

**S1 Table. Details of phonetic analysis for Rainbow passage.** Blue and green columns show the number and fraction of each phoneme category in phrase, respectively.

Phrase Number	Phrases	Syllables Number	IPA Phonation	Vowels	Voiced Plosives	Voiced Fricatives	Voicesless Plosives	Voiced Fricatives	Voicesless Fricatives	Nasals	Approx.	Trills	
1	When the sunlight strikes raindrops in the air,	10	wen ðə 'sʌn,lait strəks 'reɪn,drɒps ɪn ði 'eɪr,	13	0.382	1	0.029	4	0.118	4	0.118	4	0.118
2	they act as a prism and form a rainbow.	10	ðeɪ ækt əz ə 'prɪzəm ænd fɔ:m ə 'reɪn,bəʊ.	14	0.467	1	0.033	3	0.1	4	0.133	0	0
3	The rainbow is a division of white	10	ðə 'reɪn,bəʊ ɪz ə dɪ'vɪʒən əv waɪt	13	0.52	2	0.08	1	0.04	2	0.08	1	0.04
4	light into many beautiful colors.	11	laɪt ɪntu 'meni 'bjʊtəfəl 'kɔləz.	11	0.423	1	0.038	4	0.154	1	0.038	3	0.115
5	These take the shape of a long round arch,	9	ði:z teɪk ðə 'ʃeɪp əv ə lɒŋ raʊnd ɑ:rtʃ.	12	0.429	1	0.036	4	0.143	4	0.143	2	0.071
6	with its path high above, and its two ends	10	wɪð ɪts pæθ haɪ ə'bʌv, ænd ɪts tu endz	11	0.393	2	0.071	4	0.143	4	0.143	2	0.071
7	apparently beyond the horizon.	10	ə pərəntli bɪ'ɒnd ðə hə'raɪzən.	11	0.458	2	0.083	2	0.083	3	0.125	1	0.042
8	There is, according to legend,	8	ðeɪnz, ə kɔ:drɪŋ tu 'legənd,	8	0.381	3	0.143	2	0.095	2	0.095	1	0.048
9	a boiling pot of gold at one end.	9	ə 'bɔɪlɪŋ pɒt əv gəʊld æt wʌn end.	10	0.417	4	0.167	3	0.125	3	0.125	3	0.125
10	People look but no one ever finds it.	10	'pi:pl ə' lʊk,bʌt nəʊ wʌn 'evə fɑ:ndz ɪt.	12	0.414	3	0.103	4	0.138	3	0.103	3	0.103
11	When a man looks for something beyond	10	wen ə mæn lʊks fɔ: 'sʌmθɪŋ bɪ'ɒnd	9	0.36	2	0.08	1	0.04	0	0	4	0.16
12	his reach, his friends say he is looking for	10	hɪz ri:tʃ, hɪz frɛndz seɪ hi ɪz 'lʊkɪŋ fɔ:ɹ	11	0.355	1	0.032	2	0.065	4	0.129	7	0.226
13	the pot of gold at the end of the rainbow.	11	ðə pɒt əv gəʊld æt ði end əv ðə 'reɪn,bəʊ.	14	0.467	4	0.133	3	0.1	2	0.067	2	0.067
14	Throughout the centuries people have	9	θru: aʊt ðə 'senʃərɪz 'pi:pl həv	10	0.4	0	0	4	0.16	3	0.12	4	0.16
15	explained the rainbow in various ways.	10	ɪk'splɛnd ðə 'reɪn,bəʊ ɪn 'vərɪəs weɪz.	14	0.467	2	0.067	3	0.1	2	0.067	3	0.1
16	Some have accepted it as a miracle	10	sʌm həv æk'septɪd ɪt əz ə 'mɪrəkl	10	0.4	1	0.04	5	0.2	2	0.08	3	0.12
17	without physical explanation.	9	wɪθaʊt 'fɪzɪkəl, ɪk'splə neɪʃən.	11	0.44	0	0	4	0.16	2	0.08	3	0.12
18	To the Hebrews it was a token that	10	tu ðə 'hi:briʊz ɪt wəz ə 'təʊkən ðæt	12	0.444	2	0.074	5	0.185	4	0.148	1	0.037
19	there would be no more universal floods.	10	ðeɪ wəd bi: nəʊ mɔ: 'ju:nə vɜ:rsəl flʌdz.	10	0.357	3	0.107	0	0	3	0.107	2	0.071
20	The Greeks used to imagine that it was	10	ðə gri:ks ɪzəd tu ɪ'mæɪdʒən ðæt ɪt wəz	10	0.357	3	0.107	4	0.143	5	0.179	1	0.036
21	a sign from the gods to foretell war	10	ə saɪn frəm ðə gɒdz tu fɔ: 'tel wɔ:ɹ	10	0.385	2	0.077	2	0.077	3	0.115	2	0.077
22	or heavy rain. The Norsemen considered	11	ɔ:ɹ 'hevi reɪn. ðə 'nɔ:smɛn kən'sɪdəd	11	0.393	2	0.071	2	0.071	2	0.071	5	0.179
23	the rainbow as a bridge over which the gods	10	ðə 'reɪn,bəʊ əz ə brɪdʒ əvəv wɪf ðə gɒdz	14	0.438	5	0.156	1	0.031	6	0.188	1	0.031
24	passed from earth to their home in the sky.	9	pæst frəm ɜ:θ tu ðeɪr hoʊm ɪn ðə skaɪ.	11	0.393	1	0.036	3	0.107	2	0.071	5	0.179
25	Others have tried to explain the	8	'lðə:z həv traɪd tu ɪk'splɛn ðə	10	0.4	1	0.04	4	0.16	4	0.16	2	0.08
26	phenomenon physically.	8	fə'nomə nən 'fɪzɪkəli.	8	0.471	0	0	1	0.059	1	0.059	2	0.118
27	Aristotle thought that the rainbow was caused	11	'erə stətl ðæt ðæt ðə 'reɪn,bəʊ wəz kɔ:zɪd	13	0.419	2	0.065	5	0.161	4	0.129	2	0.065
28	by reflection of the sun's rays by the rain.	11	bɑ:ɹ ðə 'fɪkʃən, əv ðə saɪnz reɪz bɑ: ðə reɪn.	15	0.455	2	0.061	1	0.03	5	0.152	3	0.091
29	Since then physicists have found that it is not	11	sɪns ðen 'fɪzɪsɪsts həv faʊnd ðæt ɪt ɪz nɒt	12	0.353	1	0.029	4	0.118	5	0.147	8	0.235
30	reflection, but refraction by the raindrops	11	rɪ'fɪkʃən, bʌt, rɪ'frækʃən bɑ: ðə 'reɪn, drɒps	13	0.371	3	0.086	4	0.114	1	0.029	5	0.143
31	which causes the rainbows. Many complicated	10	wɪf kɔ:zə ðə 'reɪn,bəʊz. 'meni 'kɒmplə,ketəd	15	0.429	2	0.057	6	0.171	4	0.114	1	0.029
32	ideas about the rainbow have been formed.	10	aɪ'dɪəz ə'bəʊt ðə 'reɪn,bəʊ həv bi:n fɔ:ɹmɪd.	15	0.484	5	0.161	1	0.032	3	0.097	2	0.065
33	The difference in the rainbow depends	10	ðə 'dɪfərəns ɪn ðə 'reɪn,bəʊ dɪ'pendz	11	0.407	4	0.148	1	0.037	3	0.111	2	0.074
34	considerably upon the size of	10	kən'sɪdərəbli ə'pɒn ðə saɪz əv	11	0.458	2	0.083	2	0.083	3	0.125	2	0.083
35	the drops and the width of the colored band	10	ðə drɒps, ænd ðə wɪð əv ðə 'kɔləd bænd	10	0.333	6	0.2	2	0.067	4	0.133	2	0.067
36	increases as the size of the drops increases.	10	ɪn 'krɪsɪz əz ðə saɪz əv ðə drɒps ɪn 'krɪsɪz.	13	0.394	1	0.03	3	0.091	7	0.212	4	0.121
37	The actual primary rainbow observed	10	ði: 'æktʃuəl 'praɪ,məri 'reɪn,bəʊ əb'zəvɪd	14	0.452	3	0.097	3	0.097	3	0.097	1	0.032
38	is said to be the effect of super-	10	ɪz seɪd tu bi: ði 'ɪfekt əv 'sʊpə	10	0.435	2	0.087	4	0.174	3	0.13	3	0.13
39	imposition of a number of bows.	10	ɪmpə'zɪʃən əv ə 'nʌmbər əv bəʊz.	11	0.458	2	0.083	1	0.042	4	0.167	1	0.042
40	If the red of The second bow falls upon	11	ɪf ðə red əv ðə 'sekənd bəʊ fɛɪz ə'pɒn	12	0.429	3	0.107	2	0.071	4	0.143	3	0.107
41	the green of the first the result is to give	11	ðə grɪn əv ðə fɜ:st, ðə rɪ'zʌlt ɪz tu gɪv	11	0.367	2	0.067	3	0.1	7	0.233	2	0.067
42	a bow with an abnormally wide yellow band,	12	ə bəʊ wɪð ən əb'nɔ:ɹməli waɪd 'jeləʊ bænd,	15	0.484	5	0.161	0	0	4	0.129	5	0.161
43	since red and green light when mixed form yellow.	10	sɪns red ænd grɪn laɪtweɪn mɪkst fɔ:ɹm 'jeləʊ.	12	0.343	3	0.086	3	0.086	0	0	4	0.114
44	This is a very common type of bow.	10	ðɪs ɪz ə 'veri kɒmən taɪp əv bəʊ.	12	0.5	1	0.042	3	0.125	4	0.167	1	0.042
45	one showing mainly red and yellow.	9	wʌn 'ʃəʊɪŋ 'meɪnli red ænd 'jeləʊ.	12	0.48	2	0.08	0	0	1	0.04	5	0.2
46	with little or no green or blue.	8	wɪð 'lɪtl ɔ:ɹ,nəʊ grɪn ɔ:ɹ blɪu.	8	0	2	0.095	1	0.048	0	0	2	0.095