

ON THE DISTINCTION BETWEEN ‘PHONETIC’ PALINDROMES AND ‘PHONETICALLY’ REVERSIBLE WORDS

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1. Defining three types of words

By definition, a palindrome is a word, phrase or sentence that reads the same in the reverse direction as in the forward one. Simple examples of four letter English palindromes include SEES and DEED, but a moment’s reflection reveals that there is a fundamental difference between these two words. While SEES and DEED are both palindromes, only the latter word is pronounced the same when read in either direction (i.e. as [did], where [d] and [i] are the phonetic symbols for the consonant and vowel sounds in that word). By contrast, the word SEES is pronounced as [siz] when read from left to right, but as [zis] when read in the opposite direction. I propose the following terminological distinction (although I suggest a minor refinement to this terminology in section 3): Words like DEED are ‘phonetic palindromes’, while words like SEES are ‘non-phonetic palindromes’.

A number of commentators have pointed out through the years that there is a related phenomenon, sometimes referred to as a ‘phonetically reversible word’ (see David Morice, *The Dictionary of Wordplay*), which by definition is a non-palindromic word that sounds the same, regardless of whether or not it is read forwards or backwards. This type of example was investigated by Susan Thorpe in the last issue of *Word Ways*, although her terminology is not the same as the terminology I employ here. By definition, words like BABE and KNOWN are phonetically reversible words because they not palindromes, although they are pronounced the same in either direction.

The distinction between the three types of words described above is illustrated in Figure 1. The columns labeled ‘letters’ and ‘sounds’ are intended to express the presence or absence of two binary properties. The former says that the sequence of letters in that word type – when spelled left-to-right – is the same as the sequence of letters one obtains when reading in the opposite direction. The property I call ‘sounds’ in Figure 1 means that the sequence of sounds in that word type – when pronounced from left-to-right – is the same as it is when the sounds are pronounced in the opposite direction. The three types of words described above can be distinguished from another given these two binary properties:

Figure 1: Three types of words

<i>example</i>	<i>letters</i>	<i>sounds</i>	<i>word type</i>
DID	yes	yes	phonetic palindrome
SEES	yes	no	non-phonetic palindrome
BABE	no	yes	phonetically reversible word

A fourth logical possibility is a word with the ‘no’ answer to both properties. This type of word is clearly the most copious type of lexical item in languages like English with an alphabetic writing system (e.g. CAT, DOG, RICE, EAT...).

2. Large and small monosyllables

I consider now a larger set of examples of each the three types of words in Figure 1, focusing in particular on those words which consist of a single spoken syllable (monosyllable). The general question that I investigate here pertains to size, measured in terms of the number of letters: What are the largest and the smallest English monosyllables for each of the three word types in Figure 1?

In Figure 2 I present a list of phonetically reversible monosyllables, which I have placed into one of fifteen categories (listed in the leftmost column). ‘C’ and ‘V’ stand for a consonant letter and a vowel letter respectively; Y and W function as a C in these items. The words listed here include many of the ones compiled by Susan Thorpe in the last issue of this journal as well as a number of examples of my own (all from Webster’s Third). By definition, phonetically reversible words cannot be palindromes; hence, one might assume that the former word type must have at least two letters. This basic assumption is correct; although I have included examples under the ‘C’ category which include an apostrophe for reasons that are made clear in my article dealing with one-letter words in this issue of *Word Ways*. The same reasoning applies to the ‘LL’ example in the ‘CC’ category.

Figure 2: Monosyllabic phonetically reversible words:

C:	’D, D’, ’I, ’M, O’, ’N, ’S, S’, ’T, T’, Y’
VV:	AE, AI
VC:	UH, AH, AW, EH, OH, OY
CC:	’LL
CVC:	SUS
VCV:	AWE, OWE, OYE
CVVC:	COOK, DEAD, DIED, DOWD, FIEF, MAIM, NOUN, REAR, ROAR, SOUS, TAIT, TEAT, ZEES, ZOOS
CVCV:	BABE, CAKE, DUDE, MIME, NINE, PIPE, POPE, RARE, SICE, TATE, TOTE
CVCC:	CESS, COCK, FAFF, FUFF, KICK, LALL, LILL, LOLL, LULL, PAPE, SASS, SESS, SISS, SOSS, SUSS, TOTE, ZIZZ
CVVCV:	CEASE, SAUCE, SOUSE
CVCCV:	JUDGE
CCVCC:	KNOWN, SHISH, SHUSH, STUTS
CCVCVC:	STATES
CCVVCC:	STOATS, STOUTS, STOITS
CVVCCC:	TAUGHT

The words provided in Figure 2 and below presuppose that affricates (e.g. the sounds represented by J or DG in a word like JUDGE, phonetically [dʒʌdʒ]) are pronounced the same in both directions even though they are transcribed phonetically with two symbols (i.e. [d] and [ʒ]). The same point holds for diphthongs (e.g. the [ai] in TIE). By contrast, I have omitted examples like EWE and YOU (both pronounced [ju]) in Figure 2 because I am assuming that the backwards reading of those words gives [uj]. In contrast to Susan Thorpe I do not include words like STARTS with a post-vocalic ‘r’ because I am basing the words in the present study on (my) American English pronunciation, in which the ‘r’ in such items is pronounced as such.

In Figure 3 I list non-phonetic palindromes consisting of one spoken syllable (from Webster's Third)

Figure 3: Monosyllabic non-phonetic palindromes:

V or C:	B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, U, V, X, Y, Z
CVC:	HAH, HUH, WAW
VCV:	EKE, EME, ERE, EVE, EWE, EYE
CVVC:	SEES
CVCVC:	DEKED
CCVCC:	SHAHS
CVCCVC:	DENNED

Only 21 of the 26 letters are listed in the 'V or C' category in Figure 3; w is absent because it is a phonetic trisyllable and not a phonetic monosyllable. The letters A (with the pronunciation as the diphthong [eɪ] as in CANE or as [ə] in ABOUT), E, I and O are phonetic palindromes (see Figure 4). In a similar vein, many examples of short palindromes of the form 'VV' or 'VCV' are not included in Figure 3 because they are not spoken monosyllables, e.g. AA, ABA, OHO, etc.

In Figure 4 I have listed monosyllabic phonetic palindromes:

Figure 4: Monosyllabic phonetic palindromes:

V:	A, E, I, O
CVC:	BIB, BOB, DAD, DID, GAG, GIG, MOM, MUM, NUN, PAP, PIP, POP, PUP, SIS, TAT, TIT, TOT, VAV, WAW, WOW
CVVC:	BOOB, DEED, KOOK, NAAN, NOON, PEEP, POOP
CVCVC:	DEWED
CCVCC:	STATS, STETS, STOTS

Note that the word WAW is present in the 'CVC' category of Figure 3 and Figure 4. In the former, WAW ('the cry of a cat') is pronounced [wa] and in the latter ('the sixth letter of the Hebrew alphabet') is pronounced [vav].

In Figure 5 I have summarized the maximum and minimum lengths for monosyllables among the three types of words discussed above:

Figure 5: Maximum and minimum monosyllables:

<i>shortest</i>	<i>longest</i>	<i>word type</i>
1 letter	5 letters	phonetic palindrome
1 letter	6 letters	non-phonetic palindrome
1 letter	6 letters	phonetically reversible word

It is interesting to compare the statistics on maximum and minimum word length above with those of non-palindromic, non-phonetically reversible words, i.e. the fourth logical possibility discussed in section 1. As I noted in a previous article (2011, Word Ways 44.1), the longest English monosyllables contain nine (e.g. SQUELCHED, STRENGTHS) and occasionally ten letters

(SCRAUNCHED). Can the three types of words in Figure 5 exceed the maximum length listed in the second column?

3. Do 'phonetic' palindromes and 'phonetically' reversible words really exist?

Readers familiar with the phonetics of English consonants are no doubt aware of the fact that many of the phonetic palindromes and phonetically reversible words listed above are not actually pronounced exactly the same way in both directions. This point can be illustrated by considering CVC words in which the two Cs are pronounced as voiceless stops, i.e. 'p', 't', or 'k'. It is an established fact in phonetics that these three English sounds are pronounced differently in word-initial position than in word-final position. Consider by way of example the word TOT. The first 't' sound in this word is strongly aspirated, but the second 't' sound is not. What this means is that the word TOT is not really a 'phonetic' palindrome because that word is pronounced [t^hat] (where aspiration is transcribed with a raised 'h') when read from left to right and not as [tat].

But the same generalization holds for *all* other English words of the form beginning and ending with a 't' sound. What is more, 'p' and 'k' sounds are also strongly aspirated in word-initial position but not in word-final position; hence, 'phonetic' palindromes like POP and KOOK and 'phonetically' reversible words like COOK and PIPE are, in actuality, not pronounced the same in both directions.

Similar generalizations probably hold for words in which the initial consonant and the final consonant are anything other than voiceless stops. For example, word-initial sounds like 'b', 'd', 'g', 'v' etc. are pronounced differently than the same consonant in word-final position. The difference between the pronunciation of a word-initial consonant and the 'same' consonant in word-final position is usually quite subtle and is therefore not always detectable without the appropriate phonetic instruments. The important point for logology is that there are in all probably no examples at all of true phonetic palindromes or true phonetically-reversible words.

So now that we have unmasked the imposters, what should we call them? Readers familiar with the distinction between phonetics and phonology might anticipate the answer: Instead of referring to 'phonetic' palindromes and 'phonetically' reversible words, it would be more accurate to label them 'phonemic' palindromes and 'phonemically' reversible words respectively, where the term 'phonemic' describes sounds not as they are actually pronounced, but as abstract units that contrast with other sounds (i.e. phonemes). This means that the two 't' sounds in a word like TOT can be thought of as being the same phoneme (represented /t/), even though they are pronounced differently.

HOW TO DOUBLE THE MEANING OF LIFE

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An excerpt from Anil's new book.

speaking with a
forked tongue

