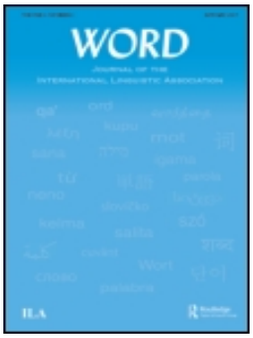

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DINA B. CROCKETT

Secondary Onomatopoeia in Russian*

The term *secondary onomatopoeia* postulates correspondences between individual speech sounds and certain nonauditory experiences, as, for instance, between the sound of the vowel *i* and impressions of smallness.[1] Such correspondences, sometimes also referred to as *phonetic symbolism* or *sound symbolism*, seem rather questionable.[2] Yet the results of several empirical studies indicate that speakers of English, French, German, and Danish do tend to associate certain speech sounds, specifically vowels, with nonauditory perceptions, most definitely with perceptions of differences in size and degrees of brightness.[3] Diffuse vowels are related to smallness,

* Preliminary versions of this article were read on March 9, 1968, at the Thirteenth Annual National Conference on Linguistics of the Linguistic Circle of New York, and on April 27, 1968, at the Twenty-first University of Kentucky Foreign Language Conference.

[1] See esp. Otto Jespersen, "Symbolic Value of the Vowel *I*," *Selected Writings* (London, n.d.), pp. 557–577 (reprinted from *Linguistica*, 1933). Cf. also Maxime Chastaing, "Le symbolisme des voyelles. Significations des *i*. II. Symboles d'acuité et de petitesse," *Journal de psychologie*, LV (1958), 461–481.

[2] Arguments based on analyses of poetry do not seem sufficiently convincing. See, e.g., Maurice Grammont, *Le vers français* (Paris, 1937); Mary M. Macdermott, *Vowel Sounds in Poetry: Their Music and Tone-Colour* (London, 1940); David I. Masson, "Vowel and Consonant Patterns in Poetry," *Essays on the Language of Literature*, ed. Seymour Chatman and Samuel R. Levin (Boston, 1967), pp. 3–18 (reprinted from the *Journal of Aesthetics and Art Criticism*, XII [1953]); Dell H. Hymes, "Phonological Aspects of Style: Some English Sonnets," *Style in Language*, ed. Thomas A. Sebeok (Cambridge, Mass., 1960), pp. 109–131; and Kiril Taranovski, "The Sound Texture of Russian Verse in the Light of Phonemic Distinctive Features," *International Journal of Slavic Linguistics and Poetics*, IX (1965), 114–124. Cf. also Paul Delbouille, *Poésie et sonorités: La critique contemporaine devant le pouvoir suggestif des sons* (Paris, 1961).

[3] See esp. Edward Sapir, "A Study in Phonetic Symbolism," *Journal of Experimental Psychology*, XII (1929), 225–239; Stanley S. Newman, "Further Experiments in Phonetic Symbolism," *American Journal of Psychology*, XLV (1933), 53–75; Dwight Bolinger, "Rime, Assonance, and Morpheme Analysis," *Word*, VI (1950), 123; Heinz Wissemann, *Untersuchungen zur Onomatopoiie*, I (Heidelberg, 1954); Roger W. Brown, Abraham H. Black, and Arnold E. Horowitz, "Phonetic Symbolism in Natural Languages," *Journal of Abnormal and Social Psychology*, L (1955), 388–393; Roger Brown and Roland Nuttall, "Method in Phonetic Symbolism Experiments," *ibid.*, LIX (1959), 441–445;

whereas compact vowels are related to voluminosity. Also, acute vowels are related to light and brightness, and grave vowels to darkness.[4] The present article describes a study aimed at learning whether these correspondences are recognized by speakers of Russian.[5]

Approximately two hundred native speakers of Russian, citizens of the Soviet Union, participated in the study. They answered questionnaires in which they were asked to connect monosyllabic nonsense forms, phonotactically Russian, with polar magnitudes, degrees of brightness, and moods. The last dimension was added as control on the responses to the dimension of brightness, as light is usually associated with happiness, and darkness with misery (cf., e.g., the metaphoric use of words such as *radiant* and *somber* in English as well as in other languages, including Russian).[6]

Two types of questionnaires were used. In the first, each nonsense form was followed by two suggested meanings, and respondents were asked to indicate the meaning more appropriate for the given nonsense form. In questionnaires of the second type, each meaning was followed by five pairs of nonsense forms, and respondents were asked to check the nonsense forms more appropriate for the given meaning.

Respondents were instructed to base their answers on the sound of the nonsense forms and to consider each association without reference to their other answers. In both types of questionnaires the members of each pair were separated by five blank spaces. The middle space was to be checked when the respondent was unable to make up his mind—whether because both members of the pair seemed equally appropriate or because neither seemed appropriate. When the respondent was able to associate but was not quite certain, he was to check one of the spaces bordering on the

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Maxime Chastaing, "La brillance des voyelles," *Archivum Linguisticum*, XIV (1962), 1–13; and Eli Fischer-Jørgensen, "Perceptual Dimensions of Vowels," *To Honor Roman Jakobson* (The Hague, 1967), I, 667–671. Cf. also Ivan Fónagy, *Die Metaphern in der Phonetik* (The Hague, 1963), pp. 120–123. References to other studies may be found also in Delbouille, *Poésie et Sonorités*, and in Roger Brown, *Words and Things* (Glencoe, Ill., 1958), pp. 111–139.

[4] These associations were first defined in terms of the oppositions *diffuse/compact* and *acute/grave* in Roman Jakobson, C. Gunnar M. Fant, and Morris Halle, *Preliminaries to Speech Analysis*, Technical Report No. 13, Massachusetts Institute of Technology Acoustics Laboratory (Cambridge, Mass., 1952), pp. 28 and 32. Cf. also Roman Jakobson, "Closing Statement: Linguistics and Poetics," *Style in Language*, pp. 372–373.

[5] The study was supported by a grant from Vanderbilt University.

[6] See also Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, *The Measurement of Meaning* (Urbana, 1967), pp. 21–24.

middle space, and when he was certain he was to check one of the outer spaces.[7]

The nonsense forms were mostly patterned consonant-vowel-consonant, with a few vowel-consonant forms. In the consonant-vowel-consonant forms, the vowels *i*, *e*, *a*, *o*, *u*, and *i* occurred mostly between velar stops, between dental stops, between dental fricatives, and between labial stops. The same consonants recurred in the vowel-consonant forms. Initial consonants were voiced, and terminal consonants were unvoiced (as are all terminal consonants in Russian). Paired nonsense forms differed not only in their vowels but also in their consonants, in order to avoid systematization of the responses.

The pairs of suggested meanings in questionnaires of the first type were: 'little drop' versus 'gigantic tree'; 'chick' versus 'large house'; 'bright light' versus 'darkness'; and 'happiness' versus 'calamity, unhappiness.'[8] These pairs were repeated in changing order and with their members at different ends of the scale. Each pair was used four times with four different nonsense forms. In questionnaires of the second type, the same meanings were listed singly, and each of them was followed by five pairs of nonsense forms. Only 'happiness' was replaced by the more concrete 'sunny day' (*solnečnyj den'*) in these questionnaires.

The questionnaires contained detailed written instructions. In administering the questionnaires it was always necessary to repeat the instructions orally. More often than not, some encouragement was also called for, as the subjects were quite dubious about their ability to attach meaning to nonsense forms. As it turned out, they had no difficulty in most cases. Quite often they even made judgments with amazing certainty, muttering "of course" or "obviously." Their attitude was generally serious, and the questionnaires were filled out most conscientiously.

Two-thirds of the respondents were freshmen and sophomores at Moscow University, seventeen to twenty years old. Half of them were philology majors; the other half were chemistry and geology majors. The remaining third of the respondents ranged in age from sixteen to sixty-one years, in education from elementary to high school, and in occupation from miner to orchestra conductor. This third also included a group of philologists. Each group of respondents was given questionnaires of both types. Each type was answered by approximately one hundred persons, or one-half of all the respondents.[9] Analysis of the responses revealed no sig-

[7] This scale is an adaptation of the Semantic Differential (*ibid.*, esp. pp. 76–85).

[8] In Russian: *malen'kaja kaplja* vs. *ogromnoe derevo*; *cyplënok* vs. *bol'šoj dom*; *jarkij svet* vs. *t'ma*; and *ščast'e* vs. *beda*, *neščast'e*.

[9] The first type was answered by ninety-four Russians; the second type, by ninety-nine.

nificant differences between the various groups or between the responses to the two types of questionnaires. The results will therefore be discussed without differentiation.

The relatively low number of check marks in the middle, 'noncommittal' spaces demonstrates the respondents' ability to assign meaning to the nonsense forms. In the ninety-four completed questionnaires of the first type, the middle spaces on the eight scales relating to size were used no more than 140 times. Each respondent, then, used the middle space an average of 1.5 times in eight judgments. In reference to degrees of brightness and moods, the respondents resorted to the middle space more frequently: an average of 2.3 times per person on eight scales. This figure is also rather low; it means that the subjects could form an opinion in over seventy percent of the cases.

More significant, of course, is the degree of consensus among the subjects in their responses. They showed a sufficient degree of consensus and consistency to validate the conception of secondary onomatopoeia in Russian. They clearly tended to associate the diffuse vowels with smallness and the compact vowels with voluminosity, the acute vowels with brightness and happiness, and the grave vowels with darkness and unhappiness. These tendencies were particularly evident in the responses to forms containing vowels with extreme formants. Forms with *i* or *ü* were matched with 'chick' and 'little drop' by an average consensus of fifty-seven percent of the respondents (forty percent would have been the chance consensus). Correspondingly, only an average of seventeen percent of the respondents matched such forms with 'large house' and 'gigantic tree'. For the latter referents, forms containing *a* or *o* were chosen by an average consensus of fifty-five percent of the respondents. In regard to the dimensions of brightness and moods, forms containing *u*, *o*, or *i* were clearly considered more expressive than forms with other vowels. The forms containing *u* or *o* were considered affinitive with 'darkness' and 'calamity, unhappiness' by an average consensus of forty-nine percent, while only twenty-three percent considered such forms affinitive with 'bright light', 'sunny day', and 'happiness'. Forms containing *i* seemed more affinitive with the latter.

Tables 1 and 2 present the distribution of the responses to all the forms that contained vowels with extreme formants.[10] As the tables show, the

[10] The distribution of responses between the inner and outer spaces of the scales is disregarded here, as it merely reflected the general trend (i.e., a large consensus was reflected in a larger proportion of responses in the outer space, and a low consensus was reflected in a smaller proportion in the outer space). A trichotomous presentation points up the trends more clearly.

TABLE 1. PERCENTAGE DISTRIBUTION OF RESPONSES TO MAGNITUDE REFERENTS

Form	First-Type Questionnaires						Second-Type Questionnaires											
	C	U	H	D	U	T	C	U	O	D	U	O	H	U	O	T	U	O
gik										41	34	24						
ik																27	42	30
dit'				56	19	25	43	41	15									
zis'							47	35	17							11	15	74
bip'							70	15	14	55	6	38	8	23	69			
z'us'				86	8	5	57	21	23									
jup'																20	33	46
gak	44	20	36				14	16	70									
ak													52	16	31	52	16	31
jak										38	34	27	44	40	15	46	33	20
bap'							15	41	43									
ap'				57	12	31	27	41	31									
gaž													78	16	6			
žak										33	41	25						
dat'										24	34	41				30	42	27
gok							21	21	57				69	23	8	74	15	11
ok													48	24	28	56	28	15
bop'				27	17	56												

C = chick D = little drop H = large house O = other form T = gigantic tree
U = undecided.

TABLE 2. PERCENTAGE DISTRIBUTION OF RESPONSES TO BRIGHTNESS AND MOOD REFERENTS

Form	First-Type Questionnaires						Second-Type Questionnaires											
	D	U	L	C	U	H	D	U	O	C	U	O	L	U	O	S	U	O
gik													34	43	23	59	26	15
dit'				49	31	20	30	13	57	26	22	51	42	29	29			
nit'							38	39	33	18	35	46	28	37	34	40	30	29
zis'													51	32	16			
guk	63	21	16	57	13	30	51	22	26									
guk[11]							33	18	49	41	18	40						
uk				60	26	14	33	34	32	45	31	23						
gož																29	30	40
dut'													23	43	34	15	26	59
bup'													12	39	48			
up'													16	32	51			
gok							33	29	38	46	35	18	29	29	42			
dot'[12]	54	29	17				49	18	33	40	18	41						
bop'				70	24	6	36	33	30	69	18	13						
op'																29	32	38
ot'																28	41	30

C = calamity D = darkness H = happiness L = bright light O = other form
U = undecided.

consensus in regard to certain forms was especially high (in table 1: *bip'*, *z'us'*, *gaž*, and *gok*; in table 2: *guk* and *bop'*); in regard to certain forms it was especially low (in table 1: *ik*; in table 2: *ot'*); and in regard to

[11] Under D and C, *guk* was paired here with a second form containing a grave vowel: *dot'*. The difference in the distribution of the responses from the previous line, where *guk* was paired with forms containing acute vowels, is obvious.

[12] See n. 11.

certain forms it was not consistent (in table 1: *gak*, *jak*, *ap'*, and *žak*; in table 2: *dit'*, *nit'*, and *gok*). These variations may be due to the operation of determinants other than vocalic secondary onomatopoeia. These determinants may have been primary onomatopoeia, phonetic resemblance, and consonantal secondary onomatopoeia.

Primary onomatopoeia applies to associations with 'chick' and 'little drop'[13] and maya ccount for the uncharacteristic responses to *bip'*, *gak*, *jak*, *ap'*, and *žak*. The unvoiced stops of *jak*, *ap'*, and *žak* must have been associated with the sounds produced by little drops, thereby neutralizing the secondary onomatopoeic suggestiveness of the compact *a*. In reference to *gak*, several respondents said, in fact, that their responses were determined by associations with *ga-ga-ga* (geese honking).

Phonetic resemblance would apply to associations with *beda* 'calamity' and would explain both the especially high consensus on *bop'* and the puzzlingly high consensus on *dit'*. Phonetic resemblance may have also played an indirect role in the subjects' view of *nit'* as appropriate for 'darkness'—though not for 'calamity' and 'unhappiness'—by association with *noč'* 'night'. (The uncharacteristic response to *gok* in relation to 'darkness' can thus be simply due to the fact that the polar form on the scale was *nit'*.)

Finally, *consonantal* secondary onomatopoeia has to be taken into consideration. The only consonant which seems to have affected the responses is *g*. Being both compact and grave, it seems to have reinforced suggestions of 'voluminosity' as well as suggestions of 'darkness': seventy-eight percent of the respondents associated *gaž* with 'large house'; seventy-four percent associated *gok* with 'large house', and sixty-nine percent associated the same form with 'gigantic tree'; sixty-three percent associated *guk* with 'darkness'.

It seems that, even when additional determinants are taken into account, *vocalic* secondary onomatopoeia is still the basic factor underlying the responses presented in tables 1 and 2, as in many cases none of the additional determinants is applicable and, most important, the responses do seem to fall into a fairly clear pattern. All the inconsistencies can be accounted for through considerations of primary onomatopoeia and phonetic resemblance. On the other hand, there does not seem to be a clear explanation for the varying degrees of consensus within the pattern, excepting the forms with *g* discussed above.

It has been suggested that secondary onomatopoeic associations stem from linguistic facts—that is, that diffuse vowels actually occur more fre-

[13] These referents, admittedly, were not well chosen.

quently in references to smallness, that compact vowels characterize references to large magnitudes, and that acute and grave vowels are distributed unevenly between references to light and to darkness.[14] Yet if such correspondences could be found to prevail not only in contemporary English, French, German, and Danish, but also in contemporary Russian, then secondary onomatopoeic associations may well be their cause rather than their consequence. Such correspondences in English, French, German, Danish, and Russian could hardly be attributed to the kinship of these languages, as these languages have each undergone a series of vocalic as well as lexical changes. Such correspondences might rather result from processes of selection and elimination, motivated by secondary onomatopoeic associations. It seems that such associations are psychological rather than dependent on linguistic environment, but only further empirical data from totally unrelated languages can confirm this theory.[15]

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[14] This theory is, to date, no more than a conjecture and would be difficult to prove objectively, as noted in Brown, *Words and Things*, pp. 119–120.

[15] Or, as stressed by Louis G. Heller at the National Conference of the Linguistic Circle of New York (see p. 107), refute it. To my knowledge, psychology has not yet established the exact nature of the phenomenon.