Vocabularies list and the Durrell-Murphy Phonogram List. The American College Standard Reference Dictionary (Barnhard, 1959) was used to check syllabication and pronunciation.

The Harris-Jacobson Basic Elementary Reading Vocabularies list is a computer-generated word list derived from an analysis of 4,500,000 words from fourteen series of elementary school texts. These include six basal reader series and two series from Social Studies, Science, Mathematics and English.

The Core list contains words which appear in at least three of the six basal reader series at each grade level. The Additional list contains words which appear in fewer than half of the basal reader series but in at least four of the fourteen series at each level.

The Core list of 5,167 words and the Additional list of 1,641 words are both graded and comprise the graded General Vocabulary list.

The ungraded Technical Vocabulary list consists of 805 words not included in the Core list but found in both series of a content area and judged to have technical meaning in that area.

A Total Alphabetical list is provided for all 7,613 words included in the Harris-Jacobson Basic Elementary Reading Vocabularies list.

The Durrell-Murphy Phonogram List is based on the frequency of occurrence of phonograms drawn from the Vocabulary of Rhymes in Webster's Seventh New Collegiate Dictionary. A sample list of one syllable words is provided for each commonly occurring phonogram sound. Only one sample is given in parentheses for less frequently occurring alternate pronunciations. For example, separate sample lists are provided for the pronunciations of eat as in beat and threat but the less commonly occurring pronunciation as in great is suggested in parentheses.

Procedures

The procedure involved three major steps. The first step involved the production of a computer list that grouped the words of the Harris-Jacobson Basic Elementary Reading Vocabularies list at each grade level by phonogram cluster. The second step was the processing of the computer product to produce a graded phonogram based word list that would be usable by reading teachers. A third step involved further analyses that provided information about specific characteristics of the word list produced.

Producing the Computer List. All of the words of the General Vocabulary list

of the Harris-Jacobson Basic Elementary Reading Vocabularies list were typed into the computer in graded format. The ungraded Technical Vocabulary list was then typed into the computer. The phonograms from the Durrell-Murphy Phonogram List were next entered alphabetically into the computer to create separate phonogram files. The Harris-Jacobson lists were then computer searched for occurrence of letter clusters representing each of the phonogram spellings. The printout from this search identified the words at each grade level which might contain the phonogram sound, that is, the words that had the specified sequence of letters and therefore might contain the phonogram sound.

Since the computer cannot recognize phonological boundaries, the printout lists grouped together many words that contained the phonogram spelling but not the phonogram sound. For example, the word peace was included in the Grade Five printout list for ace phonograms (with brace, grace and trace) but in the final list was placed with eace words.

Processing the Computer Product. The second step of the study involved a hand processing of the computer lists to match letter sequences representing the phonograms with consistent phonogram sounds. Only those words that contained the most common phonogram sounds were included in the graded phonogram-based word list. It was decided that a phonogram must occur in a minimum of five words across the grades to be included in the final product.

The American College Standard Reference Dictionary was used to check both syllabication of words and phonogram pronunciation within words. The dictionary was used to ensure that the phonogram spelling formed all or part

of a syllable in each of the words included in the final phonogram-based word list. The pronunciation key was then used in a cross-check procedure to ensure that the phonogram formed a pronounceable unit with the required sound.

Approximately twenty words included in the final list did not show the same syllabic division in the syllabication and pronunciation keys but were included in the final list because the phonogram formed the required pronounceable unit in the base word (leader, poster).

The Durrell-Murphy Phonogram List was used as a guide in the processing of alternate pronunciations of phonograms. However, alternate pronunciations of phonograms not noted by Durrell and Murphy for single syllable words but occurring frequently in multisyllable intermediate grade level words of the Harris-Jacobson list were also processed separately.

Further Analyses. Word counts were obtained from the completed lists for the occurrence of each phonogram at each grade level. A total word count was then obtained for the frequency of occurrence of each phonogram within words of the General Vocabulary list of the Harris-Jacobson Basic Elementary Reading Vocabularies list.

Lists derived from the Technical Vocabulary list were included in the final phonogram-based word list but excluded from the total count since the Technical Vocabulary list is ungraded and contains many words that appear in the graded Additional Vocabulary list.

A list of phonograms that produced fewer than five words each was prepared.

The orthographic pattern/pronunciation pattern matching was done on the basis of what is believed to be standard Canadian dialect. Other dialects would produce different groupings.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of the study was to reanalyze the graded word lists of the Harris-Jacobson Basic Elementary Reading Vocabularies list according to phonogram components to provide a phonogram-based word list of the Harris-Jacobson Basic Elementary Reading Vocabularies list in graded format.

Summary of Findings

The completed list is comprised of 5,943 words with 232 phonogram entries. Sample pages are included as Appendix A (every 5th page of an 88 page list).

A count of phonogram frequency across grades appears as Appendix B.

Sixty phonograms (or 21 per cent of the Durrell-Murphy phonograms) were omitted from the final list because the frequency of words in which these were found was fewer than five words. The list of phonograms omitted is provided in Table I.

Table I

Phonograms Occurring in Fewer Than Five Words

afe	(safe)	irl	(girl)	ork	(fork)
alf	(half)	oach	(coach)	ost	(cost)
andle	(candle)	oaf	(loaf)	ough	(rough)
arn	(barn)	oak	(soak)	oul	(foul)
arp	(harp)	oal	(coal)	ould	(could)
aught	(caught)	oan	(moan)	ount	(count)
ause	(cause)	oap	(soap)	ouse	(house)
awk	(hawk)	oar	(roar)	ove	(love)
eap	(heap)	obe	(robe)	oze	(doze)
earn	(learn)	ode	(rode)	ube	(tube)
eft	(left)	odge	(lodge)	uch	(such)
eld	(held)	oft	(soft)	umb	(thumb)
esk	(desk)	oice	(voice)	unny	(funny)
etter	(better)	oin	(coin)	urse	(nurse)
ilk	(milk)	oise	(noise)	urt	(hurt)
imp	(limp)	ood	(food)	ush	(push)
inch	(pinch)	oof	(roof)	usk	(dusk)
ipe	(ripe)	oor	(poor)	uss	(fuss)
ird	(bird)	oot	(foot)	uy	(buy)

A total word count for each phonogram appears as Table II.

A number of phonogram pronunciations not found in the Durrell-Murphy list but found occurring frequently in words of more than one syllable in the Harris-Jacobson list were included in the final list. These were able (suitable), age (village), ant (giant), ard (lizzard), ease (grease), our (detour) and ure (picture).

Table II

Total Frequencies of 232 Phonograms in Words of the H.J.B.E.R.V.

ab	(grab)	25	ant	(grant)	11	each	(teach)	8	elt	(belt)	5
able	(table)	11	ant	(giant)	42	ead	(bead)	9	em	(them)	58
able	(suitable)	28	ap	(trap)	52	ead	(head)	34	en	(then)	247
ace	(face)	23	ape	(tape)	12	eak	(speak)	14	ence	(silence)	29
ack	(back)	39	ar	(car)	79	eal	(real)	15	ench	(bench)	5
act	(fact)	17	arch	(march)	5	eam	(beam)	18	end	(send)	26
ad	(had)	46	ard	(hard)	22	ean	(mean)	11	ent	(went)	130
ade	(made)	18	ard	(lizzard)	25	ear	(hear)	28	ept	(kept)	8
ag	(bag)	36	are	(care)	35	ear	(bear)	7	erry	(merry)	12
age	(cage)	7	arge	(large)	5	ease	(please)	5	esh	(fresh)	5
age	(village)	37	ark	(bark)	17	ease	(grease)	6	ess	(dress)	231
aid	(afraid)	9	arm	(farm)	10	east	(feast)	11	est	(best)	33
ail	(mail)	28	art	(part)	19	eat	(seat)	22	et	(get)	94
ain	(train)	37	ase	(chase)	11	eck	(neck)	17	ib	(rib)	16
aint	(paint)	6	ash	(crash)	17	ed	(sled)	33	ice	(nice)	15
air	(hair)	28	ask	(mask)	5	edge	(ledge)	9	ick	(lick)	47
ait	(wait)	7	ass	(grass)	28	ee	(tree)	35	id	(hid)	48
ake	(cake)	27	ast	(fast)	16	eed	(feed)	21	ide	(ride)	32
ale	(sale)	15	aste	(waste)	6	EEK	(week)	8	idge	(bridge)	5
alk	(talk)	7	at	(that)	66	eel	(feel)	14	ie	(tie)	6
all	(ball)	26	atch	(catch)	12	een	(green)	23	ief	(thief)	9
am	(swam)	58	ate	(gate)	75	eep	(sleep)	19	ield	(field)	9
ame	(came)	17	ath	(bath)	13	eer	(cheer)	17	ife	(life)	9
amp	(stamp)	11	attle	(cattle)	7	eet	(feet)	12	ift	(lift)	8
an	(man)	137	ave	(gave)	12	eeze	(sneeze)	6	ig	(big)	31
ane	(cane)	10	aw	(saw)	27	eg	(leg)	13	igh	(high)	7
and	(hand)	38	awl	(crawl)	5	elf	(shelf)	11	ight	(night)	44
ange	(strange)	8	awn	(lawn)	5	ell	(tell)	38	ign	(sign)	6
ank	(bank)	21	ay	(may)	77	elp	(help)	5	ike	(like)	15

Table II (cont'd)

Total Frequencies of 232 Phonograms in Words of the H.J.B.E.R.V.

ild	(child)	6	oat	(boat)	22	oose	(goose)	6	oy	(boy)	24
ile	(mile)	17	oard	(board)	10	oot	(boot)	7	ub	(rub)	31
ill	(will)	56	ob	(job)	30	op	(stop)	50	uck	(duck)	20
im	(him)	64	ock	(rock)	28	ope	(hope)	13	ud	(bud)	13
ime	(time)	19	od	(nod)	24	ore	(more)	38	udge	(judge)	7
in	(win)	204	oe	(toe)	7	orm	(form)	10	uff	(stuff)	16
ince	(prince)	5	og	(dog)	21	orn	(corn)	15	ug	(bug)	26
ind	(find)	17	oil	(boil)	8	ort	(short)	20	ule	(mule)	5
ine	(fine)	34	oint	(point)	8	ose	(nose)	16	ull	(full)	9
ing	(sing)	92	oke	(joke)	10	oss	(cross)	20	ull	(dull)	7
ink	(pink)	15	old	(cold)	18	ost	(most)	14	um	(drum)	61
int	(print)	13	ole	(hole)	11	ot	(not)	33	umble	(mumble)	10
ip	(trip)	53	oll	(doll)	13	ote	(note)	9	ump	(bump)	11
ire	(fire)	29	oll	(roll)	6	oth	(cloth)	6	un	(fun)	115
irt	(dirt)	6	olt	(colt)	7	ouch	(crouch)	5	unch	(lunch)	6
is	(his)	18	ome	(home)	8	oud	(loud)	6	une	(tune)	6
is	(this)	91	ome	(some)	19	ought	(bought)	7	ung	(hung)	14
ish	(fish)	45	on	(upon)	84	ound	(ground)	23	unk	(bunk)	12
isk	(brisk)	6	on	(scn)	114	our	(your)	13	unt	(hunt)	6
iss	(miss)	6	ond	(pond)	8	our	(hour)	7	up	(cup)	29
ist	(list)	27	one	(done)	7	our	(detour)	16	ur	(fur)	76
it	(sit)	58	one	(bone)	20	out	(shout)	33	ure	(picture)	38
ite	(kite)	21	ong	(long)	14	ove	(stove)	8	ure	(sure)	8
ive	(give)	36	ood	(good)	21	ow	(now)	39	urn	(burn)	7
ive	(five)	16	ook	(look)	22	ow	(know)	71	us	(bus)	47
ix	(six)	10	ool	(pool)	11	owl	(growl)	7	ush	(rush)	10
ize	(prize)	15	oom	(room)	15	own	(down)	19	ust	(just)	13
oad	(road)	9	oon	(soon)	21	own	(grown)	11	ut	(but)	35
oast	(coast)	7	oop	(hoop)	10	ox	(fox)	10	uzz	(buzz)	5

Conclusions

In the process of working with the list some characteristics of phonograms and their pronunciation were noted.

Data-Based Conclusions

The study seemed to verify the priority given to alternate pronunciations of phonograms in the Durrell-Murphy Phonogram List. That is, the alternate pronunciations offered in parentheses in the Durrell-Murphy list usually occurred in fewer than five words of the Harris-Jacobson list. Two exceptions to this occurred with the phonograms is (this) and oll (doll).

Four of the five alternate pronunciations of phonograms not noted by Durrell and Murphy but found occurring frequently in words of more than one syllable contained a schwa sound when the phonogram served as the final syllable(s). These were able (suitable), age (village), ant (giant) and ard (lizzard).

Other Observations

Informal observations were also made about a number of phonograms that produced three or more pronunciations in a small number of words.

The phonogram oe occurred seven times with the pronunciation as in toe, three times with the pronunciation as in shoe and once with the pronunciation as in does.

The phonogram ough occurred in 14 words with five different pronunciations (enough, cough, dough, through and bough).

The majority of ar phonogram words contained the sound of ar as in car; however alternate pronunciations occurred in a small number of words with the pronunciations of ar as in sugar, quarter, marry and war.

Syllabication affected the pronunciation of a number of phonograms that occurred in multisyllable words. The phonograms act, eld, ild, imp, int, ist, und, urn and urt were generally divided between consonants in words of more than one syllable as in activity, elder, bewilder, simplify, superintendent, minister, blunder, furnish and frankfurter.

Suggestions For Further Research

Two suggestions for further research are made.

1. Reanalyze lists for occurrence of prefixes, suffixes and roots at each grade level.
2. Explore in a cross grades study the extent to which children learn earliest those phonograms that occur most frequently.

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APPENDIX A

SAMPLE PAGES FROM A GRADED PHONOGRAM-BASED WORD LIST

(every 5th page of an 88 page list)

AGE - (VILLAGE) cont'd

3rd	COTTAGE COURAGE LANGUAGE MANAGE MESSAGE PACKAGE VILLAGE
4th	BANDAGE CARRIAGE GARBAGE SAUSAGE SAVAGE LUGGAGE POSTAGE SEWAGE SHORTAGE
5th	ADVANTAGE AVERAGE BAGGAGE DISCOURAGE ENCOURAGE IMAGE PASSAGE VOYAGE DISADVANTAGE HERITAGE MILEAGE USAGE
6th	ACREAGE CABBAGE DAMAGE ENCOURAGEMENT MARRIAGE PASSAGEWAY RUMMAGE STORAGE PERCENTAGE
<u>Technical</u>	CARTILAGE VANTAGE

AID - (AFRAID)

PP/P	NIL
1st	NIL
2nd	AFRAID

3rd	LAIID MAID PAID
4th	AID BRAID MAIDEN MERMAID
5th	RAID
6th	NIL
<u>Technical</u>	RAIDER

AIL - (MAIL)

PP/P	NIL
1st	NIL
2nd	MAIL PAIL TAIL SAILBOAT
3rd	JAIL NAIL RAIL SAIL SAILOR TRAIL MAILBOX
4th	FAIL RAILROAD TAILOR WAIL PIGTAIL
5th	AVAILABLE DETAIL HAIL TRAILER RAILWAY
6th	AILMENT BAIL FAILURE F'RAIL PREVAIL QUAIL SNAIL

AN - (MAN) cont'd

6th ANTIQUE
BAN
CANDIDATE
FANTASY
FINANCIAL
MANUSCRIPT
MILKMAN
PECAN
SANITATION
TRANSCRIBE
TRANSISTOR

Technical ANTHEM*
ANTHRACITE
CANDIDATE*
EMANCIPATION
MANOR
OVERRAN
PANHANDLE
PANTHEON
TANNERY
ANTENNA*
CANCER*
ORGANISM*
RANDOM
ANTHOLOGY
ANTONYM
FANTASY*
TRANSITION
TRANSITIONAL
TRANSLATION

AND - (HAND)

PP/P AND

1st HAND

2nd GRANDFATHER
GRANDMOTHER
LAND
SAND
STAND

3rd BAND
HANDFUL
SANDWICH
UNDERSTAND
GRASSLAND
HANDWRITING

4th

COMMAND
DEMAND
GRAND
INLAND
GRANDPARENT
GRANDSON
GREAT-GRANDFATHER
MAINLAND
RAND
SANDPAPER
WOODLAND

5th

BRAND
BRAND-NEW
LANDSCAPE
STRAND
FARMLAND
GLAND
LANDMARK
LANDSLIDE
OVERLAND
WASTELAND

6th

EXPAND
LANDLORD
OUTSTANDING
WONDERLAND

Technical

COASTLAND
COMMANDMENT
FARMLAND*
HOMELAND
NORTHLAND
STANDSTILL
GLAND*
SANDSTONE
HANDWRITING*
HANDWRITTEN

ANE - (CANE)

PP/P NIL

1st AIRPLANE

2nd PANE

3rd NIL

4th CANE
LANE
MANE

ARD - (LIZZARD) cont'd

4th INWARD
MALLARD
WESTWARD

5th AFTERWARD
HOMEWARD
LEOPARD
EASTWARD
NORTHWARD
SKYWARD
SOUTHWARD
VINEYARD

6th DOWNWARD
MUSTARD
OUTWARD
STANDARD
CUSTARD

Technical NIL

ARE - (CARE)

PP/P NIL

1st NIL

2nd CARE
CAREFUL
SCARE
SCARECROW
STARE

3rd BARE
DARE
DECLARE
PREPARE
SHARE
SPARE
SQUARE

4th AWARE
CARELESS
COMPARE
FLARE
GLARE
RARE
BEWARE
HARDWARE
PARE

5th FARE
FAREWELL
MARE
NIGHTMARE
WAREHOUSE
BAREBACK
SILVERWARE

6th BAREFOOT
BLARE
HARE
SHARE
WARE
WELFARE
WARFARE

Technical CHINAWARE
SHARECROPPER

ARGE - (LARGE)

PP/P NIL

1st NIL

2nd LARGE

3rd NIL

4th BARGE
CHARGE

5th ENLARGE

6th DISCHARGE

Technical DISCHARGE*

ARK - (BARK)

PP/P NIL

1st BARK
DARK

2nd MARK
PARK

3rd DARKNESS
SPARK
SPARKLE

ATE - (GATE) cont'd

6th PENETRATE
PLAYMATE
SPECULATE
TRANSLATE
CANDIDATE
CONTAMINATE
DELEGATE
DOMINATE
ELEVATE
IRRITATE
ORIGINATE
PARTICIPATE
TOLERATE

Technical CANDIDATE*
CO-OPERATE*
DEBATE*
DELEGATE*
CARBOHYDRATE
CARBONATE
CIRCULATE
CONTAMINATE*
DOMINATE*
GENERATE*
GERMINATE*
INFLATE
NITRATE*
POLLINATE
SULFATE
PUNCTUATE

ATH - (BATH)

PP/P NIL
1st NIL
2nd NIL
3rd BATH
PATH
BATHROOM
4th NIL
5th ATHLETIC
BATHTUB
MATHEMATIC
MATH
6th ATHLETE
MATHEMATICAL

MATHEMATICIAN

WRATH
HATH
PATHWAY

Technical NIL

ATTLE - (CATTLE)

PP/P NIL
1st NIL
2nd NIL
3rd CATTLE
RATTLESNAKE
4th BATTLE
RATTLE
5th BATTLEGROUND
BATTLESHIP
6th BATTLEFIELD

Technical BATTLEGROUND*
CATTLEMEN

AVE - (GAVE)

PP/P
1st GAVE
2nd BRAVE
SAVE
WAVE
3rd BEHAVE
CAVE
4th PAVE
5th SLAVE
SHAVE
6th GRAVE
PAVEMENT
ENGRAVE

Technical NIL

EAR - (HEAR)

PP/P NIL

1st HEAR

 2nd CLEAR
 DEAR
 EAR
 NEAR
 NEARBY
 TEAR
 YEAR

 3rd APPEAR
 BEARD
 DISAPPEAR
 FEARFUL
 REAR
 SPEAR
 EARDRUM

 4th FEAR
 SMEAR
 FEARLESS
 REAPPEAR

 5th DREARY
 GEAR
 SHEAR
 WEARY
 YEARLING

 6th APPEARANCE
 WEARINESS
 EARPHONE
 SPEARHEAD

Technical CLEARING
 EARDRUM
EAR - (BEAR)

PP NIL

1st BEAR

 2nd TEAR
 WEAR

3rd NIL

4th PEAR

 5th BEARING
 SWEAR
 UNBEARABLE

6th NIL

EASE - (PLEASE)

PP/P NIL

1st PLEASE

2nd NIL

3rd TEASE

 4th DISEASE
 EASE
 DISPLEASE

5th NIL

6th NIL

EASE - (GREASE)

PP/P NIL

1st NIL

2nd NIL

3rd NIL

4th INCREASE

 5th CEASE
 CREASE
 GREASE
 RELEASE

6th DECREASE

EAST - (FEAST)

PP/P NIL

1st NIL

2nd NIL

EEZE - (SNEEZE) cont'd

3rd SNEEZE

4th BREEZE
FREEZE
SQUEEZE
FREEZER

5th WHEEZE

6th NIL

Technical NIL

EG - (LEG)

PP/P NIL

1st LEG

2nd EGG

3rd BEG

4th REGULAR

5th BEGGAR
KEG
PEG
REGULATION
NEGATIVE
NUTMEG
REGULATE
SEGMENT

6th IRREGULAR

Technical LEGUME
SEGMENT*

ELF - (SHELF)

PP/P NIL

1st NIL

2nd HERSELF
HIMSELF
MYSELF
YOURSELF

3rd SHELF

4th ITSELF
SELFISH
ELF
UNSELFISH

5th SELF

6th TWELFTH

Technical NIL

ELL - (TELL)

PP/P YELLOW

1st HELLO
TELL2nd BELL
CELLAR
FELL
SELL
SMELL
WELL
YELL3rd DOORBELL
FELLOW
SHELL4th BELLOW
JELLY
PROPELLER
SPELL
SWELL
UMBRELLA
DWELLER
SHELLFISH
SPELLER
STORYTELLER
STORYTELLING5th FAREWELL
INTELLIGENCE
INTELLIGENT
BELLY
CELLOPHANE
SELLER6th CELL
DWELLING
MELLOW
DWELL
GAZELLE

ENCE - (SILENCE) cont'd

5th INDEPENDENCE
INFLUENCE
REFERENCE
CORRESPONDENCE
INTERFERENCE
OBEDIENCE

6th ABSENCE
CONFERENCE
CONFIDENCE
CONSCIENCE
CONSEQUENCE
CONVENIENCE
EVIDENCE
EXISTENCE
PRESENCE
VIOLENCE
CIRCUMFERENCE
HENCE
INNOCENCE
PROVIDENCE
SEQUENCE

3rd BEND
PRETEND
SPEND

4th ATTEND
BLEND
DEFEND
DEPEND
INTEND
MEND
TEND
WEEKEND
ENDLESS

5th EXTEND
INDEPENDENCE
LEND

6th ASCEND
DEPENDANT
DESCEND
RECOMMEND
RENDER
SURRENDER
SUSPEND

ENCH - (BENCH)

PP/P NIL
1st NIL
2nd NIL
3rd BENCH
4th NIL
5th NIL
6th CLENCH
DRENCH
TRENCH
WRENCH

Technical AMENDMENT
PITCHBLEND
ADDEND
DIVIDEND
ENDPOINT

ENT - (WENT)

PP/P WENT
1st NIL
2nd APARTMENT
DIFFERENT
SENT
TENT

3rd ACCIDENT
BENT
CENT
CONTENT
CURRENT
EXCITEMENT
EXPERIMENT
IMPATIENT
INVENT
MOMENT
PARENT

END - (SEND)

PP/P NIL
1st FRIEND
2nd END
FRIENDLY
SEND

ET - (GET)*

ET - (POCKET) cont'd

Technical

BALL-AND-SOCKET

DIET

HORNET

INLET

INTERPRET

LETTUCE

LOCKET

MAGNET

PUPPET

SCARLET

TRUMPET

BANQUET

BOOKLET

CABINET

COMET

OUTLET

SKILLET

SPAGHETTI*

WALLET

COMET

DROPLET

ELECTROMAGNET

GENETIC

RETINA*

RICKETS

SKELETAL

SKYROCKET

ULTRAVIOLET

SUBSET*

ALPHABETIC*

6th

FIDGET

GANNET

MIDGET

MUSKET

NUGGET

PROPHET

REGRET*

RIVET

SILHOUETTE

SOCKET

SONNET

SUPERMARKET

TABLET

TARGET

VETERAN*

VIOLET

BRACKET

DUET*

GADGET

HATCHET

METRIC*

NETWORK*

PELLET

PLUMMET

IGHT - (NIGHT)

PP/P NIL

1st FIGHT
LIGHT
NIGHT
RIGHT

2nd BRIGHT
FRIGHTEN
MIGHT
SIGHT
TONIGHT

3rd DELIGHT
FRIGHT
LIGHTNING
TIGHT
LAMPLIGHT

4th DAYLIGHT
FLASHLIGHT
FLIGHT
LIGHTHOUSE
NIGHTFALL
SLIGHT
SUNLIGHT
EYESIGHT
FIGHTER
MOONLIGHT
UPRIGHT

5th KNIGHT
MIDNIGHT
NIGHTMARE
PLIGHT
TWILIGHT
BRIGHTNESS
DELIGHTFUL
LIGHTNESS
STARLIGHT

6th BRIGHTEN
CANDLELIGHT
HEADLIGHT
OVERNIGHT
RIGHTFUL
BLIGHT
ENLIGHTEN
FRIGHTFUL
LIGHTEN
NIGHTINGALE

Technical

BULLFIGHT
COPYRIGHT

IGN - (SIGN)

PP/P NIL

1st NIL

2nd SIGN

3rd NIL

4th DESIGN

5th ASSIGN
ASSIGNMENT
DESIGNER
RESIGN

6th NIL

IKE - (LIKE)

PP/P BIKE
LIKE

1st NIL

2nd NIL

3rd STRIKE
DISLIKE

4th ALIKE
UNLIKE
DIKE
LIKENESS

5th HIKE
THREADLIKE
TURNPIKE

6th PIKE
SPIKE
LIKEWISE
WARLIKE

Technical DIKE
DISLIKE
HAIRLIKE

IN - (WIN) cont'd

6th INVESTIGATE
PINTO
TARPAULIN
TINDERBOX
CLINIC
CONTINUOUS
INDICATOR
INVISIBLE
INEXPENSIVE
INFLUENZA
INHERIT
INHERITANCE
INJECT
INNOCENCE
INSCRIPTION
INTRIGUE
JAVELIN
NIGHTINGALE
PENICILLIN
PINPOINT
PINWHEEL
VIOLINIST
WINTRY

Technical

BASIN
BITUMINOUS
DOMINION
INAUGURATION
INCENSE
INCOMING
RESIN
VIRGIN
CHINOOK
CHLORINATE
GERMINATE
HEMOGLOBIN
INDICATION
INERTIA
INFECTIOUS
INFLATE
INFRARED
INHALE
INSTALLATION
INSULATION
INSULATOR
INTAKE
INTENSITY
INVERT
INVERTEBRATE
POLLINATE
POLLINATION
RETINA

VACCINATION
CARDINAL
INEQUALITY
INDEFINITE
INTERJECTION
INTERROGATIVE
INTRODUCTORY

INCE - (PRINCE)

PP/P NIL
1st NIL
2nd NIL
3rd PRINCE
4th CONVINCE
5th PROVINCE
6th MINCE
WINCE

IND - (FIND)

PP/P NIL
1st BEHIND
FIND
2nd MIND
WIND
3rd HIND
FINDER
4th BLIND
GRIND
REMIND
BIND
MANKIND
UNKIND
5th KINDNESS
BLINDFOLD
BLINDNESS
6th REMINDER
BINDING

IS - (THIS) cont'd

5th SATISFACTION
TENNIS
ADVERTISEMENT
CHEMISTRY
DISADVANTAGE
DISAGREEABLE
DISCOVERER
DISOBEY
DISPATCH
DISSATISFIED
DISTINCTION
EMPHASIS
HISTORIC
MISJUDGE
SATISFACTORY

6th BLISTER
BRISTLE
CRISIS
DISAGREE
DISBELIEF
DISCARD
DISCONTENT
DISCUSSION
DISDAIN
DISPOSE
DISTINCT
DISTRACT
DISTRIBUTE
DISTRICT
DISTURBANCE
EXISTENCE
MISFORTUNE
MISPLACE
PISTOL
REGISTER
DISCHARGE
DISCUSS
DISPUTE
HISTORIAN
MISCHIEVOUS
MISSPELL
TRANSISTOR
TUBERCULOSIS

Technical LEGISLATIVE
CHRYSLIS
DISCONNECT
PHOTOSYNTHESIS
PISTIL
PISTON

RESISTANCE
TUBERCULOSIS
UNDISCOVERED
DISCOUNT
DISTRIBUTIVE

ISH - (FISH)

PP/P	FISH
1st	WISH
2nd	DISH FINISH SWISH RADISH
3rd	FISHERMEN FOOLISH PUNISH
4th	ASTONISH ASTONISHMENT FOOLISHNESS GOLDFISH POLISH PUBLISH SELFISH VANISH FISHER FISHHOOK REDDISH SHELLFISH STARFISH UNFINISHED UNSELFISH
5th	DISTINGUISH ESTABLISH FURNISH DIMINISH FURNISHING GREENISH PERISH PUBLISHER PUNISHMENT RUBBISH
6th	ACCOMPLISH ACCOMPLISHMENT BISHOP CATFISH

OAD - (ROAD)

PP/P NIL

1st ROAD

2nd NIL

3rd LOAD
TOAD

4th RAILROAD
UNLOAD
BOATLOAD

5th CROSSROAD

6th GOAD
ROADSIDE

Technical SHIPLOAD

OAST - (COAST)

PP/P NIL

1st NIL

2nd NIL

3rd ROAST

4th BOAST
COAST
COASTAL
SEACOAST
TOASTER

5th TOAST

6th NIL

Technical COASTLAND

OAT - (BOAT)

PP/P BOAT
GOAT

1st COAT

2nd FLOAT
SAILBOAT

3rd

OATMEAL

4th

THROAT
BOATHOUSE
BOATLOAD
FERRYBOAT
GOATSKIN
OVERCOAT
RAINCOAT
TUGBOAT

5th

OAT
COATING
STEAMBOAT

6th

GLOAT
PETTICOAT
REDCOAT
ROWBOAT
AFLOAT

Technical

FLATBOAT
KEELBOAT
MOAT

OARD - (BOARD)

PP/P NIL

1st NIL

2nd NIL

3rd ABOARD
BOARD
CHALKBOARD

4th CARDBOARD
CUPBOARD
BLACKBOARD

5th STARBOARD
BILLBOARD
OVERBOARD

6th KEYBOARD

OB - (JOB)

PP/P NIL

1st NIL

OME - (SOME) cont'd

6th AWESOME
 INCOME
 OVERCOME
 SOMEWHAT

ON - (UPON)

PP/P ON

1st NIL

2nd NIL

3rd BONNET
 CONTENT
 CONTEST
 CONTINUE
 HONOR
 UPON

4th ASTONISH
 ASTONISHMENT
 CONCERT
 CONCRETE
 CONSTANT
 CONVERSATION
 DON
 FRONTIER
 HONEST
 HONORABLE
 MONARCH
 NONSENSE
 ONTO
 CONSONANT
 CONSTELLATION
 CONTINENTAL
 DISHONEST
 MONASTERY

5th CONCENTRATE
 CONCORD
 CONFIDENT
 CONQUER
 CONSTITUTION
 CONSTRUCT
 CONTACT
 CONTINENT
 CONTRIBUTION
 MONSTER
 MONUMENT
 YONDER
 ANACONDA

ASTRONOMY
 CON
 CONCEPT
 CONFEDERATE
 CONGRESSMEN
 CONQUEROR
 CONQUEST
 CONSUL
 CONVERT
 CONVEYER
 ECONOMY
 ELECTRONIC
 NEON
 PENTAGON

6th BATON
 BRONCO
 BRONZE
 CONDUCT
 CONFERENCE
 CONFIDENCE
 CONSCIENCE
 CONSEQUENCE
 CONSERVATION
 CONSOLE
 CONTEXT
 CONTRACT
 CONTRARY
 CONTRAST
 HORIZONTAL
 MONITOR
 MONSTROUS
 NYLON
 PONDER
 PYTHON
 RESPONSE
 RESPONSIBLE
 SONNET
 SPONSOR
 CONCENTRATION
 CONFLICT
 CONSCIOUS
 ELECTRON
 GONDOLA
 PHENOMENON
 RAYON
 SILICON

Technical CONSTITUTIONAL
 CONVICT
 MONARCHY
 MONSOON
 TRANSCONTINENTAL
 ASTRONOMY
 CONVEX

OOP - (HOOP)

2nd GOOSE
3rd LOOSE
4th NIL
5th CABOOSE
MOOSE
NOOSE
6th PAPOOSE

4th

COPY
MOP
OPERATOR
OPPOSITE
PROP
TOPICAL
MICROSCOPIC
MOUNTAINTOP
OPERATE
RAINDROP
ROOFTOP
SHOPKEEPER
TOPSOIL
TREETOP

OOT - (BOOT)

PP/P NIL
1st NIL
2nd BOOT
3rd ROOT
SHOOT
TOOT
4th HOOT
5th SCOOTER
6th UPROOT

5th

OPERATION
POPULAR
TOPIC
TOPPLE
ATOP
OPERA
TROPIC

6th

CHOPPY
CO-OPERATE
CO-OPERATION
HILLTOP
OPPORTUNITY
PLOP
POPLAR
POPULATION
CHOPSTICKS
SHOPPER
SHORTSTOP
TABLETOP

OP - (STOP)

PP/P STOP
1st DROP
HOP
STOPPED
2nd POP
SHOP
TOP
POPCORN
3rd CHOP
CLOP
COPPER
CROP
FLOP
HELICOPTER
POPPY
GRASSHOPPER
LOLLIPOP

Technical

COPRA
HOPPER
OPPOSITION
SHARECROPPER
DROPLET
DROPPER
STOPPER

OPE - (HOPE)

PP/P NIL

1st NIL

2nd HOPE
ROPE

3rd TELESCOPE

OUND - (GROUND) cont'd

Technical ROUNDWORMS

OUR - (YOUR)

PP/P YOUR

1st FOUR

2nd FOURTH
YOURSELF

3rd POUR

4th MOURN
COURTYARD
DOWNPOUR5th FOURTEEN
FOURTEENTH6th MOURNFUL
SOURCE
RESOURCEFUL

OUR - (HOUR)

PP/P NIL

1st OUR

2nd NIL

3rd FLOUR
HOUR

4th OURSELVES

5th SOURDOUGH

6th DEVOUR
SOUR

OUR - (DETOUR)

PP/P NIL

1st NIL

2nd NIL

3rd COURAGE

4th JOURNEY

5th DISCOURAGE
ENCOURAGE
TOURIST
COURTESY
DETOUR6th COURAGEOUS
ENCOURAGEMENT
FLOURISH
JOURNAL
NOURISH
TOUR
TOURNAMENT
COURTEOUS
NOURISHMENTTechnical JOURNEYMAN
TOURISM

OUT - (SHOUT)

PP/P ABOUT
OUT

1st NIL

2nd OUTSIDE
SHOUT
WITHOUT3rd OUTDOOR
OUTLINE4th OUTER
ROUTE
SCOUT
TROUT5th LOOKOUT
OUTFIT
OUTLAW
OUTSMART
OUTWIT
SNOOT
SPROUT
OUTCOME
OUTLET
OUTNUMBER
OUTSKIRTS
OUTSTRETCH

UDGE - (JUDGE) cont'd

2nd NIL

3rd JUDGE

4th NUDGE
TRUDGE

5th BUDGE
MISJUDGE

6th SMUDGE
GRUDGE

UFF - (STUFF)

PP/P NIL

1st NIL

2nd NIL

3rd BUFFALO
PUFF
STUFF

4th FLUFF
GRUFF
SHUFFLE
SUFFER
MUFFIN
MUFFLER
SUFFIX

5th BLUFF
RUFFLE
SCUFFLE

6th MUFFLE
SCUFF
SUFFICIENT

Technical FOODSTUFFS

UG - (BUG)

PP/P NIL

1st NIL

2nd UGLY

3rd

BUG
DUG
HUG
RUG
STRUGGLE
TUG
DRUG

4th

BUGGY
DRUGSTORE
JUG
JUGGLE
MUG
SHRUG
SNUG
LUGGAGE
TUGBOAT

5th

CHUG
PLUG
RUGGED
DRUGGIST
JUGGLER
SLUG

6th

NUGGET
SNUGGLE
UGH

Technical DRUG
MUGGY

ULE - (MULE)

PP/P NIL

1st NIL

2nd NIL

3rd MULE
RULE

4th NIL

5th SCHEDULE

6th RIDICULE
MOLECULE

Technical OVULE

UP - (CUP)

PP/P UP

1st NIL

2nd CUP
CUPCAKE
PUP
PUPPY
SUPPER

3rd SUPPOSE
UPON
UPSIDE
UPSTAIRS
UPWARD
CUPFUL
SYRUP

4th SUPPLY
SUPPER
UPPER
UPROAR
UPSET
UPRIGHT
UPSTREAM

5th GUPPY
PUPPET
ROUNDUP
STIRRUP
BUTTERCUP

6th CATSUP
PICKUP
GROWNUP
UPROOT

Technical UPLAND
UPRIVER

UR - (FUR)

PP/P NIL

1st HURRY
SURPRISE
TURTLE

2nd NIL

3rd

BURST
CHURCH
CURL
CURRENT
CURTAIN
FUR
HURRAH
HURRIED
PURPLE
SURFACE
SURROUND
TURKEY
TURNIP

4th

BURROW
BURY
FURNACE
FURNITURE
FURRY
FURTHER
GURGLE
HAMBURGER
MURMUR
PURPOSE
STURDY
URGE
HURRICANE
NURSERY
PLURAL

5th

BLUR
BURDEN
BURRO
FURNISH
HURTLE
OCCUR
PURCHASE
PURR
PURCHASE
PURR
PURSUE
SPUR
SURVIVE
BURGESS
EXCURSION
FRANKFURTER
FURNISHING
FURROW
MURDER
MURKY
RURAL
SULFUR

APPENDIX B

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	GRADE LEVEL					
			1st	2nd	3rd	4th	5th	6th
ab	(grab)	-	-	-	-	5	9	11
able	(table)	-	-	2	-	2	3	4
able	(suitable)	-	-	-	-	7	9	12
ace	(face)	-	-	3	1	7	6	6
ack	(back)	-	2	2	4	12	15	4
act	(fact)	-	-	1	2	-	9	5
ad	(had)	1	1	7	7	10	14	6
ade	(made)	-	1	2	2	7	3	3
ag	(bag)	-	2	3	4	4	13	10
age	(cage)	-	1	-	2	1	-	3
age	(village)	-	-	-	7	9	12	9
aid	(afraid)	-	-	1	3	4	1	-
ail	(mail)	-	-	4	7	5	5	7
ain	(train)	1	2	1	6	12	6	9
aint	(paint)	1	-	-	-	2	1	2
air	(hair)	-	2	6	5	9	3	3
ait	(wait)	-	-	1	-	3	1	2
ake	(cake)	3	-	3	5	7	4	5
ale	(sale)	-	-	-	4	4	5	2
alk	(talk)	-	2	1	1	2	1	-
all	(ball)	3	1	4	7	2	5	4
am	(swam)	-	-	3	8	11	12	24
ame	(came)	-	3	1	3	6	1	3
amp	(stamp)	-	-	1	4	1	4	1

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL		4th	5th	6th
				2nd	3rd			
an	(man)	3	7	9	9	31	41	37
and	(hand)	1	1	5	6	11	10	4
ane	(cane)	-	1	1	-	6	2	-
ange	(strange)	-	-	1	1	4	2	-
ank	(bank)	-	-	2	1	6	7	5
ant	(grant)	-	-	-	1	6	3	1
ant	(giant)	-	-	2	3	9	14	14
ap	(trap)	-	1	5	12	9	12	10
ape	(tape)	-	-	2	2	1	6	1
ar	(car)	2	2	4	10	23	20	18
arch	(march)	-	-	-	1	2	-	2
ard	(hard)	-	1	3	3	6	5	4
ard	(lizzard)	-	-	-	4	8	8	5
are	(care)	-	-	5	7	9	7	7
arge	(large)	-	-	1	-	2	1	1
ark	(bark)	-	2	2	3	5	3	2
arm	(farm)	-	1	2	3	2	2	-
art	(part)	-	-	4	2	5	5	3
ase	(chase)	-	-	1	2	6	-	2
ash	(crash)	-	-	1	3	6	5	2
ask	(mask)	1	-	-	-	1	2	1
ass	(grass)	-	1	5	4	3	4	11
ast	(fast)	2	2	1	3	4	3	
aste	(waste)	-	-	-	2	-	1	3

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL		4th	5th	6th
				2nd	3rd			
at	(that)	2	4	5	6	13	19	17
atch	(catch)	-	1	-	4	2	2	3
ate	(gate)	-	-	3	6	12	23	31
ath	(bath)	-	-	-	3	-	4	6
attle	(cattle)	-	-	-	2	2	2	1
ave	(gave)	-	1	3	2	1	2	3
aw	(saw)	1	-	2	4	9	8	3
awl	(crawl)	-	-	1	-	1	1	2
awn	(lawn)	-	-	-	-	4	1	-
ay	(may)	5	4	7	11	16	19	15
each	(teach)	-	-	4	1	-	3	-
ead	(bead)	-	-	-	3	2	4	-
ead	(head)	-	3	2	10	5	7	7
eak	(speak)	-	-	-	3	6	3	2
eal	(real)	-	-	1	5	3	4	2
eam	(beam)	-	-	3	5	3	4	3
ean	(mean)	-	-	2	3	2	3	1
ear	(hear)	-	1	7	7	4	5	4
ear	(bear)	-	1	2	-	1	3	-
ease	(please)	-	1	-	1	3	-	-
ease	(grease)	-	-	-	-	1	4	1
east	(feast)	-	-	-	5	2	4	-
eat	(seat)	1	-	1	6	6	7	1

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL		4th	5th	6th
				2nd	3rd			
eck	(neck)	-	-	1	1	8	5	2
ed	(sled)	1	1	3	6	8	6	8
edge	(ledge)	-	-	-	1	1	4	3
ee	(tree)	2	2	1	6	9	8	7
eed	(feed)	-	-	3	4	6	5	3
EEK	(week)	-	-	1	2	4	1	-
eel	(feel)	-	-	2	1	4	4	3
een	(green)	1	1	2	4	4	7	4
eep	(sleep)	-	1	5	4	5	3	1
eer	(cheer)	-	-	2	5	1	5	4
eet	(feet)	-	2	3	2	2	3	-
eeze	(sneeze)	-	-	-	1	4	1	-
eg	(leg)	-	1	1	1	1	8	1
elf	(shelf)	-	-	4	1	4	1	1
ell	(tell)	1	2	7	3	11	6	0
elp	(help)	1	-	-	1	2	1	-
elt	(belt)	-	-	-	2	1	-	2
em	(them)	-	1	3	4	7	17	26
en	(then)	1	6	16	37	58	65	64
ence	(silence)	-	-	-	3	5	6	15
ench	(bench)	-	-	-	1	-	-	4
end	(send)	-	1	3	3	9	3	7
ent	(went)	1	-	4	17	28	45	35
ept	(kept)	-	-	1	4	1	2	-

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		GRADE LEVEL						
		PP/P	1st	2nd	3rd	4th	5th	6th
erry	(merry)	-	-	4	2	4	2	-
esh	(fresh)	-	-	-	1	-	3	1
es	(dress)	-	2	1	14	29	29	26
est	(best)	-	-	4	7	10	7	5
et	(get)	3	5	4	14	23	21	24
ib	(rib)	-	-	-	2	3	2	9
ice	(nice)	-	1	2	2	4	1	5
ick	(lick)	-	-	6	8	13	14	6
id	(hid)	1	1	2	4	11	16	13
ide	(ride)	1	-	7	4	13	3	4
idge	(bridge)	-	-	1	-	1	2	1
ie	(tie)	-	-	2	3	1	-	-
ief	(thief)	-	-	-	3	1	3	2
ield	(field)	-	-	2	1	2	1	3
ife	(life)	-	-	2	2	2	1	2
ift	(lift)	-	-	-	4	1	1	2
ig	(big)	1	1	1	4	7	5	12
igh	(high)	-	-	1	1	2	1	2
ight	(night)	-	4	5	5	11	9	10
ign	(sign)	-	-	1	-	1	4	-
ike	(like)	2	-	-	2	4	3	4
ild	(child)	-	-	-	2	2	2	-
ile	(mile)	-	-	4	-	4	5	4

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL		4th	5th	6th
				2nd	3rd			
ill	(will)	1	2	5	10	14	9	15
im	(him)	1	-	2	7	14	18	22
ime	(time)	-	1	1	4	5	5	3
in	(win)	2	1	11	27	38	68	57
ince	(prince)	-	-	-	1	1	1	2
ind	(find)	-	2	2	2	6	3	2
ine	(fine)	-	-	3	7	9	8	7
ing	(sing)	1	5	10	16	24	20	16
ink	(pink)	-	1	1	2	3	4	4
int	(print)	-	-	-	3	1	4	5
ip	(trip)	-	-	2	10	17	10	14
ire	(fire)	-	2	1	2	8	7	9
irt	(dirt)	-	-	2	1	1	1	1
is	(his)	2	-	2	2	7	2	3
is	(this)	1	1	2	9	20	30	28
ish	(fish)	1	1	4	3	15	10	11
isk	(brisk)	-	-	-	1	1	3	1
iss	(miss)	-	1	-	1	1	2	1
ist	(list)	-	-	-	3	4	12	8
it	(sit)	2	2	5	4	2	24	19
ite	(kite)	-	1	3	4	5	4	4
ive	(give)	-	2	1	-	5	10	18
ive	(five)	-	1	1	4	2	6	2
ix	(six)	-	-	2	3	4	1	-

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL				
				2nd	3rd	4th	5th	6th
ize	(prize)	-	1	-	3	1	5	5
oad	(road)	-	1	-	2	3	1	2
oast	(coast)	-	-	-	1	5	1	-
oat	(boat)	2	1	2	1	8	3	5
oard	(board)	-	-	-	3	3	3	1
ob	(job)	-	-	2	5	6	6	11
ock	(rock)	-	2	4	4	5	7	6
od	(nod)	-	-	-	6	6	5	7
oe	(toe)	-	-	-	2	2	2	1
og	(dog)	1	-	-	4	6	7	3
oil	(boil)	-	-	1	1	4	1	1
oint	(point)	-	-	1	1	-	2	4
oke	(joke)	-	-	4	2	3	-	1
old	(cold)	-	4	1	4	7	2	-
ole	(hole)	-	-	1	2	3	4	1
oll	(doll)	-	-	3	1	5	2	2
oll	(roll)	-	-	2	-	-	3	1
olt	(colt)	-	-	-	2	-	2	3
ome	(home)	1	-	-	-	2	3	2
ome	(some)	3	-	2	4	4	2	4
on	(upon)	1	-	-	6	18	27	32
on	(son)	-	-	11	8	30	26	39
ond	(pond)	-	-	1	1	1	4	1

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL				
				2nd	3rd	4th	5th	6th
one	(done)	1	1	5	-	-	-	-
one	(bone)	-	-	4	1	3	4	8
ong	(long)	-	2	4	-	3	1	4
ood	(good)	1	1	2	3	7	6	1
ook	(look)	2	1	4	3	6	5	1
ool	(pool)	-	1	1	6	3	-	-
oom	(room)	-	-	2	3	4	4	2
oon	(soon)	1	1	1	5	7	2	4
oop	(hoop)	-	-	-	-	6	3	1
oose	(goose)	-	-	1	1	-	3	1
oot	(boot)	-	-	1	3	1	1	1
op	(stop)	1	3	4	9	14	7	12
ope	(hope)	-	-	2	1	6	2	2
ore	(more)	-	3	-	4	10	10	11
orm	(form)	-	-	-	3	3	3	1
orn	(corn)	-	-	4	3	3	2	3
ort	(short)	-	-	1	2	7	3	7
ose	(nose)	-	1	2	3	3	2	5
oss	(cross)	-	-	2	5	6	2	5
ost	(most)	-	-	4	-	4	3	3
ot	(not)	1	1	9	3	9	6	4
ote	(note)	-	-	2	1	-	3	3
oth	(cloth)	-	-	-	1	1	-	4
ouch	(crouch)	-	-	-	-	1	2	2

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		PP/P	1st	GRADE LEVEL		4th	5th	6th
				2nd	3rd			
oud	(loud)	-	-	2	1	1	1	1
ought	(bought)	-	-	3	1	2	-	1
ound	(ground	1	2	3	3	5	5	4
our	(your)	1	1	2	1	3	2	3
our	(hour)	-	1	-	2	1	1	2
our	(detour)	-	-	-	1	1	5	9
out	(shout)	2	-	3	2	4	12	10
ove	(stove)	-	-	-	2	3	3	-
ow	(now)	1	2	3	7	9	10	7
ow	(know)	3	3	11	12	18	12	12
owl	(growl)	-	-	1	2	2	1	1
own	(down)	-	2	1	5	3	2	6
own	(grown)	-	1	-	3	4	1	2
ox	(fox)	-	2	-	1	5	1	1
oy	(boy)	1	2	2	2	4	7	6
ub	(rub)	-	-	1	4	5	12	9
uck	(duck)	-	2	1	4	5	3	5
ud	(bud)	-	-	1	4	3	2	3
udge	(judge)	-	-	-	1	2	2	2
uff	(stuff)	-	-	-	3	7	3	3
ug	(bug)	-	-	1	7	9	6	3
ule	(mule)	-	-	-	2	-	1	2
ull	(full)	-	-	2	1	1	4	1

PHONOGRAM FREQUENCIES ACROSS GRADES IN WORDS OF THE H.J.B.E.R.V.

PHONOGRAM		GRADE LEVEL						
		PP/P	1st	2nd	3rd	4th	5th	6th
ull	(dull)	-	-	-	-	1	4	2
um	(drum)	-	-	3	7	16	17	18
umble	(mumble)	-	-	-	-	5	3	2
ump	(bump)	-	-	1	4	4	2	-
un	(fun)	3	2	4	15	35	24	32
unch	(lunch)	-	-	1	-	3	2	-
une	(tune)	-	-	-	3	-	1	2
ung	(hung)	-	-	2	2	2	5	3
unk	(bunk)	-	-	1	2	2	4	3
unt	(hunt)	-	-	1	-	2	1	3
up	(cup)	1	-	5	7	7	5	4
ur	(fur)	-	3	-	13	15	24	21
ure	(picture)	-	1	1	4	11	11	10
ure	(sure)	-	-	1	1	1	3	2
urn	(burn)	-	-	3	1	1	1	1
us	(bus)	1	1	1	2	9	11	22
ush	(rush)	-	-	-	2	3	3	2
ust	(just)	-	2	-	1	5	4	1
ut	(but)	-	2	3	5	9	10	6
uzz	(buzz)	-	-	-	2	1	1	1