

THE ICONIC THEORY OF LANGUAGE ORIGIN

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1. Introductory remarks

Homo sapiens knows at least three great Prohibitions in his sane and sober history. One: the great American Prohibition, when the sale of alcoholic beverages was forbidden by an amendment to the constitution; this survived for thirteen years (1920-1933). Two: the great Soviet Prohibition, when the trafficking of free ideas was forbidden - by no amendment to the constitution; this survived for some seventy years (1917 – to perestroika). Three: the great Paris Prohibition, when the trafficking of glossogonic beverages was forbidden by an article in the constitution.

Officially the Paris Prohibition lasted for twelve years (1866-1878); unofficially, it is still alive and kicking - kicking hard. Though here, too, there is an inkling of perestroika. This inkling is the Language Origins Research Workshop at the XVIth International Congress of Linguists in Paris (July 1997).

The Paris Prohibition was understandable - in that it discouraged simplistic dilettantish speculation about Language Origins; it was, however, starkly unjustifiable - in that it encouraged offhand rejection even of serious in-depth research in the entire field...

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What? Yet another treatise on the Origin of Language? Quosque tandem abutere, Catilina, patientia nostra! Well, yes: I durst embark on this subject, my plea being the new Iconic Theory of Language Origin advanced in the early eighties (Voronin, 1980; 1982), an integral part of that new linguistic science, Phonosemantics, with a comprehensive system of arguments (and evidence) from divers (and diverse) quarters.

Bearing in mind the complexities, for the Western reader, of dealing with works published in Russian, and also due to limitations of space, I have cut my Russian-language references here to a dire minimum. The interested reader, on contacting me, would of course get further references (their number is prodigious).

2. On phonosemantics

2.1. Some Starting Points

In 1982 the book Qsnovy Fonosemantiki (Fundamentals of Phonosemantics) was published, in Russian, by Leningrad University Press (Voronin, 1982): an abridged version of the author's doctoral dissertation of the same title (see: Voronin, 1980). The material researched covered over 10500 onomatopoeic and sound-symbolic words from more than a hundred languages - chiefly those commonly viewed as unrelated (cited most consistently were English, Bashkir and Indonesian). Systems theory, systemology was a prerequisite of paramount importance for the emergence of Phonosemantics. See a recent pioneering work on systems theory that bears, inter alia, on iconism (Koch, 1997). For numerous works by eminent precursors of Phonosemantics, see references in (Voronin, 1982; 1990).

The aim of Phonosemantics as a linguistic science sui generis is the study of the phonoiconic (i.

e. onomatopoeic and sound-symbolic) system of language in pantopochrony. By the latter term I mean a unified approach incorporating the study of (a) topologically (geographically) diverse systems and (b) systems differing chronologically (in origin, in evolution, in modern synchrony). [For the phonoiconic systems chief property, see Voronin 1980: 8f.]

Discussing his fundamental semiotic trichotomy (icon - index - symbol), Ch. S. Peirce suggests that there are two kinds of iconic sign: the image and the diagram (Peirce, 1932); this also pertains to the linguistic sign. The relatively simple image in itself resembles (to some extent) the corresponding referent, whereas in the more complex diagram the relationship among its parts resembles the relationship among the parts of the corresponding referent. In their form, images and diagrams may be kinesic (gestural, non-verbal: gestures) or phonic (vocal, verbal: onomatopoeic and sound-symbolic words). Phonosemantics deals with phonic (not kinesic) iconic images (not diagrams).

2.2. Iconic Word: The Broad Concept

It should be emphasized that iconic words are not only words that are felt to possess a phonetically motivated link between sound and sense - iconic, too, are all those countless words where, in the course of historical development, this link has become obscured but where it can be uncovered with the aid of "deep down" etymological analysis buttressed by external typological data (i. e. data from languages commonly viewed as unrelated). This broad synchrogenetic concept leads us to realize the true scope of onomatopoeia, and especially sound symbolism, and the actual balance of iconic and non-iconic elements in language (Voronin, 1980; 1989). The scope of the iconic system is, contrary to popular scientific lore, extremely great (see e. g. Voronin, 1982; Kazakevich, 1975; 1989; Bratoes, 1976; Lapkina, 1979; Klimova, 1986; Sabanadze, 1987; Slonitskaya, 1987; Khusainov, 1988; Veldi, 1988; Ivanova, 1990), and phonic iconism is no insignificant side-issue - it is a problem of major importance, intertwined with fundamental problems like language typology, the nature of the linguistic sign, the origin of language (to name but a few). A breakthrough here is possible if we discard the old narrow concept of the iconic word (synchronistic, subjectively Gefühl-oriented), accepting the new objective broad concept.

3. Towards the iconic theory of language origin

3.1. General Considerations

To obtain a clearer vision of our subject, I propose to begin with a delineation of the chief aspects of this formidable megaproblem, Origin of Language (cf. Voronin, 1980).

Origin of Language: Aspects of the Problem

A. Conditions

I. Biological

II. Social

B. Origin Proper

I. Sign Form

1. Kinesic (Gestural, Non-Verbal)

2. Phonic (Vocal, Verbal)

II. Sign Meaning

III. Form-Meaning Link in Sign

One of the first to point out the need for distinguishing between different aspects of the problem of language origin was A. G. Spirkin, who proposed to speak of (1) the biological prerequisites, (2) objective conditions, (3) initial language material, (4) means of forming the link (tie) between sounds and images; he also noted that what the onomatopoeic and interjectional theories of the

past had to do with was ascertaining the mechanism of speech formation, not the conditions for its emergence (Spirkin, 1957).

For too long a time almost any discussion of the origin of language has been (chiefly in East European linguistics) narrowed down to debating the conditions (prerequisites) for the emergence of language (see my "A."). The outcome: virtually ousting the pivotal aspect of origin proper (see my "B."), this line of enquiry failed to reach out to language per se, only getting through to the conditions that helped shape emergent language (doubtlessly an extremely important issue, but definitely not the crux of the matter).

For too long a time "social" - or, grudgingly, "sociobiological" - has been the password for language origin conditions. The outcome: the "bio" element was unjustly downgraded and harshly toned down (almost to the point of disappearance); and Man (capitalized!), towering above that lowly animal world, stood out proudly if somewhat uneasily, fingering a fig leaf to cover the primitive (though nonetheless real) "animal" roots of language.

Without denigrating it, the "social" element has to be placed into perspective. As I attempted to outline earlier, it is in modern (contemporary) synchrony that language is a sociobiological phenomenon (see "A.II+I", in my scheme above) - in its genesis it is biosocial (see "A.I + II"); the shift in emphasis here is fundamental (Voronin, 1982). I shall perforce only refer here to supportive evidence e. g. in (Allott, 1973; 1989; Fromkin, 1988); on biological foundations of language see (Lenneberg, 1967). Cf. also the conclusion from a classic: "The growth of the sign's usage ... is a highly complex genetic process, with its own 'natural history of signs', i. e. natural roots and transition forms in more primitive spheres of behavior..." (Vygotsky, 1956: 112). Conversely, incessant harping (from a varied assortment of sources) on the tune of "The Uniqueness of Language to Humans" led to hypering this basically sound idea out of all proportion - to the extent that Origins slid out of sight, to become hardly relevant.

Man owes his origins to the animal kingdom, and human thought has its phylogenetic roots in the mental activity of the higher animals - these facts are now universally acknowledged. But when it comes to acknowledging the descent of man's language from his animal ancestors, hey presto!: that unbroken and consistent evolutionary line, "animal → man", in the minds of many scholars suffers a break, and they are unable to bring themselves to acknowledge the natural biological (biosocial), "animal" character of human language origin ("Animal origins? How shocking!"). Could this be an ironic leftover from the reaction of Darwin's opponents, shocked by man's descent "from those monkeys"? It has now become increasingly clear that, to quote L. N. Gumilev, "apart from other things, man is an animal - which in no way detracts from his dignity" (Gumilev, 1990: 233).

As I had occasion to point out earlier (Voronin, 1980: 26), a consistently evolutionistic approach to the origin of language by no means denies that great qualitative divide, "prehuman/human" - it "only" bridges the gap between the two (cf. Allott, 1989: 2). One vivid illustration of this is I. N. Gorelov's Theory of the Functional Basis of Speech, an information system existing in the psychic apparatus of man, ensuring the formation of "protoconcepts" - its tangible traces being the iconic, nonarbitrary mechanisms involved in interjections, onomatopoeic and sound-symbolic words, as well as in nonverbal components of speech (Gorelov, 1977).

For too long a time form and meaning in the nascent linguistic sign have been approached separately, the link between the two being virtually non-existent for the linguist. The reason: "This is how 'arbitrary sign' postulate has it". What of the outcome?

A graphic illustration is the stance taken by F. de Saussure's arbitrary precursor, William Dwight Whitney: "Every existing form of human speech is a body of arbitrary and conventional signs for thought, handed down by tradition from one generation to another..." (Whitney, 1867: 32). "Tradition"... but this pertains to evolution, not origin. And what of origin - surely there was no tradition (yet) there? Arbitrary thesei theory, even on a contemporary level, does not (and what is more, cannot) provide an answer to the central issue of language origin; in this, the theory is a dead end - and a false start. In the deliberations of the arbitrarists there is always a tangible element of *Deus ex machina*, and their theory of language origin is willy-nilly very

much like the birth of Athena: springing forth from the head of Zeus full-blown, and in complete armor.

Postulation of initial arbitrariness for the linguistic sign presupposes the capacity in primitive man for fairly developed abstract thinking; this presupposition, however, is at variance with the findings of modern science. The superior level of abstract thought could bring forth the conventional sign (reflecting no features of the object designated), whereas the metaphoric intellect “could engender and perceive only the motivated sign calling forth very concrete notions and imitating some feature of the object” (Gorelov, 1974: 34).

As A. A. Leontiev shrewdly remarked, glottogenesis is “a typical example of a composite problem”, one of those problems whose solution “is essentially impossible within the limits of any single science ... Its solution requires the cooperative effort of a number of sciences - not just working on parallel courses but moving to meet one another half way” (Leontiev, 1972: 137, 156).

There being naturally no question of direct evidence for the (iconic) origin of language, circumstantial evidence is not to be discarded. This latter generally tends to prove a fact in issue by proving other facts or circumstances which, according to the common experience of (in our case) various sciences (branches of science), are usually or always attended by the fact in issue, and therefore affords a basis for a reasonable inference of the occurrence of the fact in issue. The diversified and manifold nature of circumstantial evidence in favor of the iconic origin of language (qualitative factor), together with the sheer mass of this evidence (quantitative factor) accumulated to date, immensely enhance the reasonable inference of glottogenetic iconicity. The evidence amassed achieves a “critical mass” that brings forth a persuasive cumulative argument for iconicity. A detailed systemic discussion of what I call The Circumstantial Evidence Chain will be given in further publications; in the present paper I only supply a list of the chief elements in this chain, adducing one example.

Evidence comes from the following quarters; and so do the arguments:

- Biology (including Ethology), Neuropsychology (cerebral asymmetry), Primatology, Speech Ontogeny, Psycholinguistics and Cognitive Science, Synkinaesthesia (including Synaesthesia);
- Philosophy (principle of determinism; principle of representation; tendency for form-content conformity);

- Systems theory, systemology;

- Logic (cumulative conclusive force of manifold circumstantial evidence);

- Linguistics (language in archaic societies; glottochronology, or lexicostatistics;

protolinguistics; etymology; typology; method of phonosemantic analysis; iconic sign

potentialities: its numerical strength, limitless productivity, limitless semantic development, limitless functional capacity; phonosemantic laws: the conformity law, the homeomorphism law, the multiple-choice nomination laws, the iconic sign law). Apart from phonosemantic studies, an especially large portion of evidence for the iconic origin of language is, objectively, to be found in works on protolinguistics (e. g. Shevoroshkin, 1987; 1990; 1995; Koch, 1990; 1991; 1997; Wescott, 1980; 1988; Figge, 1990; Décsy, 1990; cf. Wind, 1989; Gamkrelidze and Ivanov, 1990), in etymological-cum-typological studies (e. g. Malkiel, 1962; Gazov-Ginzberg, 1965; Abayev, 1979; Kornilov, 1984), in works on language evolution (notably Bichakjian, 1988; 1995), in linguotheoretical papers (Nyikos, 1996), in studies on sound symbolism (e. g. Sapir, 1929; Levitsky, 1973; 1994; Jakobson and Waugh, 1979; Zhuravlev, 1974; 1987).

I conclude this section with an illustration - a striking piece of evidence from the Circumstantial Evidence Chain. Numerous neuropsychological studies point to two crucial facts. One: the right hemisphere is a primary formation, considerably older than the left hemisphere (Balonov and Deglin 1976: 194). Two: the right hemisphere is responsible for the production of signs characterized by the following features: concrete, metaphoric, prelogical, emotional, expressive; now these are precisely the features typical of the (nascent) iconic sign. In a paper presented in 1990 at W. Koch's Bochum colloquy, Tatiana Chernigovskaya concludes: “the thinking provided by the right hemisphere is metaphoric, gestalt-like, a kind of mosaic (...) it seems that

man's evolution is the evolution of signs from iconic resemblances - gestalt type of processing - characteristic of semiotic abilities in primates and in early hominids as well as in young children and archaic societies, towards complicated arbitrary signs..." (Chernigovskaya, 1995: 64-65). Ergo: neuropsychological evidence (specifically, cerebral asymmetry) brings us to the conclusion that semiogenesis was iconic, natural, non-arbitrary - and so was glottogenesis (cf. Voronin, 1980: 31).

3.2. A Rejoinder to Theseism

I address here some of the basic views supporting theseism, as presented in the succinct Convolute of Abstracts for the Language Origins Research Workshop at the XVIth International Congress of Linguists: "Precondition of physei-type word production is that the people have more than one unit in their phoneme (sound) inventory. As at the beginning epochs of human language (approximately until 25.000) only one and only vowel-consonant ("vocsonant") existed, there were no chances for the variation of different sounds within existing soundsequences. A single element cannot be varied. The non-timbric elements (H/E, quantity, stress, pitch, register) offered no possibilities for causal (iconic) connection between concept and sound (...). Iconism (physeism) may explain the origin of certain words but not the origin of language in its entirety at its very beginning (...) Theseism is more universal than physeism (...). Physei/thesei is thus not a problem of Language Origins, it is a problem of word's (soundsequence) origin relevant only for the post-25,000 times. "Sound-iconism" ("tone-iconism", earlier called soundsymbolism) is unable to produce universally valid rules for word creations with causal character" (see: Décsy, 1997b: 12).

Item one in my rejoinder concerns the assertion that «"sound-iconism" ... is unable to produce universally valid rules for word creation with causal character». In point of fact, "sound-iconism" is actually able to do just that. A telling instance is the Universal Classification of Onomatopes (Voronin, 1982; 1994), with its acknowledged explanatory, predictory (prognostic) and heuristic potential for sound-imitative word creation (in phonotype models form) - tested in languages like English, Zulu, Samoyed, German, Indonesian, Bashkir, Estonian, Georgian, Kazakh, Russian, Tatar.

Item two in this rejoinder concerns a somewhat broader semiotic problem - the sign in time. The essence of the rejoinder can be seen from an exposé of my non-arbitrarian position (below, prefixed by tentative table).

The Sign in Time: A Non-Arbitrarian View

SignTime(stages)	Function	Formation(coinage)	Diachrony	Form
Representation	Commu-nica-tion	Non-Arbitrary(motivated)	Arbitrary(demotivated)	Gesture
Word				
Primary(iconic,natural)	Secondary(morphological and semantic)			
Origin				
Evolution	Earlier			
	Later			
	Modern			

The Sign in Time: A Non-Arbitrarian View.

Function. The germ of relative denaturalization (deiconization) is present in the sign ab ovo. What should be realized and borne in mind is that the sign is born "out of" representation (reflection) but "for" communication, not representation (Voronin, 1980: 32): the most essential function of language is communication (which is not to say that cognition plays only a minor role; that, however, is to be discussed elsewhere). Therefore, while in the sign as a representation

entity, the leading role is played by its homeomorphism with (i. e. likeness to) the referent, in the sign as a communication entity this homeomorphism is of little consequence. With the sign evolving - in keeping, shall we say, with its predestination - predominantly in its communication function, its representational nature, eroded and blurred, recedes into the background. This duality of function (and nature) of the sign explains the marked and ever baffling difference in the balance of non-arbitrariness and arbitrariness at different stages.

Formation. I contend that what has always been taken for arbitrariness in the formation (coinage) of a sign is in reality arbitrariness in the choice of the motif - a feature of the referent (object) singled out to give the latter a name. Underlying the arbitrariness of this randomly chosen feature is the non-arbitrary determinism of the latter belonging to its "own" specific referent. Going "up" from extralinguistics to linguistics, we thus have three alternating telescopic matrioshka layers: non-arbitrary (referent, i. e. object to be named) → arbitrary (motif, i. e. feature of referent - selected for naming the referent) → non-arbitrary (the sign, with its motivated form: motivation primary or secondary). Only the third of these is linguistic, and it is non-arbitrary. Diachrony. There seem to be no arbitrary signs in *statu nascendi*. Masquerading as arbitrary signs are non-arbitrary demotivated signs. To put it in another way: signs taken to be arbitrary (unmotivated) are in reality non-arbitrary demotivated signs, i. e. those whose motivation has become obscured (cf. dictionary labels like `etymology obscure'). Thus the semiotic category of arbitrariness (demotivation) would not belong to formation (coinage), to origin - it would be a category of evolution and modern synchrony. From the point of view of the sign's evolution, non-arbitrariness in general and iconism in particular are its inherent features, whereas arbitrariness is an acquired feature.

Form. Any discussion of language origin rightfully focuses on the origin of the linguistic sign as the central element in language. Surprisingly, however, only one form of sign is usually taken into consideration: the word - to be more precise, the spoken word. Overlooked is the essential fact that the sign has two basic forms: gesture (the kinesic, gestural, non-verbal form) and word (the phonic, vocal, verbal form). Frequently overlooked is also the fact that it would be a fallacy to equate the origin of speech to the origin of language or to reduce the problem of the latter to that of the former. I resort here to Prof. G. Décsy's own words: "Basic observation formulated as early as 1922 by Wilhelm Wundt in his *Völkerpsychologie*: The sound is gesture (*Der Laut ist ein Gebärde*) (...). In this sense, the language - and even the sound production - is certainly of gestural origin. Gestures as result of motion are very old, centered in the archaic parts of the brain (cerebellum). However, in the brain the speech centers are located in the neopallium (Broca/Wernicke areas).

Speech production is, according to this, a relatively late fine-modulative non-motoric motion topologically quite far from the mostly motoric-reflexive steering center in the archaic parts of the human brain" (Décsy, 1997a: 10). Cf. the following from M. Donald's fundamental treatise: "The primacy of motor evolution is central to any credible phylogenetic account of language. Before they would invent a lexicon, hominids first had to acquire a capacity for the voluntary retrieval of stored motor memories, and this retrieval had to become independent of environmental cueing. Second, they had to acquire a capacity for actively modeling and modifying their own movement" (Donald, 1993: 740). "This leads to the first proposal of my theory: the first major cognitive transition broke the hold of the environment on hominid motor behavior and provided hominids with a new means of representing reality. The form of the adaptation was a revolutionary, supramodal improvement in motor control called "mimetic skill". (...) Mimetic action is basically a talent for using the whole body as a communicative device, for translating event perceptions into action. Its underlying modeling principle is perceptual metaphor..." (Ibid.). Thus gesture (in the broad sense: ranging from body movement through gesticulation to facial expression to would-be articulation) precedes word, and this gesture is iconic (primary, natural, mimetic).

4. Concluding remarks

Long overdue now, a “Paris Reassertion” (vs. the Paris Prohibition) is possible - on a new state-of-the-art systemic interdisciplinary foundation.

Cf. Bernard Bichakjian's remarks: “Today, a new dawn has broken. The availability of reliable data from primatology, biology, archeology, and linguistic genealogy and language evolution has reopened the debate on language origins and endowed it with an empirical basis” (Bichakjian, 1995: 50).

A most significant part of this empirical basis goes to substantiate the Iconic Theory of Language Origin.

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References

1. Abayev V. I. Istoriko-etymologičeskij slovar osetinskogo jazyka. Vol. III. (Ossetian Dictionary, Historical and Etymological. - in Russian.) Leningrad, 1979.
2. Allott R. The Physical Foundation of Language. Seaford, 1973.
3. Allott R. The Motor Theory of Language Origin. Book Guild, Lewes, Sussex, 1989.
4. Balonov L. J., Deglin V. L. Slux i reč dominantnogo i nedominantnogo polušarij. (Hearing and Speech of the Dominant and Non-Dominant Hemispheres. - in Russian.) Leningrad, 1976.
5. Bichakjian B. Evolution in Language. Karoma, Ann Arbor, 1988.
6. Bichakjian B. The Evolution of Speech and Language in the Paleolithic and Today // Language in the Würm Glaciation / Ed. U.L.Figge. Acta Colloquii, BPX. Vol. 27. Brockmeyer, Bochum, 1995.
7. Bratov I.B. Akustičeskije onomatopy v indonezijskom jazyke. (Acoustic Onomatopes in Indonesian. – in Russian.) Avtoref. kand. diss. Leningrad.
8. Chernigovskaya T. V. Cerebral Asymmetry: A Neuropsychological Parallel to Semiogenesis // Language in the Würm Glaciation / Ed. U. L. Figge. Acta Colloquii, BPX. Vol. 27. Brockmeyer, Bochum, 1995.
9. Décsy G. The Uralic Protolanguage: A Comprehensive Reconstruction. Eurolingua, Bloomington, Indiana, 1990.
10. Décsy G. The Wundt-Principle: A Basic Observation // Language Origins Research: State of the Art as of 1997. Convolute of Abstracts (XVIème Congrès International des Linguistes. Paris.) / Ed. G. Dècsy. P. 10. International Paleolinguistics Society, Bloomington, Indiana, 1997a.
11. Dècsy G. Basic Views Supporting Theseism // Language Origins Research: State of the Art as of 1997. Convolute of Abstracts (XVIème Congrès International des Linguistes. Paris.) / Ed. G. Dècsy. P. 12. International Paleolinguistic Society, Bloomington, Indiana, 1977b.
12. Donald M. Précis of “Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition”. Behavioral and Brain Sciences, 16. P.737-748. 1993.
13. Figge U. L. On Language Origin: Consonants and Coginition // Genesis of Language / Ed. W. A Koch. P. 200-227. Acta Colloquii. Brockmeyer, Bochum. 1990.
14. Fromkin V. A. The State of Brain/Language Research // Language Communication, and the Brain. / Ed. F. Plum. P. 1-18. New York, 1988.
15. Gamkrelidze Th. V., Ivanov V. The Early History of Indo-European Languages// Scientific

- American. March. P. 81-89. 1990.
16. Gazov-Ginzberg A. M. Byl li jazyk izobrazitelen v svoix istokax? (Was Language Iconic in Its Origins? - in Russian.) Moscow, 1965.
 17. Gorelov I. N. Problema funkcionalnogo bazisa reči v ontogeneze. (Functional Basis of Speech in Ontogeny: The Problem. - in Russian.) Chelyabinsk. ped. inst. Chelyabinsk, 1974.
 18. Gorelov I. N. Problema funkcionalnogo bazisa reči (Functional Basis of Speech: The Problem. - in Russian.) Avtoref. dokt. diss. Moscow, 1977.
 19. Gumilev L.N. Etnogenez i biosfera Zemli. (Ethnogenesis and the Biosphere of the Earth. – in Russian) Leningrad, 1990.
 20. Ivanova M. V. Zvukoizobrazitel'naja leksika v anglojazyčnoj detskoj skazke. (The Ponoiconic Vocabulary of English-Language Fairy Tales. - in Russian.) Avtoref. kand. diss. Leningrad, 1990.
 21. Jakobson R., Waugh L. The Sound Shape of Language. Bloomington, 1979.
 22. Kazakevich O. A. Monosyllabic Onomatopoeic Ideophones in Zulu (in Russian) // Issledovanija po strukturn. lingvistike. P. 39-53. Moscow, 1975.
 23. Kazakevich O. A. Mašinnyj fond selkupskogo jazyka. (Selkup Language Data Base. - in Russian.) Avtoref. kand. diss. Moscow, 1989.
 24. Khusainov K. Sh. Zvukoizobrazitel'nost v kazaxskom jazyke. (Phonic Iconism in Kazakh. - in Russian.) Alma-Ata, 1988.
 25. Klimova S. V. Glagoly "nejasnogo proisxoždenija" v Sokraščennom Oksfordskom slovar: Elementy etimologičeskoj fonosemantiki. (Verbs of Obscure Origin in the Shorter Oxford English Dictionary: Elements of Etymological Phonosemantics. – in Russian). Avtoref. kand. diss. Leningrad, 1986.
 26. Koch. W. A. Ding-Dong II and Further Design Schemes for Glottogenesis // Genesis of Language / Ed. W. A. Koch. Acta Colloquii. P. 386-404. Brockmeyer, Bochum. 1990.
 27. Koch W. A. Language in the Upper Pleistocene. BPX. Vol. 28. Bochum. 1991.
 28. Koch W. A. Systems and the Human Sciences // Systems: New Paradigms for the Human Sciences / Eds. G. Altmann and W. A. Koch. P. 671-755. Berlin, 1997.
 29. Kornilov G. J. Imitativy v čuvašskom jazyke. (Imitatives in Chuvash.) Cheboksary, 1984.
 30. Lapkina L. Z. Anglijskije i baškirskije akustičeskiye onomatopy. (English and Bashkir Acoustic Onomatopes. - in Russian.) Avtoref. kand. diss. Leningrad, 1979.
 31. Lenneberg E. H. Biological Foundations of Language. New York, 1967.
 32. Leontiev A. A. The Problem of Glottogenesis in Contemporary Science. (in Russian.) // Engels i jazykoznanije. 135-157. Moscow, 1972.
 33. Levitsky V. V. Semantika i Fonetika. (Semantics and Phonetics. - in Russian.) Chernovtsy, 1973.
 34. Levitsky V. V. Sravnitelno-etimologiceskij slovar germanskix jazykov. (A Comparative Etymological Dictionary of Germanic Languages. - in Russian.) Chernovtsy, 1994.
 35. Malkiel Y. Etymology and General Linguistics. Word 18. P. 198-219. 1962.
 36. Nyikos J. Saussure's Precipitate Principle I and an Ameliorative Amendment // Twelfth Meeting of the Language Origins Society. Abstrasts. P. 18. University of Maryland Baltimore County. 1996.
 37. Peirce Ch. S. Philosophical Writings. Vol. II. Cambridge, Mass. 1932.
 38. Sabanadze M. Y. Sinesteziya v podjazyke muzykoznanija. (Synaesthesia in the Language of Musicology. - in Russian.) Avtoref. kand. diss. Leningrad, 1987.
 39. Sapir E. A Study in Phonetic Symbolism // Journal of Experimental Psychology. Vol. 12. P. 225-239. 1929.
 40. Shevoroshkin V. Indoeuropean Homeland and Migrations // Folia linguistica historica. /ol. 7. P. 27-250. 1987.
 41. Shevoroshkin V. The Mother Tongue: How Linguists Have Reconstructed the Ancestor of all Living Languages // The Sciences. May/June. P. 20-27. 1990.

42. Shevoroshkin V. Genetic Relatedness of Languages // Language in the Würm Glaciation / Ed. Udo L. Figge. Acta Colloquii, BPX. Vol. 27. P. 39-53. Brockmeyer, Bochum. 1995.
43. Slonitskaya E. I. Zvukosimvolizm oboznačenij okruglogo: opyt tipologičeskogo issledovanija. (Sound Symbolism in Names of Round Objects: A Typological Study. - in Russian.) Avtoref. kand. diss. Leningrad, 1987.
44. Spirkin A. G. The Origin of Language and Its Role in the Formation of Thinking. In: Myšlenie i jazyk. (Thinking and Language. - in Russian.) Moscow, 1957.
45. Veldi E. Anglo-estonskije paralleli v onomatopeje. (Anglo-Estonian Parallels in Onomatopoeia. - in Russian.) Avtoref. kand. diss. Tartu, 1988.
46. Voronin S. V. Osnovy fonosemantiki. (Fundamentals of Phonosemantics. - in Russian.) Avtoref. dokt. diss. Leningrad, 1980.
47. Voronin S. V. Osnovy fonosemantiki. (Fundamentals of Phonosemantics. - in Russian.) Leningrad, 1982.
48. Voronin S. V. The Sound/Sense Riddle: Evidence from Germanic Languages // Paradigmatic and Syntagmatic Investigations in Germanic Languages. Abstracts of Papers for the Conf. P. 109-110. Vilnius, 1989.
49. Voronin S. V. Fonosemantičeskije idei v zarubežnom jazykoznanii. (Phonosemantic Ideas in Western Linguistics. - in Russian.) Leningrad, 1990.
50. Voronin S. V. The Universal Classification of Onomatopes Twenty-Five Years// Tenth Meeting of the Language Origins Society. Abstracts. P. 35-36. Berkeley. 1994.
51. Voronin S. V. Approaching the Iconic Theory of Language Origin: Pertinent Laws and Tendencies from Phonosemantics // Bochum Publications in Evolutionary Cultural Semiotics. Bochum. 1998
52. Vygotsky L. S. Izbrannyje psixologičeskije issledovanija. (Selected Psychological Studies - in Russian.) Moscow, 1956.
53. Wescott R. W. Sound and Sense (Linguistic Essays on Phonosemic Subjects). Lake Bluff. III. 1980.
54. Wescott R. W. Derogatory Use of the Marginal Phoneme /b/ in Proto-Indo-European // J. of Indo-European Studies. Vol. 16. P. 365-359. 1988.
55. Whitney W. D. Language and the Study of Language. London, 1867.
56. Wind J. The Evolutionary History of the Human Speech Organ // Studies in Language Origins. Vol. I. / Ed. J. Wind. Amsterdam, 1989.
57. Zhuravlev A. P. Fonetičeskoje značenije. (Phonetic Meaning. - in Russian.) Leningrad, 1974.
58. Zhuravlev A. P. Dialog s kompjuerom. (Dialogue with a Computer. - In Russian.) Moscow, 1987.