Phonaesthetically speaking

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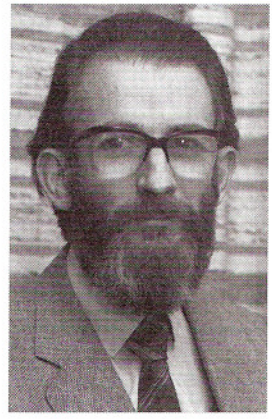

An examination of why people regard some words as inherently more beautiful than others

EVERY now and then, people ponder about the most beautiful words in the English language – beautiful, that is, in terms of sound rather than meaning. The study of the expressive properties of sound is called *phonaesthetics*. Here is a selection of phonaesthetic opinions.

- From Willard Funk, the lexicographer: *tranquil, murmuring, mist, chimes, dawn, hush, luminous, lullaby, golden, melody*. Pressed to extend this list, he added 21 other items before calling a halt: *chalice, jonquil, thrush, marigold, myrrh, damask, asphodel, oleander, halcyon, oriole, fawn, anemone, tendril, amaryllis, camelia, ceulean, rosemary, alyssum, gossamer, mignonette, bobolink*.

- From poet John Kitching (in no specific order): *velvet, melody, young, gossamer, crystal, autumn, peace, mellifluous, whisper, tranquil, lace, caress, silken, willow, mellow, lullaby, dawn, shimmer, yellow, silver, marigold, golden, dream, harmony, olden, blossom, champagne, sleep, dusk, magic, hummock, love, mist, darling, laughter, butterfly, charity, eiderdown, sky, parakeet, rosemary, froth, gazebo, ivory, syllabub, vacillate, mesmerism, echo, fate, jacaranda, harlequin, chrysalis, violin, enigma, tart, sycamore, pomp, chinchilla, truffle, myrrh, bewildered, claret, akimbo, fur, flamingo, celandine, ominous, tantalize, wine, antimacassar, jewel, skill, russet, buckram, delight, thrill, clavichord, didgeridoo, doppelganger, fractious, zoo*.

- In a 1980s' newspaper report, an unnamed novelist is said to have chosen: *peril, moon, shadow, azure, carnation, heart, silence, forlorn, April, apricot*.

- In a 1980 *Sunday Times* reader's poll, *melody* and *velvet* tied for first place; third was a tie between *gossamer* and *crystal*, followed by *autumn, peace, tranquil, twilight*, and *murmur*, with *caress, mellifluous*, and *whisper* tying for tenth place.

It is impossible, of course, to separate sound and meaning totally: the writer who found *peril* a beautiful word is actually doing something rather unusual, in being able to disassociate sound from meaning so radically. On the whole, pleasant-sounding words have positive and desirable meanings, or represent favoured semantic domains, such as birds and flowers.

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But, we may still ask, out of the thousands of words in English with positive and desirable meanings, why have these particular ones been chosen? Several turn up on more than one list (*autumn, caress, crystal, dawn, golden, gossamer, lullaby, marigold, mellifluous, melody, mist, myrrh, peace, rosemary, tranquil* (3 times), *velvet, whisper*). Is there something about the phonetics of these words which makes them so attractive? Which phonological patterns are most involved?

It is a useful exercise to stop at this point, and jot down the sound effects which strike you as being particularly important, in the above lists, before comparing your list with the results of the analysis below. The task is to notice not only which sounds and sound patterns are frequently used, but also – rather more difficult – which are not used at all. 'Ugly' words, presumably, would use these 'missing' sounds rather more often.

For this exercise, I made a phonological profile of the distribution of the sounds in these words, marking where in a syllable a sound occurred, the number of syllables in the word, and where the stress fell. Such a profile enables the analyst to see at a glance which sounds are used, and how often, and which sounds are not used at all. I used the analysis of the English sound system as it is presented in A C Gimson's *Introduction to the Pronunciation of English* (Edward Arnold, 5th edition, 1994), and assumed Received Pronunciation. Here are the main findings. (Phonetic symbols are glossed in Panel 1.)

Consonants

- The consonants clearly divide into two types: high frequency and low frequency. Just eight items account for 73% (274) of all consonants: /l/ is top, with 59 instances (16%), fol-

1a

Phonetic symbols

Conversation	*% of all segments*	*Phonaesthetic words*	*N/% of all segments (625)*	*% of all consonants (377)*
Consonants				
n	7.58	l	59/9.44	15.65
t	6.42	m	40/6.40	10.61
d	5.14	s	35/5.60	9.28
s	4.81	n	33/5.28	8.75
l	3.66	r	29/4.64	7.69
ð	3.56	k	28/4.48	7.43
r	3.51	t	26/4.16	6.90
m	3.22	d	24/3.84	6.37
k	3.09	f	12/1.92	3.18
w	2.81	b	11/1.76	2.92
z	2.46	p	10/1.60	2.65
v	2.00	v	8/1.28	2.12
b	1.97	ŋ	8/1.28	2.12
f	1.79	w	8/1.28	2.12
p	1.78	g	7/1.12	1.86
h	1.46	z	7/1.12	1.86
ŋ	1.15	ʃ	7/1.12	1.86
g	1.05	h	6/0.96	1.59
ʃ	0.96	ʧ	5/0.80	1.33
j	0.88	ʤ	5/0.80	1.33
ʤ	0.60	j	5/0.80	1.33
ʧ	0.41	θ	3/0.48	0.80
θ	0.37	ʒ	1/0.16	0.26
ʒ	0.10	ð	0	0

Vowels 1b

			N/% of all segments (625)	*% of all vowels (248)*
ə	10.74	ə	61/9.76	24.60
ɪ	8.33	ɪ	49/7.84	19.76
e	2.97	æ	24/3.84	9.68
aɪ	1.83	e	14/2.24	5.65
ʌ	1.75	iː	14/2.24	5.65
eɪ	1.71	aɪ	13/2.08	5.24
iː	1.65	əʊ	13/2.08	5.24
əʊ	1.51	ʌ	12/1.92	4.84
æ	1.45	ɒ	10/1.60	4.03
ɒ	1.37	eɪ	8/1.28	3.23
ɔː	1.24	uː	7/1.12	2.82
uː	1.13	ɔː	7/1.12	2.82
ʊ	0.86	aː	7/1.12	2.82
aː	0.79	ɜː	4/0.64	1.61
aʊ	0.61	ɪə	2/0.32	0.81
ɜː	0.52	aɪə	1/0.16	0.40
ɛə	0.34	aʊ	1/0.16	0.40
ɪə	0.21	ʊə	1/0.16	0.40
ɔɪ	0.14			
ʊə	0.06			

lowed by /m/ (40), /s/ (35), /n/ (33), /r/ (29), /k/ (28), /t/ (26), and /d/ (24). If this ranking is compared with that found in conversation (see Panel 1), the use of /l/ and /m/ is noteworthy.

- There is then a big jump before reaching the low-frequency consonants: /f/ (12), /b/ (11), /p/ (10), /v/ (8), /ŋ/ (8), /w/ (8), /g/ (7), /z/ (7), ʃ (7), /h/ (6), /ʧ/ (5), /ʤ/ (5), /j/ (5), /θ/ (3), /ʒ/ (1). /ð/ is the only consonant which does not occur at all.

- If we group these consonants into types according to their *manner of articulation*, frictionless continuants are commonest (182: 101 oral, 81 nasal), followed by plosives (106), fricatives (79), and affricates (10). As there are only four oral continuants (/l, r, w, j/) and three nasals (/m, n, ŋ/), but six plosives (/p, b, t, d, k, g/) and nine fricatives (/f, v, θ, ð, s, z, ʃ, ʒ, h/), this distribution is noteworthy. Continuants are definitely popular.

- If we group consonants in terms of their *place of articulation*, there is very little difference from everyday conversation. Front (notably labial) consonants are a little more frequent in phonaesthetically pleasing words, and back ones (velar and glottal) a little less so.

- Only 61 (16%) of the consonants appear as *adjacent consonants* (e.g. /dr-, -ld-/. There are only three cases where three consonants come together (as in *tendril*). Many people have an initial impression that consonant clusters are an important feature of phonaesthetic words: in fact, they are not.

- In any word, is there a likelihood that consonants influence each other *in sequence?* If a word contains an /m/, will there be another /m/ following in the word? This does not happen much. In only 6 cases are there instances of a consonant being immediately followed by exactly the same consonant (whether separated by a vowel or not) (e.g. *bobolink*); five of these, interestingly, involve plosives.

- What about grouping *sequences* of consonants into *place of articulation* categories (e.g. labial, alveolar, velar, glottal)? If a word contains an /m/, will there be another *bilabial* consonant following in the word? There is little of interest here. There is a slight preference (60:40%) in favour of changing the place of articulation from one consonant to the next, but nothing very dramatic.

• What about grouping *sequences* of consonants into *manner of articulation* categories (e.g. plosive, fricative, nasal, continuant)? If a word contains an /m/, will there be another *nasal* consonant following in the word? Here there is a major preference (84:16%) in favour of changing the type of consonant. A word apparently sounds prettier if the manner of consonantal articulation changes as the syllables pass by.

• The *voicing* pattern within a word seems to be of little interest. Only 132 (35%) of the consonants are voiceless, but this is almost exactly the proportion we would expect in everyday conversation. This carries through into the word patterns: if a consonant is voiced, there is a 60% chance that the next consonant is also going to be voiced; if a consonant is voiceless, there is a 30% chance that the next one is also going to be voiceless.

Vowels

• Of the 172 vowels, the unstressed vowel /ə/ is commonest (61), showing that words of *more than one syllable* are preferred. Of the 114 words, only 25 are monosyllabic, in fact; the largest category (45) is words of three or more syllables. Of these, 29 (65%) have the chief stress on the first syllable.

• The other common vowel is /ɪ/ (49), which occurs over twice as often as the next vowel /æ/ (24), followed by /e/, /iː/, /ai/, etc. (see Panel 1b). This is close to the vowel rankings of everyday conversation. The only pure vowel which is not used at all is /ʊ/ (as in *put*). People have the impression that long pure vowels are important in phonaesthetically pleasing words: in fact, four of the five long vowels are not even in the top ten of the vowel list. Diphthongs do better.

• If we look at vowels in terms of where they are articulated in the mouth – whether at the *front* (or, in the case of diphthongs, starting at the front) (e.g. /æ, aɪ/), *central* (e.g. /ə, əʊ/), or *back* (e.g. /uː, ɔɪ/), we find an interesting pattern. There are more front vowels here than in everyday conversation (20% vs. 15.5%). There is also a strong tendency for a polysyllabic phonaesthetic word to start with a vowel in the front position (in 52 cases; 58%) and then either to continue using front vowels later in the word (e.g. *camelia*) or to have these other vowels move in a backwards direction (e.g. *apricot*; 40 cases; 45%). There are no cases of words in which all the vowels are found in the back position; and there are only 10 instances (12%) where the word begins with a back vowel and has later vowels further forward (e.g. *autumn*). Similarly, there are only 13 cases (15%) where the word begins with a central vowel, with later vowels either staying central or moving further forward (e.g. *murmuring*). There is no real trend for a word of three syllables or more to have its vowels spread between front, central, and back (e.g. *sycamore*), a pattern found in only 13 out of 45 cases (29%).

Caprice in consonants

Some words have such a lovely sound
It's pleasant to roll them round and round
And savor their syllables on the tongue, –
Words like oriole, melody, young.

Other words, though, of ungraceful letter,
Harsh, abrasive,... sound even better!
These are words of intrinsic beauty, –
Service, conscience, kindliness, duty.

— Alma Denny, New York

• If we look at vowel articulation in terms of whether the vowels are *high, mid,* or *low* in the mouth, there is less to say. There are no real differences here compared with the proportions found in everyday conversation. The only strong tendency is for a polysyllabic word to begin with a vowel in mid or low position (66 cases; 76%) and for later vowels in the word to move in an upwards direction e.g. *ivory*; 26 cases, 58%). Only 12 cases (27%) move in the opposite direction, starting high, and ending up low (e.g. *syllabub*).

If these trends are respectable, given the small sample, it is possible to see how we can create phonaesthetically pleasing new words. It would seem advisable to give them three syllables, to stress the first syllable, to use at least one /m/ or /l/ (preferably both), to introduce high-frequency consonants and avoid low-frequency ones, to have at least three different manners of consonantal articulation, to keep the vowels short, and to have the vowels move from mid towards high, and from front towards back.

A matrix of criteria

2

	3+ sylls	Stress on 1st syll	Uses /m/	Uses /l/	Use of other high freq Cs	No use of low freq Cs	3+ diff manner of artic	Only short Vs	Front> Centre/ Back	Low> Mid/ High
tremulous	√	√	√	√	√	√	√	√	√	√
alyssum	√	√	√	√	√	√	√	√	√	×
alumnus	√	×	√	√	√	√	√	√	√	√
ramelon	√	√	√	√	√	√	√	√	√	√
drematol	√	√	√	√	√	√	√	√	√	√
Pimlico	√	√	√	√	√	×	√	×	√	×
Wapping	×	√	×	×	×	×	√	√	×	√
phlegmatic	√	×	√	√	√	×	√	√	√	×
flatulent	√	√	×	√	√	×	√	√	×	×
gripe	×	n.a.	×	×	√	×	×	×	n.a.	n.a.
jazz	×	n.a.	×	×	×	×	×	√	n.a.	n.a.
tart	×	n.a.	×	×	√	√	×	×	n.a.	n.a.
zoo	×	n.a.	×	×	×	×	×	×	n.a.	n.a.

n.a. = not applicable

A matrix of criteria

We can see this more clearly if we construct a matrix with these ten criteria across the top and candidate words down the side (see Panel 2). *Tremulous*, from the above listings, scores 10 out of 10, *alyssum* 9. On the other hand, several of the words in these listings have very little going for them: *tart* scores 2; *zoo* scores zero! Words which have scores of less than about 6 are probably in a list chiefly because of their meaning rather than their sound.

And ugly words? We can of course use the matrix to test the opposite effect. A group of elocutionists once produced a listing of what they considered to be the ten ugliest-sounding words in the language: *flatulent, treachery, crunch, phlegmatic, sap, jazz, plutocrat, cacophony, gripe, plump*. Are these genuinely unpleasant in sound, or is it the meaning which is the root of the objection? The phonaesthetic matrix shows that some of them are actually quite pleasant-sounding, really. *Phlegmatic* scores 7 out of 10, and *flatulent* 8. On the other hand, there seems to be very little going for *gripe* and *jazz* (both 1 out of 10).

Using this approach, we could probably extend our list of pretty words quite substantially, to include such items as *emulate* and *alumnus*. We could also start thinking up pretty words which do not yet exist, such as *ramelon* and *drematol* (though of course such word-forms may already be used to make nice-sounding names for pharmaceuticals and other products). The matrix also suggests why, if we wanted to write a romantic poem about, say, London Underground stations, our list would very likely include *Pimlico* and *Colindale*, but exclude *Goodge Street* and *Wapping*. And why friendly space aliens receive such names as *Alaree* and *Osnomian*, why enemy names include *Vatch* and *Triops*, and why *Klingons* are likely to be just a tad less aggressive than *Kryptons*. ET

Acknowledgement

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