

Of the 121 generalizations thus found, Clymer selected forty-five that were stated with sufficient clarity to permit assessment of its applicability to whole words (though he adds that "the selection of these [forty-five generalizations] was somewhat arbitrary"). As a database against which to assess the generalizations, he put together a list of 2,600 words. These included each distinct word in each of the four basal series from which the generalizations were drawn, plus all of the words from the Gates Reading Vocabulary for the Primary Grades.

For each of the forty-five generalizations, Clymer and his colleagues counted all of the words to which it pertained and, of those, all of the ones with which it properly conformed according to Webster's *New Collegiate Dictionary* (edition uncited). To quantify the reliability of each generalization, he divided the number of words with which it conformed by the total number of words to which it could be applied. His resulting table of phonic generalizations is reproduced in table 11.3. I have changed it only by regrouping the generalizations by functional category and, within category, ranking them in order of the total number of words (conforming plus exceptions) to which each was found to pertain.

The point that Clymer drew from this table is that the generality of most of these generalizations is disturbingly low. Those that work reliably (have the highest percentage of utility) often pertain to relatively infrequent spelling patterns. Those that pertain to the most frequent spelling patterns are often relatively unreliable. In Clymer's words: "In evaluating this initial venture in testing the utility of phonic generalizations, it seems quite clear that many generalizations which are commonly taught are of limited value."²⁶

I am sure that I was taught some "silent-e rule" quite similar to generalization 6 in Clymer's table. And, although I am fully aware of a number of exceptions, my feeling was that it really does work better than indicated by Clymer's statistics. Perhaps because others were similarly surprised by these results, the study has been repeated in kind, over and over again. Each time the statistical results have also been replicated in kind.²⁷

Yet the data in Clymer's table extend well beyond the numbers and so do the pedagogical points the data should raise. Specifically, the utility (or lack thereof) of a phonic

Table 11.3

Clymer's summary table of the utility of forty-five phonic generalizations.

<u>Generalization</u>	<u>Number of words conforming</u>	<u>Number of exceptions</u>	<u>Percentage utility</u>
Pronunciation of vowels			
1. One vowel letter in an accented syllable has its short sound.	547 <i>city</i>	356 <i>lady</i>	61
2. When a word has only one vowel letter, the vowel sound is likely to be short.	433 <i>hid</i>	322 <i>kind</i>	57
3. When there are two vowels side by side, the long sound of the first one is heard and the second is usually silent.	309 <i>bead</i>	377 <i>chief</i>	45
4. When a vowel is in the middle of a one-syllable word, the vowel is short.	408	249	62
a. Middle letter.	191 <i>dress</i>	84 <i>scold</i>	6
b. One of the middle two letters in a word of four.	191 <i>rest</i>	135 <i>told</i>	59
c. One vowel within a word of more than four letters.	26 <i>splash</i>	30 <i>light</i>	46
5. The <i>r</i> gives the preceding vowel a sound that is neither long nor short.	184 <i>horn</i>	134 <i>wire</i>	78
6. When there are two vowels, one of which is final <i>e</i> , the first vowel is long and the <i>e</i> is silent.	180 <i>bone</i>	108 <i>done</i>	63

²⁶ Clymer (1963, p. 255).

²⁷ Bailey (1967); Burmeister (1968); Emans (1967); Sorenson (1983, cited in Searfoss and Readence, 1985).

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<u>Generalization</u>	<u>Number of words conforming</u>	<u>Number of exceptions</u>	<u>Percentage utility</u>
7. The first vowel is usually long and the second silent in the digraphs <i>ai</i> , <i>ea</i> , <i>oa</i> , and <i>ui</i> .	179	92	66
a. <i>ai</i>	43 <i>nail</i>	24 <i>said</i>	64
b. <i>ea</i>	101 <i>bead</i>	51 <i>head</i>	66
c. <i>oa</i>	34 <i>boat</i>	1 <i>cupboard</i>	97
d. <i>ui</i>	1 <i>suit</i>	16 <i>build</i>	6
8. When words end with silent <i>e</i> , the preceding <i>a</i> or <i>i</i> is long.	164 <i>cake</i>	108 <i>have</i>	60
9. When <i>y</i> is the final letter in a word, it usually has a vowel sound.	169 <i>dry</i>	32 <i>tray</i>	84
10. When <i>y</i> is used as a vowel in words, it sometimes has the sound of long <i>i</i> .	29 <i>fly</i>	170 <i>funny</i>	15
11. When <i>y</i> or <i>ey</i> is seen in the last syllable that is not accented, the long sound of <i>e</i> is heard.	0	157 <i>baby</i>	0
12. The letter <i>a</i> has the same sound (<i>o</i>) when followed by <i>l</i> , <i>w</i> , and <i>u</i> .	61 <i>all</i>	65 <i>canal</i>	48
13. <i>W</i> is sometimes a vowel and follows the vowel digraph rule.	50 <i>crow</i>	75 <i>threw</i>	40
14. When there is one <i>e</i> in a word that ends in a consonant, the <i>e</i> usually has a short sound.	85 <i>leg</i>	27 <i>blew</i>	76

<u>Generalization</u>	<u>Number of words conforming</u>	<u>Number of exceptions</u>	<u>Percentage utility</u>
15. In many two- and three-syllable words, the final <i>e</i> lengthens the vowel in the last syllable.	52 <i>invite</i>	62 <i>gasoline</i>	46
16. Words having double <i>e</i> usually have the long <i>e</i> sound.	85 <i>seem</i>	2 <i>been</i>	98
17. The two letters <i>ow</i> make the long <i>o</i> sound.	50 <i>own</i>	35 <i>down</i>	59
18. When <i>a</i> follows <i>w</i> in a word, it usually has the sound <i>a</i> as in <i>was</i> .	15 <i>watch</i>	32 <i>swam</i>	32
19. In the phonogram <i>ie</i> , the <i>i</i> is silent and the <i>e</i> has a long sound.	8 <i>field</i>	39 <i>friend</i>	17
20. In <i>ay</i> the <i>y</i> is silent and gives <i>a</i> its long sound.	36 <i>play</i>	10 <i>always</i>	78
21. If the only vowel letter is at the end of a word, the letter usually stands for a long sound.	23 <i>he</i>	8 <i>to</i>	74
22. When <i>e</i> is followed by <i>w</i> , the vowel sound is the same as represented by <i>oo</i> .	9 <i>blew</i>	17 <i>sew</i>	35
23. When <i>a</i> is followed by <i>r</i> and final <i>e</i> , we expect to hear the sound heard in <i>care</i> .	9 <i>dare</i>	1 <i>are</i>	90

<u>Generalization</u>	<u>Number of words conforming</u>	<u>Number of exceptions</u>	<u>Percentage utility</u>
Vowel/consonant combination			
24. When the letter <i>i</i> is followed by <i>gh</i> , the letters the <i>i</i> usually stands for its long sound and the <i>gh</i> is silent.	22 <i>high</i>	9 <i>neighbor</i>	71

Pronunciation of consonants

25. When two of the same consonants are side by side only one is heard.	334 <i>carry</i>	3 <i>suggest</i>	99
26. When the letter <i>c</i> is followed by <i>o</i> or <i>a</i> , the sound of <i>k</i> is likely to be heard.	143 <i>camp</i>	0	100
27. <i>Ch</i> is usually pronounced as it is in <i>kitchen</i> , <i>catch</i> , and <i>chair</i> , not like <i>sh</i> .	99 <i>catch</i>	5 <i>machine</i>	95
28. When <i>c</i> and <i>h</i> are next to each other, they make only one sound.	103 <i>peach</i>	0	100
29. The letter <i>g</i> often has a sound similar to that of <i>j</i> in <i>jump</i> when it precedes the letter <i>i</i> or <i>e</i> .	49 <i>engine</i>	28 <i>give</i>	64
30. When <i>c</i> is followed by <i>e</i> or <i>i</i> , the sound of <i>s</i> is likely to be heard.	66 <i>cent</i>	3 <i>ocean</i>	96
31. When a word ends in <i>ck</i> , it has the same last sound as in <i>look</i> .	46 <i>brick</i>	0	100

<u>Generalization</u>	<u>Number of words conforming</u>	<u>Number of exceptions</u>	<u>Percentage utility</u>
32. When <i>ght</i> is seen in a word, <i>gh</i> is silent.	30 <i>fight</i>	0	100
33. When a word begins <i>kn</i> , the <i>k</i> is silent.	10 <i>knife</i>	0	100
34. When a word begins with <i>wr</i> , the <i>w</i> is silent.	8 <i>write</i>	0	100

Division of syllables

35. If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.	404 <i>bullet</i>	159 <i>singer</i>	72
36. If the first vowel sound in a word is followed by a single consonant, that consonant usually begins the second syllable.	190 <i>over</i>	237 <i>oven</i>	44
37. In a word of more than one syllable, the letter <i>v</i> usually goes with the preceding vowel to form a syllable.	53 <i>cover</i>	20 <i>clover</i>	73
38. If the last syllable of a word ends in <i>le</i> , the consonant preceding the <i>le</i> usually begins the last syllable.	62 <i>tumble</i>	2 <i>buckle</i>	97
39. When the first vowel element in a word is followed by <i>th</i> , <i>ch</i> , or <i>sh</i> , these symbols are not broken when the word is divided into syllables may go with either the first and or second syllable.	30 <i>dishes</i>	0	100

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Generalization

Accentuation of syllables

	Number of words conforming	Number of exceptions	Percentage utility
40. In most two-syllable words, the first syllable is accented.	828 <i>famous</i>	143 <i>polite</i>	85
41. When the last syllable is the sound <i>r</i> , it is unaccented.	188 <i>butter</i>	9 <i>appear</i>	95
42. In most two-syllable words that end in a consonant followed by <i>y</i> , the first syllable is accented and the last is unaccented.	101 <i>baby</i>	4 <i>supply</i>	96
43. If <i>a</i> , <i>in</i> , <i>re</i> , <i>ex</i> , <i>de</i> , or <i>be</i> is the first syllable in a word, it is usually unaccented.	86 <i>belong</i>	13 <i>insect</i>	87
44. When <i>tion</i> is the final syllable in a word, it is unaccented.	5 <i>station</i>	0	100
45. When <i>ture</i> is the final syllable in a word, it is unaccented.	4 <i>picture</i>	0	100

g realization depends on much more than the frequency or reliability of its applicability.

Evaluating Phonic Generalizations

Psychologically, whatever we may call them and however unreliable they may be, phonic generalizations are essentially rules. As such, they cannot substitute for direct familiarity with the patterns to which they apply. Nevertheless, there remain at least two wholly reasonable motivations for presenting them.

The first is to direct students' attention to a particular orthographic structure and its behavior. Generalizations presented under this motivation need not be memorized; their purpose instead is to sharpen the students' memory for the patterns to which they apply.

The other motivation is to provide the students with some cognitive recourse for dealing with recognition difficulties—with some consciously mediated guidance for constructing and trying out alternative responses. Although memorization of useful generalizations in this category is worthwhile, there are stronger constraints on what makes generalizations in this category useful.

First, remember that such generalizations operate only through conscious recourse. This means that it is critical that they be expressed and elaborated or otherwise taught in a way that they can be productively understood and applied. Second, it is only when the recognition network has failed to yield an acceptable response that conscious resort to such generalizations will be attempted. By implication the kind of guidance that such generalizations can usefully provide is that which is somehow incompatible with or foreign to the current knowledge or structure of the reader's recognition system.

Having set this second group of generalizations off as different in kind from the first, I must now point out that, for any given generalization, the distinction is temporary. Thus when a child is perceptually insensitive to the difference between *b* and *d*, some consciously mediated heuristic, such as to imagine the shape of *bed*, may be quite helpful. With experience, however, the distinction between these letters will find representation in the letter recognition network—perforce explicit knowledge of the *be* heuristic will then be superfluous. And the same holds for any other relation that might once have required conscious thought—be it the "final-*e* rule," that *data* takes a plural verb, or when to use *which* and when to use *that*. Gradually, as these relations become more and more broadly instantiated in our memories, v